

# PUBLICATION SERIES

Office of Mental Health and Substance Abuse Services

## TO WALK IN TROUBLING SHOES: Another Way to Think About the Challenging Behavior of Children and Adolescents

By Bernie Fabry, Ph.D.

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## PUBLICATION SERIES

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TO WALK IN TROUBLING SHOES:  
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**Bernie Fabry, Ph.D.**

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## PART 1

### Different Ways of Thinking

*“Most people who knew me as a child and adolescent thought my behavior deviant, maladaptive, or pathological. By their standards they were right. By most standards they were right. But by the only standard that mattered to me then—the standard of survival—they were wrong. Given the circumstances in which I lived, most of my thinking and behavior was not only appropriate, but a necessary adaptation for self-preservation.”*

So wrote Phil Quinn (1984) about his experiences growing up in abusive families and the troublesome behaviors in which he engaged as a teenager. Acknowledging the frustration and misunderstanding with which adults probably viewed him, he also points to the necessity for adults to look beyond behavior and learn how to think differently about the purpose of troublesome behavior.

The truth is that troubled youth can behave in ways that come off as offensive and hostile. They say things that hurt. “You don’t care about me.” “You NEVER listen to me!” “I HATE you!” They use every foul word invented to describe you and what you do. They quickly identify your personal soft spot and verbally poke at it again and again and again. They engage in what seems to be unprovoked aggression. They hit, kick and bite. They engage in very disruptive behavior like loud agitated screaming and tantrums that go on for what seems like hours. They always want to argue and fight.

The frustration, confusion, and helplessness that such actions cause us can be overwhelming. The danger to a child’s well being or to others’ safety can be real. So it is natural that when confronted with such behavior, we tend to think about the troublesome behavior from our own frame of reference. When confronted with extremely troublesome behaviors, the common reaction is to think in terms of

how those behaviors *affect us*. We call troublesome behavior maladaptive, deviant, and pathological because that is what it is for us. Then we get caught up in looking for solutions in all the wrong places.

A different way to think about troublesome behavior is to put ourselves in a child or adolescent’s shoes and consider the problem from his or her frame of reference. The purpose of this paper is to elaborate on different ways of thinking about particularly troublesome behavior that can lead us to effective therapeutic interventions. *Empathic thinking, positive reframing and functional analysis* are different ways of thinking that share some commonalities and rely on inter-related assessment strategies. Their differences and similarities will be discussed to emphasize useful strategies for figuring out the most troublesome behaviors. Thinking from a functional analysis perspective is a central theme.

#### Empathic Thinking

*Empathic thinking* is the prototype for deciphering troublesome behaviors. Empathic thinking means understanding another person so well that we experience the person’s situation, thoughts and feelings. We place ourselves mentally in the child’s situation. Carl Rogers defined empathy as “accurate understanding of the client’s private world as if it were your own, but without ever losing the ‘as if’ quality . . . to sense the client’s anger, fear, or confusion without getting bound up in it” (Keef, 1976). Empathy includes suppressing our concerns about how youths’ actions affect us. It involves keeping an open mind and putting aside the prejudices, biases and judgments that come from our own experiences. When we can place ourselves mentally in a child’s

situation we are more likely to find a solution to that child’s problem, one that not only will work for that child, but also would be more acceptable to us than the original troublesome behavior.

*“You never really understand a person until you consider things from his point of view*

*. . . until you climb into his skin and walk around in it.”*

—Harper Lee, *To Kill a Mockingbird*

*“. . . until you walk a mile in his moccasins.”*

—Native American Proverb

Reconsider the troublesome behaviors presented above. What kind of problems would evoke such actions from us? How would we be feeling? When would we act in similarly troublesome ways? Why would we be acting that way?

A basic assumption of an empathic perspective on troublesome behavior is that a child is basically good and is doing the best he or she can, given his or her biological makeup, life experiences, repertoire of skills, and the context of the situation. When we see beyond the effects on us of a troublesome behavior, when we walk in a child's shoes, we see the problem from his or her frame of reference, and understand what he or she is trying to deal with. A statement like, "I hate you," or a kick in the shins may not be meant to hurt you, but may *just* be an expression of great frustration for a child. When we empathize with a child we become aware of his or her situation as if it was our own situation.

The value of empathic thinking is not to simply understand and accept some troublesome behavior. Rather, the whole purpose is to develop an understanding that will lead to an intervention that results in therapeutic change. The more common tendency is to focus on how bothersome behavior affects us, and then respond in an authoritarian, punishing fashion to get rid of the behavior. That may be acceptable with the some everyday problems of childhood. But for a very troubled child, it may not be an effective strategy. In fact, punishment more often would exacerbate the problem.

Empathic thinking is a first step in understanding troublesome behaviors. Sometimes it is a sufficient step, taking us to a therapeutic solution. For more intensely troublesome behavior, positive reframing or a functional analysis may be necessary depending on the intensity, severity or general difficulty in understanding the problem. Generally, examination of troublesome behavior can start at the level of empathy and then become more complex only as needed to solve a problem. Often the simplest account has sufficient reliability and validity, and can lead to interventions that result in therapeutic change.

Before describing positive reframing and functional analysis, a review of some common thinking traps that actually divert us from comprehending troublesome behavior may help clarify why empathic thinking,

positive reframing and functional analysis are productive ways of thinking.

### Thinking Traps

Some everyday ways of thinking about troublesome behavior actually trap us in unproductive thinking. The most common trap already mentioned is focusing on how troublesome behavior affects us, and then getting stuck in thinking about solutions that work for us rather than for troubled kids.

A second thinking trap is to focus on what people do and say from a *literal perspective*. We tend to think that when someone says he is feeling depressed and wants to hurt himself, that he is, in reality, depressed and might really hurt himself. We learn to expect a predictable correspondence between words/actions and the intent of those words/actions. A literal meaning of "I hate you" is that I am telling you that I have a strong aversion or extreme dislike of you. The intent of a hit is to hurt. We learn to expect that a person "means what he says/does."

However, when dealing with extremely troublesome behavior, a literal interpretation of a child's behavior based on our own life experiences can be off the mark. There is an old adage, "*I know you think you know what I said, but what you don't know is that what I meant is not what I said.*" The point of this adage is that a literal interpretation may not correspond with a child's intent, in part because his experiences and circumstances are unique to him and probably quite different from our own experiences.

As another example, a child who comes running to a parent asking "when will dinner be ready?" may not be asking because she actually wants dinner, but rather because she wants to know how much time she has left to play before dinner. The parent who responds to a literal interpretation with "dinner's almost ready" may be confronted with what seems like an unreasonable temper tantrum from a child who actually was hoping for more play time and does not want to stop for dinner.

With extremely troublesome behaviors, an *idiographic approach*—emphasizing the total uniqueness of each person—is necessary. The behavior of each child must be understood based on his or her unique history of learning experiences, biological

*"Things are not always what they seem."*  
—Proverb

makeup, and idiosyncratic repertoire of skills, as well as the particular context of the situation. Throughout this paper an idiographic approach to the analysis of troublesome behavior is emphasized.

### Explanatory Fictions

Another thinking trap is *circular reasoning*. For example, we might ask why a particular youth swears and acts uncooperatively when an adult makes a simple and reasonable request, and be told that the youth has a “hostile attitude toward authority.” When we then ask how we know that the youth has a hostile attitude toward authority, we are told it is because he swears and acts uncooperatively when an adult makes simple and reasonable requests. The supposed cause for the behavior is inferred from the actual behavior. Then the “cause,” in turn, is used to explain occurrences of the behavior. Often this cause is some inferred internal mental state like ‘hostile attitude.’ When the cause is really no more than just another name for the behavior, the explanation is said to be circular, and the inferred internal cause can be called an *explanatory fiction* (Michael, 1993). The essential feature of an explanatory fiction is that the cause is inferred from the same behavior that it is used to explain.

The danger with explanatory fictions is that, while it sounds like we have established the cause of a behavior, we have simply given the behavior a label that then is used as the explanation for the behavior and the focus of our attention (e. g., “we need to change the hostile attitude that’s causing his acting out”). Furthermore, the explanation may have more to do with how the behavior affects us rather than with the youth’s actual intention. A label like “hostile” suggests a pervasive spiteful intent on the part of the kid towards adults who make simple and reasonable requests. Explanatory fictions keep us walking in circles.

### From the Common to the Unique

Some people work with children who are emotionally disturbed or have behavior disorders, or who have psychiatric disorders or autistic characteristics, while others work with adolescents who are delinquents. To some extent these labels or categorizations are useful.

The labeling provides a basic framework to orient clinicians. The clinical decision-making process is simplified because some of the more common etiologies for the problems have been identified, and treatment protocols developed for each category have had therapeutic benefit for some kids.

