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A BEHAVIOR ANALYTIC INTERPRETATION OF ATTRIBUTIONS IN THE CONTEXT OF BEHAVIOR THERAPY*

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Summary — Clients often provide reasons, justifications, and explanations (i.e., attributions) about the causes of their problems and what they believe needs to be done to ameliorate them. Behavior therapists also frequently generate hypotheses about causal factors contributing to client behavior problems. We discuss the function of attributing in the context of behavior therapy and interpret the cognitive construct of attributions from a behavior analytic perspective as a verbal act of relating otherwise arbitrary events with origins in a social–verbal community. The applied implications of our interpretive analysis of attributions and their role in client problems suggest different therapeutic strategies. © 1997 Elsevier Science Ltd

Cognitive theorists have taken an appropriate interest in trying to account for private events, but they have had a difficult time convincing behavior analysts of the merit of their approach and findings. Perhaps one reason for this difficulty is that cognitive psychologists, by and large, have not described their subject matter in a language that behavior analysts find useful. Cognitive theorists and cognitive–behavior therapists have adopted terms borrowed from information computer science and lay language to describe private events and their role in complex human behavior. In contrast, behavior analysts have continued to use and expand their basic behavioral language and have applied this language to complex human behavior, while still avoiding a cognitive psychology. Cognitive theorists went in one direction to explain complex human behavior, and behavior analysts kept on moving in their own direction. Although one might ask whether anyone should bother interpreting the subject matter of cognitive psychology in behavior analytic terms, such an exercise may be useful as a step in facilitating dialogue between these approaches (see Hawkins & Forsyth, 1997, this issue). We advocate such a dialogue, not in the hope of philosophical reconciliation, but to make clear the differences and perhaps to learn from one another. It is in this spirit that we will address and interpret the social–cognitive phenomena of attributions within a clinical behavior analytic perspective.

Attribution theory is a collection of diverse theoretical and empirical contributions that

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emphasize individuals' interpretations about why events happen as they do. Indeed, most of us negotiate our social world by asking and answering "why" questions, providing reasons, justifications, and explanations for our own behavior, that of others, and of events in our social environment. Similarly, clients often enter therapy with elaborate reasons, justifications, and explanations for their problems. Yet, the role of reason-giving or attributional activities in human behavior is not well understood.

One reason for this lack of understanding is that the origins of reason-giving and explanation-seeking activities have not been clearly specified. Instead, attribution theorists have been more interested in attributions as a cognitive process, that is, as an assumed independent, or at least mediating, variable that consequently affects behavior. We will attempt to show how attributions can be interpreted from a behavior analytic perspective as a verbal process that involves relating otherwise *arbitrary* events in relation to a social–verbal context from which they originate. Here, we prefer to emphasize that the relations studied in attributions are arbitrary in the sense that "reasons" include a host of relations between events established by social convention. Because behavior therapies operate at some verbal level, and attributions are primarily a verbal concept and activity, we briefly suggest how a clinical behavior analytic approach addresses the role of reason-giving in clinical problems.

What Are Causal Attributions and Why Are They Important?

In a Literal Sense

An attribution is an inference about why an event occurred or about a person's dispositions or other psychological states. These causal inferences, in turn, have two general features. First, they describe relations between some causal antecedent(s) and outcome(s). For instance, in response to an event "Sally broke up with her boyfriend" several causal interpretations are likely to be given, such as "They did not get along," "He was seeing someone else," or "They now live too far apart to maintain a close relationship." Second, and perhaps most importantly, attributions require verbal specification of events and outcomes; however, they may not always be communicated orally (e.g., "Why do I feel tense?—Because I'm worried about making my car payments" or "Why didn't I get that job?—Because I'm not qualified"). By cognitive definition, attributions are "both immediate answers to 'why' questions as well as lasting cognitive structures, schemata, or convictions that are, at times, barely accessible to consciousness" (Kelley, 1983). When spoken aloud, however, attributions most commonly take the form of reasons, explanations, and descriptions about the self (i.e., reasons for our own dispositions, behavior, and experiences), about others, or about events in the world. For instance, "Why did John turn you down for a date?—Because he doesn't like me," "Why do you avoid flying in planes?—Because I get anxious," or "Why don't you leave your house?—Because I'm afraid that I might panic." When we speak of attributions, therefore, we are undoubtably talking about verbal actions of human organisms. Cognitive theorists and behavior analysts, however, generally differ about the psychological role attributions play in human behavior.

