

Mastering the Art of Chain Analysis in Dialectical Behavior Therapy

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Behavioral chain analyses, which are common in behavioral and cognitive-behavioral treatments more broadly, are the primary assessment tool in Dialectical Behavior Therapy (DBT). As such, they are conducted in nearly every DBT session. Despite their importance in the treatment, very little has been written about the “how-tos” of chain analyses in DBT or how to improve therapist skill in this area. This article describes the rationale and proposed functions of chain analyses, provides details about the various components of the chain analysis, and includes common problems that arise in conducting chain analyses. A case example of a detailed chain analysis is provided.

Dialectical Behavior Therapy (DBT) is well-established as an evidence-based treatment for borderline personality disorder (BPD; see Rizvi, Steffel, & Carson-Wong, 2013, for a review). In more recent years, DBT's efficacy has been evaluated across a variety of psychological disorders (e.g., eating disorders, substance use disorders, treatment-resistant depression) and populations (e.g., adolescents engaging in suicidal behavior, individuals in forensic settings, patients on inpatient units). At its core, DBT is a behavioral therapy that emphasizes a skills deficit approach to assessment and problem solving (Linehan, 1993a, 1993b). That is, the development and maintenance of problematic behavior are thought to result from a lack of capabilities in various areas. In order to effectively solve problems, one must first understand the factors that contribute to the occurrence of the behavior and then learn new skills/behaviors that serve to either (a) replace the behavior or (b) disrupt the typical sequence of events early enough such that the behavior is unlikely to recur. Therefore, a thorough assessment of the problem behavior must first be conducted in order to identify key points at which a different intervention might have been useful (i.e., led to a different, more effective outcome). Behavioral assessment is critical to all behavioral and cognitive-behavioral interventions and is widely used in clinical practice. In DBT, the method for conducting such

an assessment is called the behavioral chain analysis (hereafter referred to as “chain analysis” or “chain”).

In this paper, we describe the use and practice of chain analyses in DBT specifically; however, we note that the principles described herein are drawn from a long tradition of behavioral and cognitive-behavioral theory and techniques. The basic tenets of chain analysis have their origins in the work of the early behaviorists (i.e., Watson, Skinner, Pavlov), who so elegantly studied and articulated the principles of operant and classical conditioning (for a review, see Baum, 2004). The concept of the *functional* analysis can be traced to the work of B. F. Skinner (1957), who sought to understand how behavior is maintained through environmental contingencies (e.g., rewards, punishers). The principles of the functional analysis now appear in several approaches to psychotherapy, including applied behavior analysis, behavioral activation, functional analytic psychotherapy, and cognitive behavior therapy. Thus, while we discuss the application of behavioral analysis in the context of DBT specifically, we do not mean to convey that the concept of chain analysis is limited to DBT; as a corollary, we believe that many of the elements we describe here can be applied to similar analyses conducted within non-DBT behavioral frameworks.

Some researchers have proposed that chain analyses may be a critically important ingredient of change in DBT (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006). These authors suggest that having a client and therapist engage in the process of conducting a detailed chain analysis following an instance of a problematic, targeted behavior may serve four important clinical functions. First, describing the sequence of events leading up to and following a problem behavior involves sharing intimate

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details of one's emotional states and private thoughts that are often quite painful to describe. In fact, many clients experience similar emotions in session when describing a past event as they did when they engaged in the behavior (Bridges, 2006; Holmes & Mathews, 2010; Lang, Levin, Miller, & Kozak, 1983). In addition, they often experience additional shame and guilt for having engaged in a target behavior that they now must discuss with their therapist. In this way, chain analyses function as a form of informal exposure therapy in that they require clients to experience and tolerate negative affect without engaging in dysfunctional coping strategies.