When confronted with extremely troublesome behaviors, however, such categorical schemes may no longer be adequate, especially when the categorization is believed to be sufficient for understanding the behaviors. Consider a child diagnosed with school phobia due to refusal to go to school. A common intervention for school phobia is *in vivo* desensitization and relaxation training, which are focused on changing the phobic behaviors. However, this kind of intervention would not be very effective for a child attempting to escape from aversive social situations like merciless teasing by classmates, or for a child seeking attention from a parent. Those problems call for different treatment interventions.

Categorizing or otherwise labeling children also can lead to explanatory fictions. When we are confronted with an extremely troublesome and unusual behavior, we may begin to think that the behavior is due to the label. Repeated lying and stealing might be attributed to delinquency or pathology, rather than seen as a means of survival. Unusual aggressive acts including self-injury may be ascribed to mental retardation. Yet when professional boxers exhibit intense aggressive behavior, their behavior is seen as rational (perhaps because the context is clear). The thinking trap seems to be that when we cannot readily understand the function of unusual behavior, we readily assign the cause to a deviancy label (Sturme, 1996). Consider this perspective of a troubled adolescent in a residential treatment facility:

*“The trouble with people is not that they don’t know but that they know so much that ain’t so.”*

—Josh Billings

*“I am a resident. You reside. I am aggressive. You are assertive. I have behavior problems. You are rude. I am noncompliant. You don’t like being told what to do . . . My case manger, psychologist, R. N., occupational therapist, physical therapist, nutritionist and house staff set goals for me for the next year. You haven’t decided what you want out of life.”*

—Elaine Popovich  
Lutheran Social Services  
You and I

Standard therapeutic interventions can fail when the uniqueness of individual experiences is overlooked. Also, labels can become explanatory fictions for very unusual and troublesome behaviors when the functions of those behaviors are not readily apparent. An idiographic approach to the analysis and treatment of individual problems focuses on the uniqueness of a child's experiences and analyzes a specific child's behavior to determine the most appropriate intervention for that child.

## Positive Reframing

Empathic thinking was described as a first step in thinking about troublesome behavior. It is an idiographic approach that can be more helpful than the thinking traps described in this paper. Another constructive way of thinking is *positive reframing*. It is similar to empathic thinking in that it involves a change in perspective. It goes a step further, though, changing from a negative focus to a positive focus. Positive reframing looks beyond the topography<sup>1</sup> of behavior (e.g., an angry exclamation) and the effects of the behavior on us (e.g., emotional sting), and focuses on identifying a positive intent for the behavior (e.g., "you really need to be heard right now"). Edwards (1990) describes positive reframing as a redefinition of the problem that shifts the perspective from a negative focus to positive intention. It is switching from a problem orientation to a solution orientation. It is a focus on the purpose of behavior, the outcome a child is trying to achieve.<sup>2</sup>

Some examples that compare these different ways of thinking may clarify the distinction. A child may say to a parent, "I hate you!" A limited everyday reaction might be, "You're trying to torment me" (a focus on the effect on the adult). An empathic interpretation might be, "You seem very frustrated with me right now" (a focus on the child's negative feeling). A positive reframe might be, "It seems like you

are trying to get me to change my mind" (a focus on positive intent). As another example, a common reaction to a child slapping another person might be, "That's what people with her condition do" (an attribution to an internal cause, an explanatory fiction). An empathic reframe might be, "She seems agitated" (focus on negative emotion). A positive reframe might be, "The child is trying to escape a situation that is aversive for her."

An empathic perspective assumes that a person is basically good and is doing the best he or she can. Positive reframing takes this step and goes a step further. It presumes that a person is doing the best he or she can to achieve some outcome and, while we may not like the way a person is trying to achieve the outcome, the outcome is not undesirable, given the child's circumstances and experiences. As a case in point, everyone values social interaction. Pulling a pigtail or talking suavely are both ways for a boy to get a girl's attention. Getting attention is valued, but not by pulling pigtailed. Once we can see past the troublesome hair pulling and see the positive intent of getting attention, then we can teach more acceptable ways to gain the desired attention. Boys' suave advances usually are more successful with girls than their physical advances.

Positive reframing acknowledges our tendency to view painful events as intentionally negative, and emphasizes an alternative way to think about troublesome behavior. A positive reframe is to consider the circumstances of a troublesome behavior and think of a positive intent for the behavior. When we have identified the positive intent, we can plan our intervention efforts more effectively. We can take a constructive approach to therapy by building new skills that have the same intent, or produce the same outcome as the troublesome behavior.

*"Why don't they do what they say,  
say what [they] mean . . ."*  
—The Fixx

Positive reframing and empathy have both an assessment side as well as a therapeutic side. For example, reframing is a well-known family therapy concept and technique used to help families shift their focus. Some clinicians use empathy as a primary form of therapy. However, in this paper the assessment side of these concepts is being explored and the therapeutic side ignored because the point here is to look at ways to understand behavior.

<sup>1</sup> Topography refers to the way a behavior looks: the actions that make up the behavior, the intensity and duration of those actions, etc.

<sup>2</sup> While there are many different operational definitions for empathy, LeCompte (1999) has suggested that the concept of *true empathy* is similar to positive reframing. True empathy involves seeking a person's positive intent given his or her situation, rather than supporting the person's negative focus. Hodas (2000) similarly has formulated 'presuming the positive.'

Positive reframing as described here is a form of *hypothetical thinking*, or developing a plausible guess about a positive intent for a given child's troublesome behavior. Any guess, or hypothesis, ought to be tested and confirmed. One of the simplest methods to test a hypothesis is *active listening*.

### Active Listening

Thomas Gordon (1970) described *active listening* as using some of the skills that counselors had developed, not to counsel an individual, but to understand the intent or purpose of the individual's behavior. Active listening involves repeating back to a person your interpretation of his or her actions or words in a way that evokes either confirmation of your interpretation or further clarification. While 'active listening' can have a therapeutic effect in its own right, the emphasis here is on the value for active listening for assessment purposes.

For example, when a youngster says, "You NEVER listen to me," a limited everyday reaction might be, "I do too," followed by "No, you don't!" "Yes, I do!" "NO! You don't!" "YES! I do!" and so on. Active listening for empathy might be to invite a reaction by saying, "You sound really frustrated with me right now" (a focus on the negative emotion). Active listening for a positive reframe might be, "It sounds like you really need me to understand what you are trying to tell me" (a solution-oriented focus). From an active listening perspective watching and listening for the child's reaction is critical to getting feedback on the speaker's interpretation.

In contrast to active listening, passive listening means simply hearing the words coming out of someone's mouth. Conventional wisdom says that about 60 percent of all the problems that exist among people is the result of faulty passive listening. Active listening is different in that it involves actively questioning our view of what we heard or saw in a way that gets a child to respond with feedback on how well we understand what he or she meant. Instead of immediately reacting to a child's behavior, we ask questions for clarification. It is one method of testing our hypotheses about troublesome behavior.

Active listening has been described as putting counseling skills like clarifying, paraphrasing, restating, reflection, and summarizing to a different use. Counseling focuses on therapeutic impact while active listening focuses on assessment. We can ask open-ended, non-confrontational questions to invite a child to

tell more about a situation (e. g., "Can you tell me more about . . ." "What did you mean when you . . ."). We can restate what a child has said in our own words in a questioning manner that invites a reaction (e.g., "It sounds like you are saying . . ." "In other words, you . . ."). We can reflect on how the child feels (e. g., "You feel . . ." "You seemed pretty upset/disturbed/mad when . . ."). We also can summarize a situation to see if we can pull the situation all together (e. g., "This seems to be how you saw it . . ."). The purpose for all of these phrases is to confirm or clarify a hypothesis about troublesome behavior. The questions can focus on the problem (as with empathy) or be solution-oriented (as with positive reframing).

#### CASE 1

A kid was sent to the principal for throwing a book. The teacher felt that such acting out needed to be sternly disciplined as only the principal could do. When the principal used active listening for positive intent he discovered that the student was unable to read fluently because of a speech impediment, and had thrown the book to escape embarrassment in front of classmates.<sup>3</sup>

Even when a child cannot verbally answer questions because of a developmental disability or because the child is too emotionally distraught, we can still use active listening and watch the child's reaction. Many people can understand what is said to them even when their expressive abilities are limited. Changes in their "body language" may provide us with answers to our questions.

#### CASE 2

A young fellow made very animated gestures and vocalizations that were difficult to understand. At first the adults living with him made assumptions, like thinking that he was probably hungry and giving him something to eat. His typical reaction when they got it wrong was to initially acquiesce to their interpretation, but then act out in some way like taking the food but then throwing it at them. That, of course, was very frustrating to the adults. Initially, their reactions were to devise interventions that would effectively punish such inappropriate responses.