In a Psychological Sense

The importance of attributions, in a psychological sense, resides in the fact that attributions involve relating otherwise arbitrary events. Most cognitive theorists assume that a major

function of the attribution process is to understand, organize, and form meaningful perspectives about the social world to make it a stable, orderly, and predictable place (Försterling, 1988; Heider, 1958; Weary, Stanley, & Harvey, 1989; Weary et al., 1989). By establishing relations between events and outcomes, individuals can manage their interpersonal environment more effectively; however, once these arbitrary relations become established, they can lead either to adaptive and effective behavior or to maladaptive and ineffective ways of interacting with the world. Although reason-giving can lead to effective action when it brings us into contact with environmental contingencies that are indeed influential, it can also have the opposite effect. That is, reasons, explanations, and attributions can lead to ineffective action when they are treated literally as equivalent to environmental contingencies as causes of behavior psychologically. This is especially the case for attributions concerning private events such as unpleasant thoughts or feelings.

For example, a therapist might ask a client "Why do you avoid flying in planes?" and the client may respond "Because I'm worried I will get anxious." Such attributions to feelings and thoughts as causes and as good reasons for doing or not doing are largely supported by our social–verbal community (Hayes, 1987). Anxiety is an accepted (reinforced) reason for not flying; however, it may not represent *the* reason for not flying. Cognitive–behavior therapists generally accept the view that thoughts and feelings are good reasons and causes of human suffering. Thus, many cognitive–behavioral treatments for anxiety and depression are designed to eliminate, reduce, or help the client control the dysfunction attribution, thought, or feeling (Barlow, 1988; Beck & Emery, 1985; Mahoney, 1977; Meichenbaum, 1977). Implicit in this move, however, is the assumption that the dysfunctional feelings or thoughts are actually the "cause" of the problem. Similarly, clients often enter therapy with elaborate reasons, justifications, and explanations for their problems, why they believe they have their problems, and what they think should be done about them. Clients' causal explanations for their problems in living, at least in outpatient settings with highly verbal adults, often concern untoward private feelings or thoughts (e.g., I can't work *because* I'm depressed, I don't go to malls *because* I might panic, or I am anxious *because* I worry too much). One reasonable treatment goal that follows is to eliminate or reduce the dysfunctional private event or cause of the problem. If one takes what a client says literally as the cause of suffering, then this strategy makes sense. For example, attributing avoidance of flying in planes to anxiety suggests that reducing the anxiety will decrease the avoidance of planes. This type of "reasonable" explanation is largely supported by our social–verbal community.

Interest in the psychological importance of attributions has, for the most part, tried to specify what kinds of attributions, and in what combination, predict subsequent behavior and correlate with other psychological constructs such as depression and anxiety (Försterling, 1988). Much of this voluminous body of research and theory has attempted to examine the literal content of given attributions in terms of what is actually said or rated on questionnaires. Thereafter, the literal content is used to make inferences about the source of the problem psychologically and to select targets for change.

Examination of the literal content of attributions is most frequently seen in the trait construct of "attributional style" (Abramson, Seligman, & Teasdale, 1978; Cutrona, Russell, & Jones, 1985). Here, a client may be given a questionnaire to assess their causal attributions to several hypothetical events that are then categorized along several dimensions (e.g., internal/external, global/specific, stable/unstable). Most often, persons are asked to give a reason "why" an event occurred. Thereafter, the ratings are often correlated with other behavioral indices or psychological measures tapping other presumably related constructs and are then used to

predict behavior in other contexts (Metalsky & Abramson, 1981). Concerning depression, specific combinations of these theoretically based attributional dimensions have been shown to correlate with reports of depression, with other questionnaire measures of depression, and to a lesser extent with overt behavior (Brewin, 1985; Peterson & Seligman, 1984). For example, persons with depressive complaints have been shown characteristically to attribute the causes of failures to internal (something about me), stable (consistent across time), and global (occurs in many situations) factors, whereas successes are often attributed to external, unstable, and specific factors such as luck or chance.