Second, reviewing the sequence of events surrounding a target behavior may improve the episodic aspect of autobiographical memory (see Conway, 2009). That is, a client may not see patterns in her thoughts, emotions, and behaviors without reviewing the relationships between these elements post-hoc (and with the help of a therapist). Moreover, the therapist may play an important role in such a review by helping the client think through all relevant variables along the chain, rather than just the few that "seemed" important to the client at the time. Or, the therapist may help the client recall aspects of the experience to which the client did not attend initially, such as physiological responses that accompanied an emotional reaction. As noted by Williams, Conway, and Cohen (2008), developing autobiographical memory for specific events serves a directive function that allows a person to engage in improved problem solving for present and future situations. Hence, chain analyses may help disrupt a future target behavior by allowing the client to more clearly recognize problematic patterns as they are unfolding, recall how similar patterns have previously resulted in ineffective behaviors (e.g., self-injury), and alter the course of the current behavioral pattern such that the outcome is something other than the targeted problem behavior. For example, if a client typically binge drinks after difficult days at work in which she fights with her boss, then she needs to learn to encode arguments with her boss as a common link on the chain to target behaviors. Thus, subsequent arguments with her boss should cue the patient to be wary of the potential for dysfunctional coping. Hopefully, she can then mobilize resources to engage in more adaptive coping that she has planned with her therapist (see section titled Solution Analyses below).

Third, a chain analysis provides the opportunity for in-session learning of new skillful behavior. As the therapist conducts the chain, she weaves in many standard DBT techniques (Linehan, 1993a), thereby helping the client increase skillful behavior in the moment. For example, the therapist may help the client notice signs of anxiety that are readily apparent to the therapist (e.g., shallow breathing), and point out the shift in affect to the client.

The therapist can then help the client modulate her affect in session, thereby teaching skillful behaviors that are presumed to generalize to the client's life outside of therapy. Finally, for many clients, the process of discussing in detail a problematic behavior is often aversive. As such, chain analyses may function as a natural consequence in DBT treatment. Thus, the client may work to avoid such punishment by not engaging in the problematic behavior in the future.

For all of these reasons, chain analyses play a critically important role in the therapy. Little, however, has been written about how to conduct chain analyses in therapy. The aim of the current paper is to orient clinicians to the functions and basic elements of chain analyses and to provide therapists with the necessary tools to begin using chains or to refine their ability to maximize their use of chains in therapy. We begin with an overview of how to implement chains in individual therapy sessions.

Chain Analyses in Individual DBT Therapy

Individual DBT sessions are organized based on a target hierarchy (Linehan, 1993a). In standard DBT, the therapist addresses issues in a particular order, guided by the following hierarchy: (a) decrease life-threatening behaviors (e.g., suicide, self-harm, homicidal urges); (b) decrease therapy-interfering behaviors, i.e., any behaviors that potentially disrupt the therapeutic relationship, such as lateness, noncompliance, or lying; (c) decrease quality-of-life interfering behaviors (e.g., moderate to severe Axis I disorders, psychosocial factors and life stressors, health-related issues); and (d) increase behavioral skills (e.g., emotion regulation, interpersonal effectiveness, distress tolerance, mindfulness). The rationale for this hierarchy is that issues that are likely to result in termination or a significant disruption of treatment—by death, hospitalization, or burnout by either party—must be the highest priority in treatment. In sessions for which no life-threatening or therapy-interfering behavior occurred, the therapist and client collaboratively organize the session according to which quality-of-life issues are most distressing, intrusive, or recurrent (see Ritschel, Miller, & Taylor, *in press*, for a case example of session structuring).