When the adults began using active listening, things went differently. When this young fellow gestured and vocalized, the adults thought about what he might want and asked him by both stating a question and showing him what they meant in a questioning gesture. They might then have said, "Are you hungry; do you want something to eat?" and pointed to available food items. If he didn't reach for the food or if he took

<sup>3</sup> All case examples used in this paper use masculine names and pronouns to avoid unintentional male stereotyping.

something but then threw it down, they might have guessed that he was not hungry but wanted something else. They might have asked him if he wanted a drink and showed him something to drink. If he again showed no interest but continued to gesture and vocalize, they would have assumed that they still did not understand what he wanted and tried something else. Next, they might have asked him if he wanted to go outside and taken him to the door. If he then went outside and seemed content, they might have reasonably assumed that is what he wanted.

There will be times when positive reframes for the most challenging behaviors will not be forthcoming. The purpose of an extremely unusual and troublesome behavior will not be apparent. The child may not be aware of or able to identify a positive intent when asked. Furthermore, some children may use the same troublesome behavior in different situations to achieve different outcomes. At these times more precise analytical skills are needed to come up with an effective and appropriate intervention.

## Functional Analysis

*Functional analysis* is another way to think about and analyze troublesome behavior, and has become a major force within clinical practice (Sturme, 1996). It is a strategy that can be used to discover the important and unique functional relationships for troublesome behaviors. The purpose of a functional analysis is to yield effective interventions that are highly idiosyncratic to the functional relationships discovered.

By nature of its idiographic approach—emphasizing the total uniqueness of each person—functional analysis includes the essence of empathic thinking and positive reframing. It assumes that a child is basically a rational being and is doing the best he or she can, given the circumstances and the child's learning history, repertoire of skills, and biological makeup. The goal is to discover the important functional relationships involving troublesome behaviors so that alternative but similar functional relationships involving more acceptable behaviors can be developed. This is positive reframing from a functional perspective.

At the core of a functional analysis are the concepts of *functional relationship* and *iterative hypothesis testing*. Functional relationships will be defined first, followed by a description of iterative hypothesis testing.

## Functional Relationships<sup>4</sup>

To talk about a functional relationship is to define a relationship between one variable and other predictor variables. For example, in mathematics we might say that the variable,  $x$ , is a function of the variables,  $y + z$ , meaning that the value of  $x$  varies according to changes in  $y$  and  $z$ . When  $y = 1$  and  $z = 2$ , then  $x = 3$  ( $1 + 2 = 3$ ). When  $y$  changes to, say, 4 and  $z$  changes to 5, then  $x$  changes to 9 ( $4 + 5 = 9$ ); and so on. The value of  $x$  is a function of, or varies according to, the values of the predictor variables  $y$  and  $z$ . Said another way, we can predict what  $x$  will and will not be once we know the values of  $y$  and  $z$ .

When we are concerned with troublesome behavior we are concerned with any conditions or events that can be shown to be functionally related to the behavior in a predictable way. There are many variables that are functionally related to troublesome behavior, and the relations are often subtle and complex. But we do not need to be concerned with all the possible variables, only those that are most relevant at any given moment and whose functional relationship can be tested and altered through a therapeutic intervention. In a functional relationship we are not concerned with identifying a complete and final causal relationship (as, say, a mathematical formula like  $x = y + z$  does). Rather, we are interested in only the most relevant variables that tend to occur together in a predictable relationship.

### CASE 3

Tom had recently developed a new habit of becoming upset and acting angrily toward his parents and the other kids in the family. It was discovered that Tom was most likely to get upset when he had migraine headaches, and then most likely when someone in the family either criticized him, or made an unexpected demand of him. Most of the migraines seemed to be associated with allergies that appeared when the family moved from a town in the Southwest to a city in the Mid-Atlantic region. The simplest statement of a functional relationship was, "acting angrily towards others in the family is a function of demands or criticism made when Tom is experiencing a migraine headache, followed by the demands or criticism ending." Although this plausible explanation did not account for every episode of anger, it accounted for most of the very intense episodes.

Thinking about behavior from a functional perspective means taking into account the events

<sup>4</sup> "Functional relationship" can also refer to a healthy and positive relationship between two people. However, in this paper a very different definition is used.

influencing the behavior, or said another way, the events of which it is a function. To help a child, it is first necessary to identify the variables of which behavior is a function—the predictors. Research has identified a number of important predictor variables, which will be described later. But first, the process of iterative hypothesis testing is described.

### **Iterative Hypothesis Testing**

A functional analysis depends on iterative hypothesis testing to ferret out the most relevant functional relationships. Iterative hypothesis testing is one way to avoid the kinds of thinking traps discussed previously. Also, when properly used, it helps avoid the *confirmatory bias trap*, a widely reported tendency of clinicians to only see information that confirms what they already believe.

Iterative hypothesis testing involves repeating three steps: (1) collecting information about a given behavior and the possible conditions that predict its occurrence as well as its nonoccurrence; (2) formulating a testable hypothesis or plausible guess; and (3) seeking out information that tests the believability of the hypothesis. These three steps are repeated again and again as new information is collected and taken into consideration. Hypotheses are altered, dropped and replaced in light of new information to narrow in more and more closely on the most plausible hypothesis. Case 2 (above) is an example of iterative hypothesis testing.

Working hypotheses can be formulated at any point so that predictions of when the troublesome behavior will and will not occur can be made. Testable hypotheses are formulated as summary statements that describe specific behaviors and the circumstances that predict when the behaviors are likely to occur and not to occur.

Information is collected that speaks to the predictions. To the extent that the predictions hold true or not (e.g., from Case 3: Tom is angry when he has a migraine and is criticized), the initial hypothesis is confirmed, or disconfirmed and reformulated. Even once a treatment intervention is started, the effectiveness of the intervention is then used as evidence for further refining the hypothesis. This is iterative hypothesis testing. It is a recursive process of collecting information to generate plausible explanations, and then collecting

further information to evaluate and revise the explanations, gradually narrowing down the focus to the most relevant functional relationship.

The basic way to test a hypothesis is to look for changes in the predictor variables and observe whether the behavior in question occurs or does not occur as predicted by the hypothesis. At the simplest level it is an “on-off” effect. The occurrence of the predictor variables should ‘switch on’ the target behavior (metaphorically speaking), while the target behavior should remain “switched off” when the predictor variables are absent.

#### CASE 4

Dave was placed in an institution when he was 12 years old. While living in the institution he frequently talked and wrote about suicide and, as a result, was believed to be extremely suicidal. He lived there for four years until a community-based residential program agreed to accept the challenges he presented.

At first the staff at the community-based site responded to his suicide threats literally—as if he would act as he talked. They talked with him about why he was so upset and why he wanted to hurt himself. However, they also were learning to think differently about troublesome behavior.

As the staff were around Dave more and saw him in different situations, they began thinking about the suicide threats from a functional perspective. Since the staff lived with Dave in a residential setting, they were able to observe what was happening throughout his day. When he would begin to talk about suicide, or when he would write a suicide note, they no longer talked to him about suicide or about feeling bad about himself. Rather, they looked at the circumstances surrounding the suicide talk and asked him questions about what had been happening just prior to talking about suicide. They looked at their reactions to discover which ones resulted in Dave ending his suicide talk at any given time. They discovered that when Dave encountered problem situations that he didn't know how to solve, he would talk or write about suicide. The problem situations “switched on” suicide talk. Often the suicide threats led to the staff inadvertently making the problem go away. When the staff “switched off” the problem, suicide talk “switched off.”

The staff discovered that Dave didn't know how to problem solve in a constructive fashion and suicide talk was a very effective way for him to make problems go away. So the staff began coaching him on how to identify his problems, choose effective solutions, and act on those solutions. They also watched to see what happened to his suicide threats. For the most part the threats appeared to occur less and less often as Dave became more skilled at problem solving.

## PART 2

### Learning Theory

To understand troublesome behavior, it is important to have a model for selecting the factors that predict the occurrence of behavior. One of the most useful models is *learning theory*. The purpose here is not to advocate for learning theory as “the best” model of behavior. However, learning theory is a model built on a functional analysis of behavior and provides an effective way to analyze the conditions that influence troublesome behavior.

Learning theory is very complex and will not be covered in any kind of comprehensive manner. The goal is to provide an overview with sufficient detail to allow the reader to better understand functional analysis as a way of thinking, and to begin to conduct functional analyses based on learning theory principles. References for further study (e.g., Michael, 1993) are listed at the end of this paper.