Thus, from a cognitive perspective, the importance of attributions in the psychological sense resides in their causal or mediational role in influencing subsequent behavior. The attributions themselves, and especially the conditions that produce them, are of little interest to most cognitive theorists. Rather, attributions are interesting insofar as they support theory-driven predictions and inferences about what cognitive processes may be involved. Attributions have been treated as a given form of cognition in need of no further explanation beyond the discovery of its hypothesized structure (Weary et al., 1989).

To a behavior analyst, it seems unfortunate that attributions have been described as a cognitive process without asking other necessary questions related to the origins of attributions as a verbal process, such as "How do people learn to describe their experience in causal or relational terms?", "What circumstances give rise to reason-giving, account giving, and explanations?" and "What is the function of reason-giving in human behavior?" Interestingly, these and other related questions were once the main focus of attribution research and theory (e.g., Heider, 1958; Kelley, 1973). The present lack of interest in questions related to the origins and function of reason-giving accounts in cognitive psychology represents the most serious criticism of attributional conceptions (cf. Weary et al., 1989).

We will show that behavior analysis can inform our understanding of a complex social phenomenon such as attribution, despite claims that it cannot (Försterling, 1988). Because attributions primarily involve verbal behavior that is learned through social experience in particular verbal communities, behavior analysis offers a means for studying how, when, and why people offer causal explanations and, most importantly, the function that such explanations serve in social behavior from which they are derived. Behavior analysis takes the conditions that give rise to attributions and the relation between them as psychologically interesting, but not the literal content of the attribution itself. Such a perspective redirects our attention to the social determinants of reason-giving and explanation-seeking activities; a perspective with advantages that we will now describe.

A Behavior Analytic Interpretation of Attributions as Verbal Behavior

Clinical behavior analysts start with some basic assumptions about attributions that differ from those operating within a cognitive framework. Although behavior analytic assumptions have been detailed elsewhere (e.g., Hayes & Brownstein, 1986; Hayes & Hayes, 1992), restating them here briefly seems important because they are often misrepresented and poorly understood. We should add that these assumptions are not necessarily better or worse than those used by cognitive or cognitive–behavior theorists and therapists. Rather, they are different, in part, because they are consistent with the scientific strategy of directly manipulating independent variables and measuring the effect on dependent variables.

Basic Philosophical and Scientific Assumptions

First, clinical behavior analysts prefer to emphasize that attributions or reason-giving are verbal actions of organisms, and specifically verbal behavior describing putative relations between events. As we suggested, there is no way for attributions not to be verbal in some sense, although they are not always verbalized overtly. In one form or another most attribution research has attempted to uncover the rules that describe how people give meaning to their experience and the world around them. As Skinner (1984) also noted, "the 'reasons' which govern the behavior of rational people describe relations between the occasions on which they behave, their behavior, and its consequences" (p. 588). From a behavior analytic perspective, we provide reasons because our social–verbal community upholds giving reasons in some situations. Thus, behavior analysts prefer the verb form of attribution as an act of *attributing* that has its origins in a social–verbal community. This view can be contrasted with the cognitive use of attributional style which is often used apart from context; that is, interest has been directed toward understanding what attributional style "is" as a causal variable and not what attributing "does" as a dependent variable in relation to context.

Second, clinical behavior analysts are less likely to emphasize the content of clients' attributions, and are even less likely to be interested in the discovery of some underlying attributional style or trait. Although behavior analysts may view the literal content of attributions as predictive, they are unlikely to improve our influence over clinically relevant target behaviors. Instead, behavior analysts attempt to address the importance of attributing as a human action in terms of *what* historical and current environmental conditions lead to such behavior and *how* such conditions can be described in ways that are consistent with descriptions of how other behaviors are produced. In other words, behavior analysts prefer that explanations be of the type that permit the unified goal of prediction and control (i.e., influence) with adequate scope and precision (cf. Hayes & Brownstein, 1986). This strategy requires an analysis of the environmental determinants of behavior: "Our independent variables—the causes of behavior—are the external conditions of which behavior is a function" (Skinner, 1953, p. 35).