For clients in the early stages of DBT treatment, chain analyses figure prominently; in fact, nearly every individual therapy session will feature a chain on a recent and specific instance of the highest priority target behavior that occurred that week. Thus, a therapist might conduct a chain analysis on high target behaviors, such as an episode of cutting or a suicide attempt. Alternatively, a therapist may conduct a chain on a therapy-interfering behavior, such as a client arriving 20 minutes late for session, missing a skills group, or becoming verbally aggressive with the therapist. Quality-of-life interfering behaviors also merit chains, such as an episode of drug or alcohol use, a serious fight with a

partner, or a significant increase in depression-related behaviors. Additionally, a therapist may conduct a chain analysis on a problematic in-session behavior that must be addressed in order for therapy to be effective, such as in-session dissociation or intense shame that leads the client to shut down and stop communicating.¹

Linehan (1993a) describes the chain analysis as “the in-depth analysis of one particular instance or set of instances of a problem or a targeted behavior... [It] is a self-conscious and focused attempt on the part of the therapist (and, one hopes, the patient) to determine the factors leading up to, following, and ‘controlling’ or influencing the behavior” (p. 255). She further specifies three conditions that are critical to the effective implementation of a chain analysis: (1) chains are conducted collaboratively between the therapist and client; (2) the analysis provides a complete picture of the sequence of events, including both internal and external cues and triggers; and (3) any conclusions drawn from the analysis are considered hypotheses to be tested, which can be discarded if disproven by new or additional information. This last point is consistent with the overarching philosophy of DBT, which places greater emphasis on hypothesis testing than on therapist insistence of a particular cause of a behavior. These details about chain analyses and when they are used are shared with the client as part of the orientation to treatment. Given the prominent role it plays in treatment and the need for active collaboration from the client, it is important that clients are oriented to chain analyses early in therapy.

The chain analysis is often taught in visual form, as both therapists and clients alike can generally understand the sequential aspect of the chain when presented this way (see Figure 1 for an example). Having a visual image of links in a chain also serves to remind both client and therapist that sequential events are all connected and that events do not occur at random, despite what clients often think. The chain has five important components that provide the framework for the assessment: vulnerability factors, prompting events, links on the chain, problem behaviors, and consequences. In the section that follows, we will describe each of these components in detail and use a clinical example to illustrate.

Elements of the Chain Analyses

To elucidate the components of the chain analysis, we will use the sample patient “Beth,” who is an adult client in DBT. She meets criteria for BPD, depression, and current alcohol abuse. She does not engage in suicidal or

self-injurious behavior and is generally compliant with treatment and treatment procedures. Based on the case formulation her therapist developed (see Koerner, 2007, for a discussion of how to construct a case formulation for DBT clients), the highest priority for Beth’s treatment is reducing her binge drinking episodes, which occur approximately twice per month and often lead to negative consequences like problems at work (e.g., getting written up for showing up late, missing work due to hangover symptoms), relationship ruptures, and potential legal and risk-management issues (e.g., driving while intoxicated, getting into fights with other patrons at bars).

A chain analysis usually begins early in the session, after the therapist has reviewed the client’s diary card and they have collaboratively determined that an event has occurred for which a chain is warranted. Before beginning the chain, the therapist orients the client to the function of the exercise. For very new clients, the therapist discusses the purpose and procedure used in conducting a chain; later in treatment, the therapist may simply note that the first agenda item for the session will be a chain analysis of the problem behavior.

Although there is no hard and fast rule for the order in which the components of the chain should be assessed, most clinicians find it useful and relevant to start with the problem behavior (PB). Understanding the full details of the PB is necessary to set the foundation for the rest of the analysis and to ensure that both the therapist and the client have a complete grasp of the current problem. In terms of assessing the PB, the therapist obtains information about the topography of the behavior; that is, the therapist seeks to understand all aspects of that specific iteration of the behavior, including the intensity, duration, and frequency of the PB. For the purposes of conducting a chain analysis, it is not sufficient to know that Beth drank on one occasion in the past week. Instead, the therapist would want to know where Beth was when she drank (at a bar? at a friend’s house? at home?), who she was with, what specifically she drank (beer? liquor? wine?), how much she drank, and over what period of time this all occurred. Thus, a more complete description of Beth’s problem behavior might be as follows: she and her best friend went to a local bar approximately 5 miles away from Beth’s house, and, over a period of 2 hours, she consumed three shots of vodka and approximately five beers.