From a learning theory perspective, the analysis of conditions that predict behavior starts with three fundamental components: a clear description of the behavior itself, an analysis of relevant *antecedent conditions* (situations, events and conditions that precede the behavior), and an analysis of relevant *consequences* (situations and events that immediately follow the behavior). This is described by the three-term unit of analysis: *antecedent* → *behavior* → *consequence*.

To state it another way, behavior is a function of antecedent conditions (the context in which the behavior occurs) and consequent events (outcomes produced by the behavior). So when a child says, “You never listen to me,” a functional reframe might be, “When in the context of a specific adult requesting completion of a task chosen by the adult, the kid says ‘you never listen to me’ which produces the outcome of the adult dropping the request.”

If we were to consider this same behavior from a literal perspective, the topography of the child’s behavior suggests an accusation of insensitivity (never listening). From the adult’s perspective, it may feel like the child is trying to torment the adult. And if the child is enrolled in a program for delinquents, the adult may

reason that the child torments the adult because he is a delinquent. An empathic reframe might be that the child is frustrated by the situation for some reason (a focus on the negative emotion). A positive reframe might suggest that the child is pleading for the parent to understand what the child needs at the moment (a focus on the outcome the child is trying to achieve). From a learning theory perspective, the child may be attempting to escape from an aversive situation created by the adult’s demands.

To understand learning theory requires an understanding of antecedents and consequences. Briefly put, consequences are defined as those events that immediately follow the occurrence of a behavior, and influence the future occurrence of the behavior. There are two common types of consequences. Consequences that increase the likelihood that a behavior will occur again in the future are defined as *reinforcers*, while consequences that decrease the likelihood that a behavior will occur again in the future are defined as *punishers*. The most common reinforcers are getting something positive following the occurrence of a behavior, or having something negative go away following the occurrence of a behavior. A punisher can involve receiving something aversive or having something taken away that the child likes. The definitions of reinforcers and punishers are totally dependent on the impact they have on the future behavior of an individual. Something can be called a reinforcer for a specific person if and only if the behavior it follows increases in the future. Likewise, something can only be defined as a punisher for a specific person if the behavior it follows occurs less often in the future.<sup>5</sup> This is an idiographic approach—emphasizing the total uniqueness of each person.

Since each of us has unique learning experiences, the same consequences likely function in different ways

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<sup>5</sup> The concept of punishment is introduced here because it is relevant to figuring out why behaviors are occurring. However, there is an extensive body of literature on the dangers of using punishment or other aversive procedures to change behavior. Readers are advised to seek the consultation of someone who is very well versed in positive behavioral support before considering aversive procedures.

for different people. What is a reinforcer for one person may have no effect on another person and may actually punish yet another person. Furthermore, that same consequence also may function in different ways for the same person depending on the context. A consequence may be a reinforcer in one context and a punisher in another. This is why one person’s experiences are of little help in discovering why another person engages in extremely troublesome behavior. It is idiographic, and for that reason, it is necessary to “walk a mile in another’s moccasins.”

The following common experience of many parents and their teenagers provides an example of a consequence functioning in different ways depending on the context. For many teenagers, interactions with parents are reinforcing in the context of family activities, but decidedly not in the context of, say, an evening out with friends. Most teenagers do not like their parents hanging around with them when they are hanging with their friends.

Antecedents can be defined as those events and conditions that precede a given behavior and set the occasion for a behavior → consequence relationship. As a simple example, we typically answer the telephone only when it rings. The ringing is an antecedent event that sets the occasion for the special relationship of the response—answering the phone—being reinforced by a consequence like a conversation with a friend.

While there are many complex arrangements of antecedents, two broad and basic classes—*discriminative events* and *setting events*—have been found useful for analyzing troublesome behavior. Discriminative events occur just before the behavior of concern and are directly related to its occurrence. They are events that “trigger” a particular behavior → consequence relationship. For example, a ringing phone is the discriminative cue for answering the phone while a ringing doorbell is the discriminative cue for answering the door, and a buzzing pager is the discriminative cue for searching for a phone to dial. Some triggering events are physical, like bells going off. However, most triggering events relevant to problem behavior tend to be social events, like someone’s presence, or something someone else says or does.

Setting events are the general circumstances, conditions or context that surround a discriminative event, and “set the stage.” For example, consider the simple discriminative event—an adult walking into a room. This sets the occasion for a response—a smile and

“Hi, how’s it going” from a teenager, followed by the consequence for the teenager of a pleasant conversation with the adult. This simple description of a functional relationship can be modified by a setting event such as the presence or absence of a buddy in the room. If the buddy almost always laughs at the teenager’s “witty disrespectful remarks” to adults, resulting in the teenager’s disrespectful comments occurring more frequently in the presence of the buddy, then we could say that the teenager is reinforced for disrespectful comments to adults when the buddy is present. So, in the presence of the setting event (buddy in the room), the discriminative event (adult walking into the room) sets the occasion for disrespectful comments. When the teenager makes a witty disrespectful comment to the adult, the consequence would be the buddy laughing. So when the buddy is around, the teenager is much more likely to make a disrespectful comment to the adult as compared to when the buddy is not around. The presence of the buddy is a setting event, altering the discriminative function of the adult’s presence from triggering respectful social exchanges when the buddy is absent, to triggering disrespectful comments when the buddy is present.

Setting events, discriminative events, behavior, and consequences are fundamental components in learning theory. Their interactions can be complex and subtle. It is beyond the scope of this paper to fully explore the complexity of human behavior in functional relationships. However, a basic understanding is necessary to thinking about troublesome behavior from a functional perspective.

#### CASE 5

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Dan attended a special school for kids with emotional disorders. He was a big fellow. Dan periodically would act out when doing seatwork in his classroom. The acting out included destroying his worksheets or pencils, throwing materials, threatening other students, getting out of his seat and walking around in a kind of threatening manner.

When Dan’s incidents first started to become a problem, the teacher could not predict when such incidents would occur. However, it was her general habit to write short documentation notes about each of these incidents as well as other unusual incidents occurring in her classroom. To start a functional analysis, the teacher’s supervisor reviewed the notes and noticed that Dan tended to have outbursts when a student teacher was in the classroom and usually not at other times. In a conversation with the student teacher, the supervisor discovered that the student teacher typically responded to Dan’s outbursts by calling him to her desk and spending a few minutes with him going over his seatwork. At first it looked as if the student teacher’s reaction to Dan’s outbursts might be reinforcing the outbursts. The supervisor’s hypothesis was, “in

the presence of the discriminative cue of difficult seatwork, Dan’s acting out is reinforced by the student teacher’s assistance with his work.”

When this seemingly plausible explanation was suggested to the teacher and student teacher, they were able to describe many occasions that did not fit with the hypothesis. They recalled times when Dan would ask for help with seatwork without having an outburst. In fact, asking for help when he didn’t understand academic work seemed to be one of his strengths.

Upon further review of all of the different notes written by the classroom teacher, the supervisor discovered that the outbursts almost always happened when the student teacher was in the classroom, *and* when another very aggressive student was also acting out and the classroom teacher was occupied with that student. The supervisor, teacher, and

student teacher hypothesized, “when the other student acted out (a setting event), the presence of the student teacher was a discriminative cue for Dan’s acting out, resulting in the student teacher calling Dan to her desk thereby taking him out of harm’s way from the other threatening student (the consequence).”

The team then decided to teach Dan to tell someone when he was concerned about his safety in the classroom as a substitute for acting out. When Dan learned this skill, his outbursts significantly decreased. Further discussion with the staff from Dan’s residential program suggested that some of Dan’s outbursts in the community could be accounted for through a similar functional formulation of the problem.

## PART 3

### Discovering Functional Relationships

Learning theory provides a model for describing functional relationships, and reveals “maladaptive” behavior as an entirely rational function of the antecedent and consequent events operating at the moment. Discovering such functional relationships for troublesome behavior requires investigative strategies. There are several available. For one, the research literature can be reviewed. There also are checklists, questionnaires, and guides that have been developed to structure the investigative process. In addition, clinical skills like active listening, naturalistic observation and function probes can be used to understand the most troublesome and idiosyncratic behaviors.

Sometimes we form a quick opinion about the purpose of a behavior. This may be based on *clinical acumen*—hypothesizing based on other clinical experiences we have had with problems that looked similar. At other times a hypothesis may come from specific experiences we have had with the person in question. By being with the person and observing the person’s behavior in different situations, we eventually form an opinion that the intent of some actions may be different from what we might have expected based on our own experiences. What is important here is that hypotheses are based on some source of information, even when the source is not apparent. What follows are descriptions of more systematic ways to collect information useful in developing functional hypotheses.