Placing control in the environment does not mean, however, that behavior analysis is not concerned with private events. Behavior analysis views private events as important as any other behavior to be explained, but deserving no special status solely because of its privacy (cf. Hayes & Brownstein, 1986). Yet behavior analysts do not accept public or private behaviors as a cause of other behavior, because all behavior is viewed as a function of the environment and cannot be changed directly without changing the environment (Zettle & Hayes, 1982). Thus, to a behavior analyst, attributions do *not* cause other behavior, but attributing and other environment–behavior relations are caused by environmental events. This is a strategic move, in part, because behavior analysts assume that a reliable, cumulatively building science is best constructed by studying the effects of directly measurable and manipulable independent variables on directly measurable dependent variables. In a science of behavior, these variables are to be found in the environment and in the organism's observable behavior, respectively. Thus, clinical behavior analysts view attributions not as some undefined type of event in the "mind" or as a static structure within a person, but rather as an ongoing act-in-context that requires precise description of the context.

Third, behavior analysts also make the assumption that the act of relating events can be potentiated or depotentiated depending on the context that can selectively influence those relations. As indicated, cognitivists have treated attributional style as a trait-like cognitive

schema that functions as a lens or filter through which individuals perceive the causes of events in the world and one that serves as a basis for other behavior (e.g., Abramson et al., 1978; Cutrona et al., 1985; Weary et al., 1989). Attributional style is presumed to represent some*thing* that people *have* and not what they *do* in certain contexts. This view involves a mediational view of causality, with environmental conditions causing attributions, attributions causing behavior, or behavior causing attributions. Many behavior analysts have difficulties with hypothetical and unobservable mediating elements because they are used in a circular way. For example, attribution theorists sample verbal reports of attributions, and then use the verbal report to infer some cognitive process. After that, the inferred underlying cognitive process is used to explain the verbal report and other behavior. In the process, the verbal report itself is left unexplained. Further, the very means of assessing attributions, either by questionnaire or verbal self-report, ignore the social consequences involved in giving reasons, and are therefore unsatisfactory to most behavior analysts (cf. Guerin, 1994a, for a similar argument about attitudes). Behavior analysts, on the other hand, are more likely to be interested in describing both overt and covert verbalizations, whatever their form, from a consistent set of assumptions and principles. Inasmuch as attributions are a social phenomenon that requires individuals to emit verbal behavior that specifies putative causes of events (cf. Guerin, 1994b), they are not viewed as a special form of behavior requiring a unique conceptual system. Therefore, one way that behavior analysis can inform our understanding of attributions is to understand attributing as a verbal process and to bring all the accumulated knowledge about verbal processes to bear on the interpretive analysis. It is to a discussion of this perspective that we will now turn.

Attributing as Verbal Behavior

Definition of verbal behavior. According to Chase and Danforth (1991), verbal behavior has the following features: (a) a response is emitted by someone; (b) another person (the listener) provides critical consequences; (c) the listener's behavior is conditioned to respond to the stimuli produced by the original speaker; and (d) the conditioning of the listener involves conditioning to arbitrary stimulus relations (p. 206). Thus, attributing or relating events in terms of reasons is verbal behavior involving arbitrary, social or culturally determined relations among events in the world, such as symbols, pictures, actions, or other people. For instance, attributions as verbal behavior often occur in response to "why" questions such that (a) a person asks a "why" question in response to an event; (b) another person (now the speaker) gives an answer; (c) the first person's (now the listener) verbal behavior is conditioned to respond with a reinforcer to the "right" kinds of reasons, accounts, explanations given; and, (d) the verbal stimuli that the listener responds to (the reasons given by the speaker) often involve relational classes among reasons and events. An important feature of verbal behavior, therefore, is that it requires the social mediation of others (Skinner, 1957). For instance, it is unlikely that people will give reasons or explanations to, or ask "why" questions of, inanimate objects, in part, because the question does not affect them. Thus, the principles relevant for understanding attribution from a behavior analytic perspective are the same as those related to other kinds of verbal behavior and must consider both the speaker and listener in a social–verbal context.