Once the problem behavior has been identified and clearly defined, the other components of the chain can be investigated. Again, there is no predetermined order that dictates which component should be investigated next; moreover, a clinician may even choose to move fluidly back and forth between components if needed. We will review the other components as they occur temporally, although we do not intend this as a mandated strategy.

¹ Chain analyses also may be conducted in group skills training sessions for problems such as homework incompleteness or chronic lateness. In the current paper, however, we focus on chain analyses as they occur in individual therapy sessions.

Vulnerability factors: _____

Date: _____

Note: B = behavior, E = emotion, T = thought

Prompting event: _____

B/E/T: _____

B/E/T: _____

B/E/T: _____

B/E/T: _____

Problem Behavior: _____

Consequence 1: _____

Consequence 2: _____

Potential solutions or skills to use?

Figure 1. Example of visual representation and worksheet for DBT Chain Analysis.

There is often confusion about what constitutes the prompting event (also referred to as “precipitating event” or “antecedent event”). Linehan (1993a) states that the idea here is “to link the patient’s behavior to environmental events, especially ones that she may not realize are having an effect on her behavior” (p. 259). We expand this notion and think of the prompting event as something that occurs either in the external environment or internally (such as a memory or flashback), such that if this event did not occur, the PB likely would not have occurred. In other words, the prompting event is an important controlling variable, though not necessarily the only one. For example, Beth might state that 3 hours before she engaged in her drinking episode, her best friend texted her and asked her to meet up at a particular bar. Prior to getting this text, Beth reports that she had no plans to drink that evening. In this case, the therapist might identify getting the text from the best friend as the prompting event for Beth’s binge drinking episode.

Often, though, it may be difficult to identify the prompting event, in the sense that the client may identify a number of events that appear relevant to the problem behavior. For example, prior to getting the text from her friend, Beth also reports that she got in a fight with her boyfriend, left her house quite angry, and was then stopped by a police officer and given a speeding ticket. On further analyses, she reports that her first thoughts about drinking occurred during the fight with her boyfriend and increased in intensity after getting the speeding ticket; however, she notes that she had no immediate plans to drink until she got the text message. In such a

case, the therapist may have difficulty deciding what constitutes the specific prompting event. There may be no “right answer” to the question “what is the prompting event?”; moreover, pinpointing the one single prompting event that led to the problem behavior might better be classified as an academic exercise rather than a clinically useful tool. In this case, therapists are encouraged to be flexible in their approach and to remember the overall purpose of the analysis, which is to identify the variables leading up to and following a problem behavior, to generate hypotheses about why this particular behavior occurred, and to generate solutions such that the behavior pattern does not continue. Identifying an important sequence of events, like the one just described, will be more important than forcing one particular occurrence to be the prompting event.

Vulnerability factors are another component of the chain analysis. Vulnerability factors refer to elements of the person, her environment, or life circumstances that leave one more open to the deleterious effects of intrapersonal and environmental stressors (i.e., prompting events). Common vulnerability factors include heightened emotionality (e.g., from ongoing stress at work or from a recent interpersonal stressor), fatigue or lack of sleep, physical pain, not taking medications as prescribed, and not eating properly. In some cases, remediating chronic vulnerability factors will solve most of the client’s problems. In other cases, identifying and modifying vulnerability factors will help fortify the client by building up her ability to withstand stressors and to respond to prompting events with resilience and effective behavior.

When evaluating vulnerability factors, the therapist should first assess whether the prompting event is *always* associated with the problem behavior or whether the link between the prompt and the problem behavior is impacted by other factors. If the relationship between the prompt and the PB is inconsistent, the therapist should assess the factors that made the client more vulnerable to that prompting event on that particular day. Using our previous example, the therapist would want to know if Beth ever received text messages from her best friend inviting her to the bar in which Beth declined the offer. If Beth *never* turns down an invitation to go to a bar, then the therapist will know that Beth's response to that particular prompting event needs to change. If Beth has successfully turned down such invitations from her friend in the past, the therapist would want to know which factors impact these differential responses. Assuming that Beth is committed to abstinence from drinking, it is likely that vulnerability factors impacted her ability to be resilient to the prompt from her friend; that is, if she was on steady emotional and physiological ground when the text arrived, she may have been more likely to decline the invitation.