#### Looking to the Common

One strategy for forming hypotheses is to rely on classes or categories of behaviors studied in the research literature. For example, Scotti, Evans, Meyer, and Walker (1991) conducted an extensive analysis of research reports from 18 major journals on behavior analytic methods with people with severe psychiatric disorders. The authors identified five classes of behavior that had been studied: self-injurious behavior, stereotypic behavior, physical aggression/tantrum behavior, destructive/disruptive behavior, and

inappropriate social behavior. The value of this kind of literature review is that it can (1) highlight some of the more common classes of target behaviors; (2) highlight some of the more common antecedents and consequences; and (3) highlight some of the more common functions of the particular problem under consideration. However, as Scotti, Evans, Meyer and Walker point out, it would be ill-advised to simply use the interventions of choice for each class of problem behavior without first developing some understanding of actual functional relationships for a specific case. Otherwise, given the idiosyncratic nature of functional relationships, there is a good likelihood that the wrong intervention would be implemented. And the clinician would be left wondering why the intervention of choice for a given class of behavior did not work.

#### Clinical Guides

Durand and Crimmins (1988), Weisler, Janson, Chamberlain and Thompson (1985), and Kearney and Silverman (1990) have developed checklists for some of the more common functions of troublesome behavior. For example, the Motivation Assessment Scale (Durand & Crimmins, 1988) is a 16-item checklist that was originally designed to ferret out the functions of self-injury, but has been used with a wider variety of problems. The 16 items describe different situations and functions for self-injurious behavior that discriminate among four possible functions: escape from aversive situations, seeking attention (social interaction), seeking tangible items, and sensory feedback. Usually, people who have spent a lot of time with a child and have been able to observe him or her in lots of different situations complete the checklist. The value of such checklists is that they help to quickly focus further investigation in the most productive direction.

*“It is a capital mistake to theorize before one has data. Insensibly one begins to twist the facts to suit theories, instead of theories to suit facts.”*

—Sherlock Holmes speaking  
(Arthur Conan Doyle)

A guided interview with informants also can facilitate generating hypotheses. O’Neill, Horner, Albin, Storey and Sprague (1996), and Knoster and Llewellyn (1997) have published useful and practical handbooks that provide descriptions of functional assessment

procedures, sample forms, and examples of completed functional assessments. The O’Neill et al. handbook describes an interview process that includes questions designed to identify the context in which a challenging behavior occurs. The questions guide informants through:

- a careful definition of the behavior of concern;
- potential ecological events that may affect the behavior (e.g., medications, medical complications, sleep cycles, diet, daily schedule, predictability of activities and events, variety and nature of personal activities, presence of other people, outcomes of actions);
- events and situations that seem to predict occurrences of the behavior (e.g., time of day, location, with whom, during what activity);
- what happens for the person when the behavior occurs (possible outcomes of the behavior);
- how efficient the behavior is;
- the primary methods used by the person to communicate;
- the events, actions, objects thought to be positive for the person;
- what "functionally equivalent alternative" behaviors are known by the person; and
- the history of the undesired behavior and strategies that have been attempted.

Other commercially available questionnaires and checklists also can be used to structure the collection of relevant information. A few sources for more information about techniques, strategies, and tools for assessing behavior are presented in the reference section of this paper. Since there are many resources available, the list offered here is simply a sampling. An experienced behavior analyst can be a valuable resource for effective use of these tools. Multiple sources and methods tend to be used when initially looking for plausible hypotheses because a single source of information generally does not produce sufficiently comprehensive and accurate information.

Often a more idiographic approach will be necessary to discover the functional relationships for the most troublesome behavior. Active listening and naturalistic

observation are two useful *detective strategies* that lend themselves to discovering very idiosyncratic functional relationships.

### Active Listening for Functional Relationships

In essence, the kind of active listening described earlier is an iterative hypothesis-testing strategy. Open-ended questioning, paraphrasing and summarizing provide a recursive strategy that increasingly focuses on, clarifies, and narrows in on plausible hypotheses (Fabry, 1996).

The goal of active listening for functional relationships is to use active listening skills to ferret out the most relevant behavior and important antecedent and consequent conditions. Active listening occurs with informants— people who know a child and his or her troublesome behaviors very well. Active listening for functional relationships involves asking informants and youths to recall their observations about the contexts in which a target behavior typically occurs and does not occur. For example, an interviewer may ask for detailed descriptions of the troublesome behavior. To determine the context, questions focus on *who* (which people are present when the troublesome behavior occurs versus when it does not occur), *where* (in what settings or situations did the behavior occur and not occur), *when* (what time of day, what days of the week), and *what* (what happens just before the behavior occurs and what happens just after). The purpose of the questions is to evoke descriptions of variables that correlate with the occurrence and nonoccurrence of the troublesome behavior.

Learning theory concepts form the basis for the questioning. For example, active listening for empathy might be, “tell me how you felt,” while active listening for positive reframing might be, “tell me what you were trying to accomplish.” Active listening for functional relationships might start with questions designed to evoke relevant information that can be used to formulate a hypothesis. For example: “Tell me more about his fighting. What did he actually do to ‘fight’? Tell me who else was involved in the fighting. Where did the fight occur? What happened just before the fight? What might have happened even earlier in the day or the day before that could have affected his mood or his motivation to fight? What happened after the

*“Naturally, we are all interested in facts. If when they are obtained they make the present theory untenable, the behaviorist will give it up cheerfully.”*

—Watson, 1930

*“Leave no stone unturned.”*

—Proverb

fight? Who did what after the fight?” As information suggests possible hypotheses, questioning would begin to look more like active listening: “So, do you think he only fights when his buddies are around and are encouraging him?”

It is helpful to ask informants to support their opinions with actual descriptions of observations that are as detailed as an actor’s script for a play. Sometimes one informant will describe circumstances surrounding a target behavior, which will spark another informant to offer conflicting evidence that leads to considering alternative variables. For example, an interviewer may meet with teachers who share a troublesome student. One teacher may describe many examples of the student acting out only with that teacher and not with others (“he only does it to me”). Teachers who may have had the opportunity to observe the student in other situations not available to the first teacher may have examples that suggest that the student tended to act out during the latter part of school days regardless of which teacher was present. It was simply coincidental that the first teacher only saw the student at that time of day.

Active listening also can be used with the child causing problems, but it may be a bit more challenging. The child may be defensive, and have limited observation or communication skills.

The goal of active listening is to ask the child to think about the conditions that are present when a target behavior occurs, and absent when the target behavior usually does not occur. Both antecedent and consequent conditions need to be considered. For example, an interviewer may ask, “Tell me what leads up to fights and what happens afterwards. Are you more likely to fight when another kid looks at you or when your friends challenge you to fight someone?” The focus of the questions is not about feelings (do you get really angry before a fight?), or about intent (are you trying to show others that you will stand up for yourself?), but about relevant conditions that surround the occurrence of the troublesome behavior.

In keeping with an active listening strategy, the interviewer would pose additional questions to narrow in on a plausible hypothesis based on learning theory concepts<sup>6</sup>. For example, if the child in the preceding example said that he was most likely to fight when his

friends challenged him to fight someone, the interviewer might ask the child to describe actual examples of such incidents. Then to check on the interviewer’s evolving hypothesis, he might ask the student if he can recall times when he would fight because another student “bothered” him and his friends challenged him to fight, and if he can recall times when he would fight anyone his friends challenged him to fight even when the other person was not “bothering” him.

Reed, Thomas, Jeffrey, Sprague and Horner (1997) described a guided interviewing strategy that gives more structure to an interview with a kid. Using the Guided Functional Assessment Interview, students were prompted to:

- describe the behaviors that get them into trouble;
- review a schedule of their week and indicate when and where the problem behaviors were likely to occur and at what intensity;
- describe discriminative events for their behavior;
- describe important setting events associated with their behavior (e.g., lack of sleep, illness, etc.); and
- identify what happened when they engaged in the problem behaviors.

Active listening for functional relationships relies on the informants’ recollections of past events. Sometimes an experienced interviewer can help informants sift through their anecdotes and ferret out a plausible hypothesis that can lead to an effective intervention. At other times incomplete or biased recollections may need to be complimented with more direct observation in naturalistic settings to identify subtle functional relationships.

### **Naturalistic Observation for Functional Relationships**

Naturalistic observation is the search for functional relationships by systematic direct observation of what a person does in situations that would be pivotal to the hypothesis.