Attributions as tacts. Behavioral explanations of verbal behavior have concentrated on categorizing different kinds of verbal behavior functionally. The tact is one primary category that describes functions important to understanding attributions. According to Skinner (1957), a tact is verbal behavior under the joint control of generalized social contingencies and stimuli in

the environment. Typically, tacts involve verbal descriptions, names, accounts, justifications, explanations of objects or events resulting from direct experience, and these tacts are strengthened by social consequences (cf. Zettle & Hayes, 1982). For instance, learning to describe accurately and report events in the environment is taught early in development, beginning with simple examples (e.g., saying "dog" in the presence of a dog) and progress to more complex ones (e.g., "It's cold outside") that are consequated by generalized reinforcers such as "uh-huh," "right," or countless other behaviors of listeners that indicate one was understood. Similarly, tacting private events (e.g., thoughts, feelings, memories) is also taught by our verbal community.

Private events may set the occasion for a tact when verbal responses are evoked by an event or property of an event going on in one's body, such as "I have a headache." We can account for the strength of this response by showing that, in the presence of the event going on in the body and some other public accompaniment such as holding hands to one's forehead, a response of the form "I have a headache" is characteristically reinforced by the verbal community. Tact-like verbal behavior is also evident in some cultures or communities that do not reinforce the behavior of its members correctly reporting on the environment, but rather reinforce reference to abstract entities (abstract tacts) such as the presence of ghosts or spirits (e.g., "The door slammed shut because the house is haunted"). That is, the social–verbal community has a great deal of influence on what is said, when it is said, and how it is said, regardless of the accuracy of what is said.

One implication of viewing the tact functions of attributions is that it redirects our attention to the role of the social–verbal community in consequating and shaping attributions over time. Being able to specify when a particular attribution will be emitted, however, is important for our discussion of attributions in therapy and here because they are often offered in response to a particular word "Why?" and therefore appear to be under the stimulus control of other words or prompts. Such functional relations are described as intraverbals (Skinner, 1957).

From tacts to intraverbals. Intraverbals are verbal behaviors that are under discriminative control of other verbal antecedents (Skinner, 1957, p. 71), which determine the condition of their occurrence, effectiveness, and maintenance of effectiveness. With attributions, the verbal antecedent most often involves "why" questions. For example, a therapist might ask a client "Why do you feel depressed?" and the client attributes "Because I don't like myself," and the therapist provides a generalized reinforcer, usually verbal (e.g., "So you are saying that you feel depressed because you are unhappy with yourself"). The reader may notice how this interaction, and many others, would change if we leave out "why" (e.g., "Do you feel depressed?..."Yes"; or "Why are you afraid to fly"..."Because I am anxious"; "Are you afraid to fly?..."Yes"). This is accomplished, in part, because attributions are multiply controlled and maintained by both verbal and nonverbal antecedents. For example, answering the question "Why did you decide to come into therapy at this time?" is under the partial control of the intraverbal relations of answering questions and partially under the control of the physical features of the environment (e.g., "I can't go on living my life like this and therapy is a place to get help") that are part of the tact relation. In other words, when asked "Why?", we tend to give *some* kind of answer regardless of whether we have access to the information necessary for a valid answer. Consideration of multiple causation is important in any functional analysis of verbal behavior because it may help account for why a particular comment and not others is emitted in one context and how different verbalizations may occur after the same stimulus. That is, verbal behavior may be controlled by the specific environmental events, other verbal behavior, or a combination of these.

Thus, one reason that it makes little sense to a behavior analyst to accept the literal content of attributional verbalizations as equivalent to what may be occurring psychologically is that an adequate explanation of the emission of an attributional response will depend on an adequate account of the contingencies controlling its emission. That is, clients—like the rest of us—have been taught to give rationales; but those rationales do not necessarily, adequately, or exclusively tact actual causes. Rather, attributions are controlled by the verbal behavior of others and the social consequences provided by others. Thus, a reason given in one context may "mean" something else in another context, though the form or the reason in both contexts may be identical, and different reasons are likely to be given in different contexts. Yet, we still need to account for how verbal descriptions come under the control of other nonverbal or verbal events and questions that include "Why?" We will now describe how this kind of antecedent control can be accounted for in terms of conditional discrimination.