One mistake that therapists often make is to consider long-term, unchangeable factors as vulnerability factors. For example, for a client who self-injures after the prompting event of losing his job, the clinician might identify having BPD and a significant trauma history as important vulnerability factors. While it may be true that some individuals with BPD and trauma are more sensitive to loss and rejection, for the purpose of the chain analysis the therapist should focus on more proximal factors that increase vulnerability. If an individual has BPD or significant emotion dysregulation, the clinician and client might note in the case formulation that the client typically has heightened emotional responses to stressors in general when compared to a non-BPD individual; nevertheless, the client's own vulnerability will still vary day to day, or even moment to moment. In this way, the therapist can validate both the distal vulnerability that can be accounted for by the presence of BPD as well as the proximal vulnerability elicited by poor sleep and a recent change in antidepressant medication.

The fourth component of the chain analysis is generically referred to as "links on the chain." Links comprise the sequential external and internal events that occur between the prompting event and the PB. Links include the individual's thoughts, emotions, and behaviors as well as environmental factors and the behaviors and actions of other people. For example, between getting the text from her best friend and drinking at the bar 3 hours later, Beth reported having the thought, "I probably should not meet her tonight," which led to increased feelings of sadness, which then led to another

thought: "why should I suffer when others can go out and have fun?" She then reported about an hour of vacillating between whether she should stay home or meet her friend at the bar. During this hour, she started having urges to drink, including both cognitive urges ("I'd really like a drink") and physiological cravings for a drink. Eventually, she thought, "Oh screw it, what's the harm of one drink," after which she felt relief from the negative state of sadness and cravings. She then spent an hour getting ready to go out, which she described as pleasant and energizing.

The links in the chain might span several hours, as in Beth's case, or less than a minute, as is often the case with highly impulsive behaviors. Regardless of the duration of time between the prompting event and the PB, the therapist's job is to generate as accurate a picture as possible regarding the important thoughts, emotions, and actions of the client that led to the problem behavior, no matter how fleeting. Particularly with highly impulsive behaviors, this process can also help generate insight, as many impulsive clients make statements such as the following: "I don't know what happened, all of a sudden I was just really upset and I cut myself." Obtaining a micro-analytic picture of what occurs in that minute of time can be quite illuminating. Questions to ask might include: "What went through your mind at that exact instance?"; "What do you think would have happened if you did not have immediate access to [the razor, the drink, the person at whom you yelled, etc.]?"; and "What were you feeling in your body?" With such impulsive behaviors, the therapist is working to elongate the amount of time between the prompting event and the problem behavior such that there is a greater chance that skillful behavior could occur in the future.

The final component in the analysis is the assessment of consequences to the problem behavior. Consequences comprise any specific events, thoughts, and emotions that occur after the PB. In this part of the analysis, the therapist seeks to identify factors that might influence the recurrence of the behavior or that might be helpful in preventing future occurrences, including positive and negative reinforcers and punishers.² Briefly, a reinforcer is any consequence that increases the likelihood of the behavior occurring again in the future and a punisher is any consequence that decreases the likelihood of the behavior occurring again. In clinical practice, it is often difficult to determine if a consequence is a "true" reinforcer or punisher as it is usually impossible to separate its effects from the myriad of other factors in a client's life.

² A review of learning theory is outside the scope of this article, yet it is imperative for a DBT clinician to be well-versed in behavioral principles. There are many resources available for learning; we recommend Kazdin (2001) and Pryor (2006).