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#### CASE 6

Joe was a young man who banged his head and grabbed onto others’ hair. The people around him paid careful attention to what happened in contrasting situations. They observed that Joe banged his head when strangers were in the room, but not when people with whom he was very familiar were in the room with him. They also observed that if anyone—stranger or friend—came close to him rather suddenly and without warning, he would bang his head or reach out quickly and lock

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<sup>6</sup> For readers who feel uncomfortable with learning theory, the hypothesis formulation and testing suggested here should still benefit clinical practice.

onto the other’s hair. On the other hand, if people familiar to Joe approached him gradually, then he did not bang or grab.

These consistent correlations between who was present and how Joe was approached, and his head banging were observed in many settings in and around his home, his school, and his community, and at different times of the day and the year. From these observations, people developed a working hypothesis about Joe’s head banging and hair pulling: head banging and hair pulling served as ways to escape from or avoid sudden social encounters and social encounters with strangers.

The goal of naturalistic observation is to compare and analyze the observations, looking for any patterns associated with occurrence and nonoccurrence of the target behavior.

Sometimes it is helpful to organize anecdotal information or direct observations into antecedent → behavior → consequence columns like this (the contents were taken from the preceding example):

ANTECEDENT CONDITION	BEHAVIOR	CONSEQUENT CONDITION
Stranger approached	Banged head	Stranger quickly left
Foster dad approached unexpectedly	Grabbed at foster dad’s hair	Foster dad backed up a bit

At other times a matrix or scatter plot can reveal patterns. A typical plot (shown below) would list one set of conditions as a series of rows and another set of conditions a series of columns. A mark in a box would signify the occurrence of a target behavior when the intersecting horizontal and vertical conditions were present. Boxes with no marks would indicate conditions under which the target behavior did not occur. For example, a scatter plot for one of the examples above—the teacher who thought the student only acted out with her (page 12)—might look like the table below when the teachers used a scatter plot to record actual occurrences of acting out.

The slash marks indicate observations of actual instances of acting out. The value of a scatter plot is that it graphically shows patterns of occurrence and

nonoccurrence of a target behavior in relation to relevant antecedent and consequent conditions. Based on the scatter plot we could hypothesize that acting out correlated with some feature of late afternoons. Further observations would be necessary to determine what those features might be. Some possibilities include the student becoming increasingly bored, frustrated or overly taxed as the day wore on, and/or specific activities or social interactions that only occurred in the afternoon.

	Teacher A	Teacher B	Teacher C
Early Morning			
Late Morning			
Early Afternoon		/	/
Late Afternoon	////		//

Historically, behavior specialists recommended that data be collected on the overall frequency of occurrence of a target behavior so that changes occurring over time could be seen. Teachers and parents might have been asked to report how many times a target behavior occurred each day. When engaging in a functional analysis, *differentiated frequencies* provide more useful information. The scatter plot above shows differentiated frequencies. The slash marks indicate how often the behavior occurred for each combination of conditions. As can be seen, all occurrences were in the afternoon. Teacher A was present for more of the occurrences than the other teachers. This information is more useful for a functional analysis than just knowing that overall there were nine occurrences during one week.

Bambara and Knoster (1995; 1998) developed a five-step planning process to design effective behavioral support plans. They provide a conceptual framework along with forms and checklists to facilitate the identification of relevant hypotheses. They describe strategies for conducting antecedent → behavior → consequence analyses as well as scatter plot analyses. Their forms can be used to organize information obtained from active listening for functional relationships as well as from naturalistic observations.

## Hypothesis Formulation

The foregoing assessment strategies provide information from which a plausible explanation or hypothesis about a functional relationship can be formed. A testable hypothesis of a functional relationship is typically expressed as a summary statement describing the relationship in the form of: antecedent → behavior → consequence. The general form is “In the presence of [antecedent conditions], the youth engages in [target behavior], followed by [consequent conditions].” Hypotheses from some of the brief cases presented in this paper include:

- Case 4: in the presence of an interpersonal problem, Dave writes about or talks about committing suicide, which is followed by adults resolving the interpersonal problem.
- Case 5: in the presence of the setting event—another child engaging in aggressive acts, and the discriminative event—a sympathetic adult, Dan acts out, followed by the adult standing next to Dan.
- Case 6: in the presence of a stranger, Joe bangs his head, followed by the stranger moving out of Joe’s sight.
- Case 6: in the presence of a familiar person quickly appearing or moving close, Joe bangs his head, followed by the other person moving further away from Joe.

Each of these statements describes a functional relationship in a way that readily leads to predictions of when the problematic behavior would occur and would not occur. Each statement is free of judgment, bias or prejudice about the behavior and the antecedent and consequent events. There is no causal interpretation, nor necessarily the intent of a complete description. Furthermore, each is testable to the extent that the behaviors and events all can vary independently of each other, and any co-variation could then be thought to support the hypothesis. There may be other important relationships that are not expressed, but the statements are as simple as possible to predict the future occurrence and nonoccurrence of the behaviors to a socially significant degree. If the hypotheses lead to interventions

that work, then from a clinical perspective, enough has been done.

## Hypothesis Confirmation<sup>7</sup>

Active listening and naturalistic observation do not directly confirm or validate a hypothesis. For example, there may be subtle aspects of a situation that observers miss because they were focused on identifying situations that confirmed a strongly held suspicion about a functional relationship (confirmatory bias trap).

Going the further step of confirming or verifying a hypothesis becomes necessary when (1) treatment strategies based on the hypothesis do not result in change, (2) there are conflicting plausible hypotheses, (3) a hypothesis seems to account for only a portion of the occurrence of a behavior and further testing may reveal other contributing events.

The confirmation of a hypothesis requires “turning the switch off and on” and observing whether the behavior turns off and on in sync with the switch. Turning the switch off and on consists of manipulating the antecedent and consequent conditions and observing the occurrence and nonoccurrence of the behavior.

Evans and Meyer (1985) described *function probes* as a way to “turn the switch off and on” and thereby test hypotheses about functional relationships. For example, using the Durand and Crimmins’ Motivation Assessment Scale described earlier, we might conclude that a child’s outbursts when receiving one-to-one instruction are escape motivated. Upon further investigation, we might discover that there are three plausible escape conditions: (1) the child finds the activity too demanding and is

*“The fact that your patient gets well does not prove that your diagnosis was correct.”*  
—Samuel J. Meltzer

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<sup>7</sup> The initial process of collecting historical information about troublesome behavior, generating hypotheses about functional relationships and then looking about for new situations that confirm or disconfirm the hypotheses often is referred to as *functional behavioral assessment*. The term *functional analysis* usually includes functional behavioral assessment and goes a step further, manipulating the predictor variables while other possible variables are held constant, and observing whether the behavior in question occurs and does not occur as predicted. The observations either confirm a hypothesis or provide information to revise the hypothesis. *Behavioral assessment* generally refers to measuring behavior without regard to functional relationships. *Applied behavior analysis* refers to the study of socially important behaviors and functional relationships.

attempting to escape the activity; (2) the child dislikes the adult providing the instruction and is attempting to escape from the adult’s presence; or (3) the child finds the task too boring and is trying to escape from the boredom. Each of these hypotheses is a plausible refinement of a simple escape function for the outbursts.

To test each, we could try turning off and on different “switches” to see which switch turned the behavior off and on. We could (1) alternate the demand level by presenting easy and difficult tasks, (2) alternate the adults providing instruction, or (3) alternate novel tasks with boring tasks. If the child was most likely to have outbursts when the demand level of tasks was made difficult, then we could reasonably conclude that the first hypothesis had been confirmed. On the other hand, if outbursts occurred only when a certain adult provided instruction regardless of the difficulty of the task or whether it was boring, then we could conclude that the adult was aversive. Lastly, if the outbursts only occurred when the same boring task was presented repeatedly and not when novel tasks were presented, then a reasonable conclusion would be that the child had outbursts when tasks became boring.

A common outcome is that we would probably discover that more than one of the hypotheses proved possible. As noted previously, it is likely that a troublesome behavior serves more than one function for a given child.

#### CASE 7

When asked to complete chores, Mike would throw his toys and swear at his foster parents using very vulgar statements. Generally he was very sullen and would not answer when asked why he was upset. The typical routine was that when Mike came home from school there was a set of chores that he needed to complete.

The foster parents began testing a series of hypotheses for these “tantrums.” They started with the assumption that he did not like the parent who was making the requests (troublesome behavior often feels like an attack on the caretaker and it is easy to assume that the intent of the behavior is to get the caretaker to back off). To test the hypothesis, “in the presence of one specific parent presenting a request, Mike engages in tantrums followed by the parent dropping the request,” the parents took turns asking Mike to do his chores. Mike demonstrated that he was just as likely to swear at either parent and invalidated the initial hypothesis.