Conditional discrimination: preceding a tact with "Why?" and its affect on intraverbal relations. Conditional discrimination involves antecedents that change their function depending on the presence of other antecedents (Sidman, 1986). We can illustrate this definition of conditional discrimination with a typical "why...because" relation. For instance, "why" questions usually involve both "why" and some form of tact-like description that specifies a particular behavior or event (e.g., "*Why* are you *depressed*?"), which is then followed by a because statement with a related tact (e.g., "Because nothing is going right in my life") by the listener. Saying "You are depressed" without "why" is less likely to result in a related tact by a listener, and asking "why" alone is less likely to result in a reason. The conditional discrimination task presented to persons when a tact is preceded with "why" alters the remaining verbal interaction because of a history of generalized reinforcement from others and has at least two consequences: (a) it increases the momentary likelihood that a verbal tact response will be forthcoming, and (b) depending on the response provided, it increases the likelihood of some generalized reinforcer by the original speaker. For example, a therapist might ask a client "Why did you decide to come into therapy?" and a client might respond "Because I can't stand feeling anxious...It's messing up my life," which is followed by the therapist saying "I see, tell me more about that," or perhaps "Your problem with anxiety is not unusual and can be treated here." Specifically, some behavior or event *X* occurs that evokes a "why" question by someone (e.g., "Why did you decide to come into therapy?"). The "why" question alters the rest of the verbalization (i.e., a tact) of the client which sets the occasion for the emission of a reason by the client for the event initially tacted (e.g., "Because I'm anxious"). The critical consequence in this example is the one provided by the question-asker. Here, anxiety is a reasonable reason to come into therapy, whereas saying "My life is great" is not.

It appears, therefore, that asking why and tacting an event becomes conditional verbal stimuli that influence what is said and how it is said. This is especially relevant to therapy in that it suggests ways for a therapist to assess for the functional control exerted by a client's reason-giving for their problems. "Why" questions also allow the therapist to determine how problems may be effectively modified in therapy by the judicious use of asking certain why–tact questions and following them by specific verbal consequences depending on what is said by the client. The concept of conditional discrimination, therefore, allows for greater specification of the kinds of verbal behavior that control the emission of attributional responses.

Verbal Act of Relating Events

So far we have argued that the very act of relating events is verbal, these verbal relations can be described as reason-giving, and that reason-giving has a history of reinforcement. If we accept these propositions, then at least one question still is unanswered: what conditions account for responding with the same answer to both "why–*X*" and "why–*Y*" questions, when *X* and *Y* are different events, or responding with different answers to the same question? For example, a therapist asks, "Why are you afraid to speak in front of a group?" and the client says, "Because I'm afraid that I will get anxious and panic." The therapist then provides some kind of generalized reinforcer, such as "So, your anxiety keeps you from speaking in front of others." Later the therapist asks, "Why do you avoid going to the mall?" and the client responds, "Because I'm afraid that I will get anxious and panic." The therapist then asks, "Have you ever gotten anxious or had a panic attack at the mall?" and the client responds, "No." The question, then, is what conditioning history accounts for the transfer from those reason-giving occasions that have been reinforced to new instances that have not been directly reinforced or trained? Although this phenomenon is what the trait concept of attributional style attempts to address, we think that there is another way that is consistent with the behavior analytic concepts presented thus far.

Equivalence and transfer of function. The concept of stimulus equivalence may be helpful, in part, in accounting for the transfer described above. Although a detailed technical analysis of the processes involved is beyond the scope of the present paper, we can briefly describe how equivalence can result in classes of arbitrary (and not necessarily logical) relations between classes of events (Hayes & Hayes, 1992; Sidman, 1994). Colloquially we might describe stimuli as equivalent if someone responds to them as the same: cat is the English equivalent of the French *chat*, *chat* is the French equivalent of the Italian *gato*, and *gato* is the Italian equivalent of the English cat. Technically, however, responding to these stimuli must pass tests for three kinds of relations to be called equivalent: reflexivity, symmetry, and transitivity. Using a simplified example, we will illustrate the training involved. Reflexivity is the same as generalized identify matching. For example, given the word *anxious*, the person picks *anxious* and not *happy* or *lonely* from an array of comparisons without explicit training. Symmetry refers to the functional reversibility of a trained relation: When "given *anxious*, pick *worried*" is trained; "given *worried*, pick *anxious*" emerges in the absence of direct reinforcement. To demonstrate transitivity, at least three stimuli and two relations are required. For example, if after "given *anxious*, pick *worried*" and "given *worried*, pick *afraid*" have been taught, then "given *anxious*, pick *afraid*" emerges without additional training. Thus, training two relations directly will yield four bidirectional derived relations not explicitly taught.