The assessment of consequences in a chain analysis should focus more heavily on proximal rather than distal factors, as evidence suggests that reinforcers are most powerful when they occur close in time to the behavior (see [Kazdin, 2001](#)). The clinician should inquire about both positive and negative consequences and should be careful not to make assumptions about which consequences occurred without careful assessment. Further, the therapist should inquire about both internal and external or environmental consequences. That is, it is important to find out how the client felt immediately after engaging in the PB and also how others in the environment may have reacted to the problem behavior. All of this information contributes to the therapist's hypotheses about which consequences are potential reinforcers of dysfunctional behavior (and thus should be removed) and which consequences are potential punishers of dysfunctional behavior (and thus should remain or perhaps be strengthened).

In terms of consequences for Beth's drinking behavior, she reported that as soon as she tasted her first beer, she had an intense sensation of pleasure (a possible positive reinforcer), accompanied by strong urges to continue drinking. In evaluating consequences, the therapist asked Beth what she noticed about her cravings for alcohol once she had begun drinking; Beth then noticed that she also was no longer battling these cravings because they were being satisfied (a possible negative reinforcer). As she drank more beers and began consuming shots, she reported that she no longer remembered ordering more drinks but that "one was always in [her] hand." She stated that during the first 2 hours of drinking, she felt "high," happy, and more social (possible positive reinforcers); after a couple of hours, however, she started to feel unpleasant sensations of dizziness and unreality (possible punishers). She decided that it was time to go home and managed to make it to her car, though she was unable to recall specific details about what time it was, whether she tried to get another ride home, or whether she had any thoughts that she might be in danger. She stated that she drove home by herself, passed out on her couch, and woke up 4 hours later feeling nauseous and with a headache. She also reported feelings of shame and guilt when she awoke because she had broken her commitment to her therapist and herself to not drink.

The five different components described here comprise the chain analysis. The length of time that it takes to complete a full analysis will vary depending on many factors, including length of time between prompting event and problem behavior (with longer lag times generally leading to more links to examine in the chain), client's level of verbal aptitude, and client or therapist tendency to get "off track" by discussing other topics during the chain. Although there are no explicit

rules regarding timing, the general principles in conducting chains are: (a) be thorough; (b) leave adequate time in the session to devote to a solution analysis (see below); and (c) elicit a commitment from the client to not engage in the problem behavior again. Given that the point of chain analyses is to obtain an understanding of controlling variables of problematic behavior in order to intervene most effectively, it is possible that some chains are quite brief. In the case of severe or complex problem behaviors, however, there may be times when a thorough chain analysis might span several sessions. A complete chain analysis is a powerful tool for understanding the whats, hows, and whys of a client's problem behaviors. Of course, understanding the behavior is but half the battle: the other half is the solution analysis, during which the therapist (a) helps the client identify various points at which she might have chosen a more effective behavior or strategy that might have precluded the problem behavior, and (b) works with the client to increase the likelihood that a more effective behavior occurs the next time a similar prompting event occurs.

Solution Analyses

Like chain analyses in general, there is no right or wrong way to conduct solution analyses from a temporal perspective. That is, solution analyses may be conducted subsequent to the completion of the chain, or solutions may be offered as the chain is being developed. The essential point of the solution analysis is that it is insufficient for a client to understand her problem behaviors without also understanding what she could have done differently. Although clients in later stages of DBT might have learned to generate the necessary insight to see where a more effective behavior might have been implemented, clients who are early in therapy may need considerably more help and guidance in generating successful solutions.

Consistent with [Gross and Thompson \(2007\)](#) process model of emotion regulation, possible solutions for problem behaviors generally fall into one of two categories: antecedent- or response-focused strategies. Antecedent-focused strategies are used to remediate difficulties and decisions that occur before the problem behavior; antecedent-focused solutions that are available to the DBT therapist include teaching or strengthening basic DBT skills, problem solving, stimulus control, exposure-based techniques, and cognitive modification. Basic DBT skills are pulled from the four modules taught in the group component of DBT, including mindfulness, interpersonal effectiveness, distress tolerance, and emotion regulation skills ([Linehan, 1993b](#)). Response-focused strategies are used to reduce the reinforcing aspects of the problem behavior and to highlight the detrimental consequences that occur in the presence of the problem behavior. Response-focused solutions used by DBT therapists generally fall under the heading of contingency

management. Although a thorough discussion of all possible DBT strategies that can be used during solution analyses is outside of the scope of this paper (see [Linehan, 1993a, 1993b](#)), we will briefly review the general strategies used in solution analyses.