The parents then speculated that the chores were either too difficult, took too much time, or there were too many, and Mike’s response was a way to escape one or more of these aversive conditions. They tested each of these possibilities by alternating their requests to do one chore versus many chores, and by alternating easy chores with difficult or time-consuming

chores. They discovered that Mike was capable of completing his chores whether they were presented one at a time or as a group of tasks to be completed. They were neither too difficult nor took too much time.

The foster parents next speculated that Mike didn’t like to be disrupted from a play activity with a parental request. To test this hypothesis, the parents created a list of chores and required Mike to choose when to complete them each day. They alternated this arrangement with their own requests to do chores. They discovered that there were many fewer outbursts when Mike chose when to complete the assigned chores versus being told when. They learned that they needed to teach him to negotiate what was being requested of him (a functionally equivalent behavior) rather than throw toys and swear.

Malatesta (1990) described an unusually convincing example of a functional analysis. The case study involved a nine-year-old boy with multiple problems. The major problem for referral was an eye tic. Other problems included academic difficulties despite an IQ well above average, depression, distractibility, low risk-taking, fear, anxiety in novel situations, poor peer relations, and a poor father-son relationship. Initial outpatient office interviews of family members plus psychometric assessments helped the therapist narrow in on a plausible explanation. The therapist suspected that the boy was engaging in hyper-vigilance for criticism evoked most readily by the boy’s father who was severely critical of the boy’s behavior generally and his achievement in particular. The therapist stated his working hypothesis as: “all seven problems were formulated as manifestations of hypersensitivity to criticism . . . related to the boy’s relationship with an insecure, demanding and critical father . . . [The] hypersensitivity to his father’s criticism . . . then generalized to other evaluative situations.”

On the basis of this working hypothesis the therapist made five predictions:

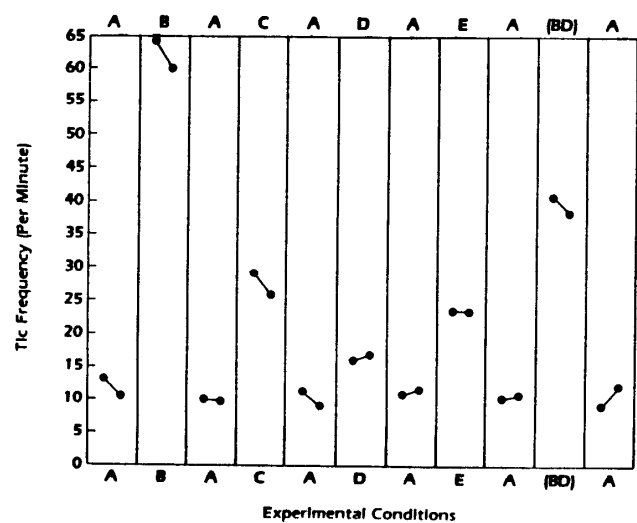
- the rate of eye tics would be highest when the boy was exposed to an evaluative model;
- the rate of tics would be highest in the presence of the father compared to other evaluative people;
- the rate of tics would be higher with the male therapist than the mother;
- the presence of the mother would be associated with the lowest rate of tics; and
- the presence of the father and the mother together would produce an intermediate rate of tics.

To test these predictions the therapist arranged function probes in his office. This involved counting the rate of tics in the presence of various combinations of adults while the boy was working on puzzles. The function probes consisted of comparing the tic rate when the boy was alone (A), versus when his father was present (B), versus when the therapist was present (C), versus when the mother was present (D), versus when a stranger was present (E), and then when the mother and father were present together (BD). These separate probes were each presented twice in a random order, and separated each time by the boy alone condition (A). This allowed for a simple “turning off and on” of the predictor variables hypothesized by the therapist.

The results are shown in the figure.<sup>8</sup> The average number of tics per minute is plotted against who was present with the boy. The highest rate of tics was observed when the father was present (B) while the lowest rate occurred when the boy was alone (A). The rate of tics was higher with the therapist (C) than with the mother (D). When all of the adults are compared, the rate of tics was lowest when just the mother was present (D). Finally, the presence of the mother and father together resulted in an intermediate rate of tics. As the figure graphically illustrates, the behavior—eye tics—turned off and on as the therapist manipulated the presence of the various adults. The “off and on” occurred at the level the therapist had predicted for each adult. Thus, all five inter-related hypotheses were confirmed.

On the basis of these confirmed hypotheses the therapist then developed the following treatment strategy. In order to decrease the stimulus value of the father from an evaluative to a non-evaluative model, and to provide modeling experiences for the boy, a series of tasks was developed for the father and son to carry out. The tasks were designed so that the father deliberately made errors and coped with the outcome, such as knocking over a can of paint. Also, a series of joint activities between the father and son was planned which were pleasurable and non-evaluative, like going to a baseball game.

Three weeks later the boy’s eye tics had completely disappeared. These gains were maintained 18 months later when Malatesta checked on the family.



### Ethical considerations

When attempting to confirm a hypothesis there are ethical considerations that need to be reviewed. The strategies chosen to test a hypothesis must not put a child or others at risk for harm, or inadvertently strengthen a challenging behavior. Conducting function probes to confirm a hypothesis may not be advisable because the probes may put people at risk and/or may actually increase the likelihood that a dangerous behavior would continue. Whether or not function probes or other hypothesis confirming strategies can be used will depend on a consideration of both practical and ethical concerns. The reader is advised to seek the consultation of a behavior analysis specialist who is very well versed in positive behavioral support. It needs to be pointed out here that most of the cases presented in this paper involved experienced behavior analysts.

<sup>8</sup> Malatesta, V. J. (1990). Behavioral case formulation: An experimental assessment study of transient tic disorder. *Journal of Psychopathy and Behavioral Assessment*, 3, p. 226, Figure 2. Reprinted by permission from Plenum Publishing Corporation.

## PART 4

### Complex Functional Relationships

Sometimes a single hypothesis does not seem to account for or predict all occurrences of a behavior. An observation such as this does not disprove a hypothesis, but suggests that the behavior in question more likely is involved in other functional relationships as well. This is particularly the case for very troublesome behaviors like aggression. Children and adolescents learn that under any number of unpleasant conditions aggressive acts can result in those conditions going away. They also learn that aggressive acts can produce attention on demand from others.

#### CASE 7 (CONTINUED)

Mike's foster parents (the same ones from Case 7) discovered that one function of Mike's tantrums was to escape or delay disruption in his play. However, since the tantrums continued to occur occasionally in other contexts, the parents continued to look for other functional relationships. They discovered that Mike would sometimes engage in a tantrum as he came in the door from school.

Upon further observation, the parents discovered that older boys on the school bus were teasing Mike off and on, especially when they found out that he had a bad day at school. This was a negative experience for Mike (making a bad day worse), and through naturalistic observation the parents discovered he would throw a tantrum at home once he was out of harm's way from the taunting older boys. His "angry in the door tantrums" only occurred when he was teased on the bus. A functionally equivalent response for Mike was learning to describe negative experiences to adults who could advise him on new ways to act when negative experiences (e.g., teasing) occurred.

Here is another example of one behavior serving very different functions depending on who is present. A teenager may state, "I drink," in the presence of peers to obtain their approval. In the presence of a respected adult, the same response may be part of a class of responses called "trying to act adult." In the office of a counselor, "I drink" may correctly be restated as, "You're worried you're becoming an alcoholic."

Anything that may have limited a child's skill development, such as impoverished learning environments, cognitive disabilities, or stressful environments, can result in a few troublesome behaviors

serving multiple functions. This is often the experience of people with developmental disabilities.

Functional analysis is a way of thinking that can be applied to a variety of variables some of which are not ecological variables. Biological events have been studied and demonstrated to be influential (Horner and Carr, 1997; Gardner, 1996).

Transient biological and medical conditions like an illness or a body pain can influence behavior. When we are sick, little things that normally wouldn't bother us may become extremely aversive. Conditions like a headache, allergies, lack of sleep, or hunger can function as setting events. The case presented above of Tom (Case 3) who experienced migraine headaches is an example of this kind of analysis. Mental health disorders like fluctuating mood disorders also can be analyzed as setting events in a functional relationship (Gardner, 1996).

Psychotropic medications also function as setting events. For example, a child with a mood disorder who is not on medication may experience periods of depression resulting from changes in brain chemistry. The depressive episodes may function as setting events. Tolerance for external stimulation decreases such that more events take on an aversive quality. Psychotropic medications can alter this relationship. Given the appropriate medication, the child may no longer experience depressive episodes, or at least not to the same extent. Fewer events would be aversive as compared with a non-medicated state.