Extending this to attributional phenomena, asking and answering "why" questions can bring to bear a host of arbitrary relations between events in an equivalence class that have not been directly trained but have been verbally derived because of socially mediated contingencies. For example, given the training described above, suppose we ask a person "Why are you anxious?" It is likely, that the person will respond with "because I'm worried" or "because I'm afraid" depending on the context that selects for different members of the class of relations. Of course, equivalence classes can be much larger than the one illustrated above. In fact, laboratory studies have developed classes that involve hundreds of relations among stimuli (e.g., Ellenwood & Chase, 1995).

Other relations among stimuli also can be conditioned and potentially transferred. For

example, individuals have been taught to respond to greater than, less than, and opposite from relations (Hayes, 1991), and it seems that the types of relations involved in attributing may involve plausibility, logic, continuity, correlation, coincidence, observation, coordination, and contingency. The main interest in equivalence as a useful account of verbal relational responding resides in the fact that a variety of stimulus functions (respondent eliciting, avoidance, conditional discriminitive control, punishment, and reinforcement) can transfer to other members of the class indirectly simply by establishing a given function to one member of the class (e.g., Dougher et al., 1994; Hayes, 1994). As an example, if we now associate some painful or aversive stimulus event such as a panic attack with one member of the class described above, all members of the class will likely acquire that function. Thus, asking someone "Why are you worried?" will likely produce a reason from a member of the class associated with worry and will also likely bring to bear other aversive functions associated with the panic attack. Stimulus equivalence also seems to have implications for how one may respond to events verbally derived because of social convention and may help account for how certain why–tact questions become connected to specific and predictable responses in ways not explicitly trained. Reason-giving and rules for our own behavior, and that of others, are a common example of this process.

Rules, reasons, and attributional relations. Reason-giving can be understood as a special kind of contingency-specifying relation, a rule, because reason-giving relates antecedent outcome events (Skinner, 1957). As rules, reason-giving is distinguishable from other verbalizations by the specification of two or more related events that, when followed, bring the person in contact with the relation (Chase & Danforth, 1991). In everyday social interactions, people from our verbal community provide consequences for answering "why" questions. To the extent that the stated reason or explanation fits with what the audience has experienced as part of a class, such reasons will be reinforced. For example, "Why did you quit your job?"—"Because it did not pay enough." Replying with "Because the moon was full" is not an explanation that is part of a class of stimuli involving jobs and quitting in most communities and therefore will likely be punished unless additional information is forthcoming. Learning to answer "why" questions is taught by our verbal community, beginning with our parents via modeling, instructions, and feedback. Thus, when we ask a person for a reason, there is some range of reasons that will be accepted or reinforced, and that range of "reasonable" reasons depends on one's learning history. As a history of this kind of learning develops, what emerges is a broader class of multiply caused intraverbals and tacts that take the common form of reasons, explanations, accounts, and justifications.

One consequence of this type of learning is that it tends to establish a host of arbitrary (not always logical) verbal relations together in ways both explicitly taught and derived. As indicated, learning to relate events is taught early in development with many examples. According to this analysis, however, many other relations may emerge as a function of asking and answering "why" questions. Some of these relations will involve environmental events that can be directly tacted or experienced, whereas others do not.

Often being able to formulate reasons, rules, and justifications can have immediate functional consequences when they bring us into immediate contact with the contingencies specified in the verbal relation. However, they can also have deleterious effects when they are followed when the contingencies would suggest otherwise (Zettle & Hayes, 1982). As we suggested, clients often enter therapy with elaborate reasons, justifications, and explanations concerning why they have the problems that they do. Taken literally, these verbal accounts of

clients problems in living would not be problematic if clients did not respond to them as such. In other words, saying to oneself "I feel tense" is not the same thing as saying "I feel tense and therefore cannot live a happy and successful life." Often, however, clients learn to respond to their verbal constructions of the way the world operates as if it were reality itself. Thus, from a clinical behavior analytic perspective, many clinical problems are related to ineffective verbal behavior that gets in the way of effective action. The question now is, what can be done about it?