For the purpose of illustrating a solution analyses, we will use the example of a client, Emily, who comes to session and reports having engaged in a self-harm following a fight with her boyfriend. In the course of conducting the chain analysis, the therapist learns that the client got stuck in traffic and was late to work, missed lunch, and realized she had missed an important deadline. When Emily got home that evening, she was feeling irritable, guilty and ashamed. Her boyfriend asked what she wanted for dinner, which Emily interpreted as a covert demand that she make dinner. She thought to herself, “How am I supposed to manage all of my work demands—which I obviously am not doing well anyway—AND take care of all the responsibilities at home? I’m failing at everything.” She lashed out angrily at her boyfriend, retreated to her room, and immediately felt fear that her boyfriend would be angry with her and might end the relationship. Emily then went into her bathroom and cut herself using razors she kept hidden in her medicine cabinet (see [Figure 2](#)). Although the situation at work was stressful, Emily identified the interaction with her boyfriend as the prompting event for self-injury. She also noted feeling relieved for a brief period after self-harming but that she then felt increasing fear that her boyfriend would be even more upset with her after learning of her relapse.

In conducting a solution analysis with Emily, the therapist has a wide variety of antecedent-focused strategies available. Perhaps the most obvious solutions are for Emily to improve her interpersonal effectiveness skills and to practice cognitive modification, as she shows considerable evidence of ineffective thinking in this chain. Thus, the therapist might use standard cognitive behavioral interventions such as Socratic questioning and the downward arrow technique (see [Beck, 1995](#)) to help Emily modify her cognitive errors. Hypothetically, if Emily had been able to identify that the thought “he is telling me to make dinner” is a distortion, she might not have then had the follow-up thought about failure. Thus, the chain would have been disrupted quite early.

Alternatively, the therapist could use the early portions of the chain as an opportunity to help Emily learn or improve her relationship-based interpersonal effectiveness skills (i.e., DEAR MAN and GIVE skills; see [Linehan, 1993b](#)). The therapist could help Emily identify a thought that her boyfriend expects her to make dinner and then teach her how to talk with her boyfriend in a gentle way about whether he actually expects her to make dinner. Emily and her therapist can then role-play various scenarios (with the therapist playing the role of the boyfriend); for example, the “boyfriend” might quickly correct Emily’s distorted interpretation of his question, or he might clarify that that is indeed his expectation. In that case, the therapist can then coach Emily through various responses to this situation that are consistent with her own goals and values. For example, the therapist might coach Emily on how to set a limit with her boyfriend, how to