Jawed, Krishnan, Prasher, and Corbett (1993) described a case of problematic pica—eating non-food items—in a young person with severe mental retardation. Other problems included difficulties of mood and irritability, appetite changes, sleep disturbance, and other problem behaviors including self-injury. Following a hypothesis of biologically based depression, a psychotropic medication known to alter the brain chemistry associated with depression was prescribed. Pica and the other troublesome behaviors then became minimal problems. Subsequent withdrawal of drug treatment resulted in the pica and other troublesome behaviors returning to their former

problematic levels. When the medication was reinstated, the problems were again minimized. In effect, the authors turned the medication on and off and observed that the pica turned on and off in sync with the medication. The psychotropic medication was demonstrated to function as a setting event.

More permanent mental disabilities also can be thought of as setting events. For example, a child’s mental disability may make tasks that seem simple to us very demanding for that child. The value of including these permanent disabilities in an analysis of behavior is that they can be taken into consideration in designing treatment interventions. While there are no known disabilities that actually cause any particular behavior, they may limit the range of behaviors available to a child or influence the child’s learning style.

Functional analysis of troublesome behavior often involves searching for many different functional relationships involving the same troublesome behavior. Any one functional relationship may account for only a portion of the problem. The challenge is figuring out whether accounting for only a portion of a problem disproves a working hypothesis, or reveals that other important functional relationships are involved and need to be discovered.

## Systems thinking

Systems thinking involves considering the interrelatedness of each part of a system. Systems thinking involves (1) stepping back and analyzing how different components of a system may interact in the “big picture” while (2) analyzing the individual components. It is seeing the forest and the trees at the same time (as compared to “*not seeing the forest for the trees*”). It is taking an idiographic approach to the whole while at the same time taking an idiographic approach to the parts.

Children do not exist as isolated beings, but are participants in systems, or groups. They are members of families, members of peer groups, members of school classes that include teachers as well as classmates, and members of various neighborhood groups. Each of these groups can be thought of as a system in which the actions of one participant affect the actions of the other participants, which in turn affect the first participant.

When a child is part of another person’s ecology, what the child does influences what the other person

does either as an antecedent event or as a consequent event, and the other person’s reaction influences what the child does, again either as an antecedent event or as a consequent event for that child. The child and person’s actions are interdependent. In families, in peer groups, and in schools, members of the group influence as well as react to each other in interdependent functional relationships. While analyzing interdependent functional relationships may seem complex, the basic methods of analysis described here still apply.

When trying to develop effective interventions for troublesome behavior, it may be necessary to analyze not only the functional relationships of a child’s behavior, but also the interdependent functional relationships of relevant others. An example described earlier included a teenager who was reinforced for disrespectful comments to adults by a buddy who laughed at the comments. A functional analysis from a systems perspective would go beyond an analysis of just the antecedents and consequences for the teenager, and would take into consideration the antecedents and consequences for the adult as well as the buddy. Why does the buddy laugh at the disrespectful comments? What is the functional relationship for the buddy’s laughing? Does the teenager smile at his buddy and “high five” him when he laughs such that the two teenagers are reinforcing each other? What is the adult’s reaction to the disrespectful comments? Does the adult make no noticeable reaction, or does the adult try to turn it into a joke and thereby inadvertently reinforce the teenager’s disrespectful comments? Or does the adult threaten some punitive event if the teenager continues to make such comments, but seldom carries through? Any or all of these possibilities could interact in a functional manner to maintain the problematic actions of all three players—the teenager, the adult, and the buddy.

*“There is always an easy solution to every human problem—neat, plausible, and wrong.”*

—H. L. Mencken

After several years of studying families with aggressive adolescents, Patterson (1982) identified some common interaction patterns that he and his colleagues called the “coercion process.” After reading descriptions of the families studied, one wonders why the family members would stay together given the frequency and intensity of negative interactions among the members. The coercion process describes interdependent functional relationships that make the situations understandable.

Patterson described coercion as the use of one or more aversive behaviors by a family member in response

to the behavior of another person in the family. He described interaction patterns in which one person’s aversive actions were followed by another person’s more intense aversive actions, which resulted in the first person temporarily avoiding further interaction. This was generally an inconsistent pattern vacillating between who was actually the last and most aversive person in a particular sequence of exchanges between family members. The end result was that the family members were modeling for each other increasingly aversive interaction styles, and intermittently reinforcing those interaction styles by stopping their own aversive actions.

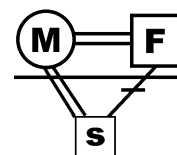
For example, a father might approach his son and start an interaction with a scolding for leaving a bedroom light on. The son responds by screaming at his father that everyone leaves lights on and for the father to “get off my back.” Thus, the son screams excuses at his father (coercion), and his father immediately ceases the scolding (he “just doesn’t feel like dealing with it this time”), and walks away, escaping further aversive conflict with his son. The son does not have to comply with the father’s dictate (turn his light off) and has learned that he can escape scolding by screaming at his father. The next day, the father sees the light on again, becomes more upset, and screams at his son until the son acquiesces and turns the light off. This time the father has modeled more intense aversiveness for the son, and has escaped the son’s screaming by screaming more intensely himself. As the days pass, similar exchanges occur with the father and son trading places winning and losing. In this fashion the family members train each other in aversive interaction skills.

The importance of this analysis is the impact it has on treatment design. For the preceding example, just teaching the son to engage in more respectful interactions by complying with adult requests and not screaming excuses probably would not be successful for the son since the father could be expected to continue with the established pattern of responding to his son. Effective intervention would require interventions targeted at all of the family members to break the cycle of coercive interactions.

Malatesta (1990) described interdependent relationships that appeared to contribute to the development and maintenance of the nine-year-old boy’s tics describe above. The father appeared to be highly critical of his son’s performance and defensive when this

was pointed out to him. The father seemed to seek out recognition for his talents, particularly when family problems were being discussed. The mother appeared to support her husband’s defensiveness while at the same time was positive and supportive of her son’s performance.

*Mapping* is a technique used by some family therapists to describe the predominant relationships existing among family members that contribute to maintaining troublesome behavior. Using the mapping technique, Malatesta’s clients’ interaction patterns might be portrayed as follows:



The double lines represent frequent positive interactions between the mother (M) and the father (F), and between the mother and son (S). The single line from father to son includes a hash mark to indicate the less frequent but negative, conflictual interactions between the father and son. The line separating the parents from the son indicates the separated roles of parents versus dependent child. Further elaboration of this mapping technique can be found in Edwards (1990) and elsewhere. The value of the map is to provide the big picture of predominant functional relationships in this family. Malatesta describes how this information was taken into consideration in developing the intervention for this family.

Had Malatesta focused only on the child, treatment might have consisted of desensitization to evaluative situations and training in coping skills. In fact, the boy had already experienced these kinds of individual therapy as well as trials on medications to no benefit. A previous therapist’s attempts to change the father’s tendency to critically evaluate his son also had not helped, perhaps because the other interactions among the family members were not taken into consideration.

Malatesta recommended involving the father in treatment as a ‘co-therapist’ who would model making mistakes and coping with the mistakes in an adaptive manner, and who would increase positive father-son activities that were nonevaluative (e.g., going to a

*“There are two sides to every story.”*  
*“It takes two to tango*  
—Unknown

baseball game). These interventions were chosen based on a broader view of the interactions among the family members. For example, while the mother would not cooperate with an intervention that focused on directly reducing the father’s critical interactions with his son, she was able to encourage the co-therapist activities suggested by the therapist. In addition, the co-therapist role played to the father’s strengths and was not critical of his evaluative approach but was somewhat incompatible with being evaluative.

This case study illustrates the value of expanding a functional analysis from focusing on just the target child, to focusing on the interrelated functional relationships within a system. It is a progression from analyzing the troublesome walk of one, to analyzing a troublesome dance.

### Summary

The purpose of this paper has been to describe a different way of thinking about extremely troublesome behavior. A limited everyday reaction to problems is to

become focused on the effects of troublesome behavior on us. This results in thinking traps that do not help us identify effective interventions. One traditional assessment strategy has been to focus on the topography of behavior and categorize problems by the way they look. While this may work more generally and as a first step toward organizing information, it is insufficient for extremely troublesome idiosyncratic behavior. The different ways of thinking presented here—empathy, positive reframing and functional analysis—are interrelated. They share a common assumption that an individual is doing the best he or she can, given a unique learning history, a unique biological makeup, and the specific context of a problem.

*“The truth is out there.”*  
—X-Files

Investigation strategies have been developed to assist in the process of discovering the sometimes-complex functional relationships for extremely troublesome behavior. Two fundamental tools, active listening and naturalistic observation, are critical skills for walking in troublesome shoes or unraveling troublesome dances. The goal of all of these techniques is to develop an understanding that leads to effective interventions.

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