Applied Implications of a Behavior Analytic Account of Attributing

One way that clinical behavior analysts can deal with ineffective verbal behavior in therapy is by providing a different social–verbal context in session that does not fit with the client's existing social–verbal constructions. The way this is accomplished derives from the previous analysis of verbal relations. Clinical behavior analysis has developed several exciting new behavioral therapies that explicitly address the role of verbal behavior, including attributing, in clients' problems. Many of these approaches explicitly address how the verbal interaction between therapist and client in session influences the process of change outside therapy (Hayes & Wilson, 1994; Kohlenberg & Tsai, 1991; Kohlenberg, Tsai, & Dougher, 1993). In the case of attributing or reason-giving behavior, one goal may be to loosen the function of reason-giving by changing how clients respond to the literal meaning of their attributions for their problems in session. In other words, therapy is viewed as an opportunity to establish new contingencies that do not fit with what the social–verbal community has taught us in the past.

Often clients have learned to respond to their verbal attributions as if they were accurate tacts of the causes for their problems. For example, a therapist might ask "Why are you anxious?" and the client may respond "Because I worry too much." From the client's perspective, the worry is considered a reasonable cause of the anxiety or vice versa, and this view is largely supported by our society that views thoughts and feelings as good reasons or causes for behavior (cf. Hayes, 1987). This is the context or "system" in which the client operates. This system becomes problematic when people come to view their thoughts and feelings as "reasonable" causes of their problems psychologically, and therefore act according to them. In fact, it is common for clients to explain their life problems in terms of untoward feelings or thoughts and to give these private events some causal role in their problems. One consequence of this view, however, is that many clients come into therapy assuming that in order to live a happy and successful life they must control what they have been taught are the causes of their problems, the unwanted thought or feeling.

Although cognitive theorists would confirm the client's hypotheses and largely attempt to replace the dysfunctional thought with a more functional thought, clinical behavior analysts are more likely to alter the function of the verbal behavior without necessarily changing its form. The therapeutic context, therefore, is a place where therapists can directly act upon, and be part of, the environment to potentiate or depotentiate what clients think, feel, and otherwise do. For example, Hayes and Hayes (1992) suggest a variety of direct strategies that might challenge, and thus change the function of, reason-giving. For example, a therapist might ask a client "Why?" repeatedly—client: "I can't go on living like this," therapist: "Why can't you go on living that way?", client: "I don't know, I just can't," therapist: "Why don't you know?", client: "That is what you are supposed to tell me." As Hayes and Hayes (1992) point out, after four or more "whys" the verbal structure of the "reasonableness" of the client's given reasons for their

actions begins to break down and is replaced by irritation at the "unreasonable" behavior of the therapist. In cases where attributing behavior seems to get in the way of effective action, the goal is to get the client to behave effectively in his or her environment. It is what he or she

thinks or feels, that is, to stop behaving by the "rules of reasons" and start behaving in accord with genuinely important consequences in their lives. If successful, clients may be in a better position to make direct contact with environmental contingencies that they have otherwise avoided and not for the reasons they have avoided them.

Summary and Conclusions

The central aims of this paper were to provide a behavior analytic interpretation and analysis of a popular social–cognitive phenomenon known as attribution. Whereas early attribution theories emphasized attributions as verbal behavior and attempted to address the conditions that produce reason-giving, more recent cognitive formulations have reified the construct of attribution as a trait-like cognitive structure or process, one that functions independently of context in controlling behavior. The role of social consequences in maintaining social–verbal contingencies has been overlooked in traditional social psychology and much of cognitive psychology. In contrast, behavior analysis deals explicitly with the role of social consequences in the emission and maintenance of social behavior. This emphasis is especially relevant for understanding how to intervene and change behavior of members of larger social communities, in part, because any intervention must occur at the level of the environment.