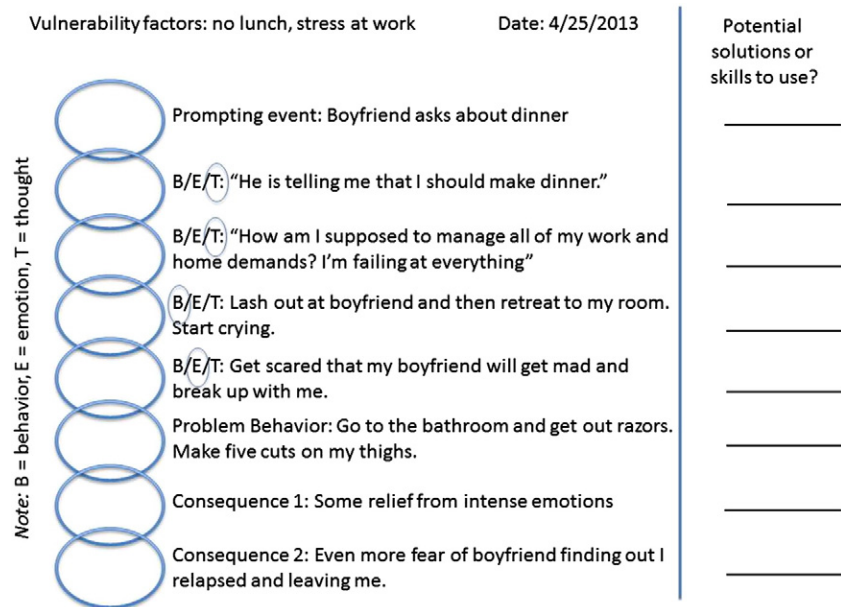


Figure 2. “Emily’s” chain analysis.

negotiate for shared dinner responsibilities, or how to experience and tolerate his disappointment with her without engaging in self-harm.

As the therapist moves along the chain, she may weave in solutions from other DBT skills modules. For example, as Emily's emotions increase over time, the therapist might have her practice mindfulness skills so that she improves her ability to observe herself moving in the direction of self-harm. Or, she might weave in skills from the emotion-regulation module to help her change her negative emotions toward herself or her boyfriend. As she becomes increasingly dysregulated, the therapist might help Emily better incorporate distress tolerance skills into her repertoire; specifically, they might make a plan for Emily to make a "distress tolerance box" for her bedroom that is filled with different ideas for skillful practice so that Emily has many ideas readily available for when she is feeling increasingly upset.

In terms of respondent-focused strategies (i.e., those that target links on the chain that occur after the problem behavior), the therapist is likely to focus on highlighting the fact that self-harm actually only worked for a brief period of time and was followed by another increase in negative affect. A pros and cons analysis of choosing a different emotion-regulation strategy other than self-harm is warranted here, particularly if Emily is in the early stages of therapy. The therapist can help Emily generate lists of reasons why she should not engage in self-injury in the future and help her find ways to access these lists when she is having urges to self-harm (e.g., by putting copies of the list on her bathroom mirror or in her wallet).

After generating a list of strategies and highlighting where they could have been used along the chain, the therapist and client collaboratively strengthen skills in session, plan for skills generalization outside of session, and troubleshoot skills implementation. Specifically, it is important for the client to rehearse new behaviors in session, and the therapist should help Emily strengthen the behavior until she feels comfortable with the new skill. Second, Emily and her therapist should identify which elements of the chain are likely to recur and help Emily put a plan in place to engage in more skillful future behavior rather than repeat the problem behavior. Finally, it is imperative that the therapist help Emily troubleshoot solution implementation by asking, "What is going to get in the way of you using these skills in the future?" This process is designed to both help solve problems in advance and to strengthen Emily's commitment to more effective behavior.

Common Problems That Arise in Doing Chain Analyses

Proficiency in conducting chain analyses requires practice, and difficulties are bound to arise as therapists

learn this skill. Even therapists with considerable experience are likely to encounter problems implementing chain analyses. Here, we review some of the difficulties that often occur in conducting chains and present some possible solutions.

Client Avoids and/or Does Not Want to Participate

Ideally, a client and therapist collaborate fully in the conduct of the chain, and the client can articulate clearly all the components of the sequence of events when asked. When working with clients with severe emotion dysregulation and longstanding problem behaviors, however, this situation is more often the exception than the norm. Thus, a major obstacle to conducting a chain analysis occurs if the client shuts down, does not participate, or otherwise avoids the task altogether (e.g., by changing the subject, walking out of session, or insisting that there are other more important items to discuss). Depending on the nature of the client's avoidance, it can sometimes be easy for the therapist to collude in this problem. For example, if the client gets angry and verbally lashes out at the therapist for bringing up the topic of a recent dysfunctional behavior, the therapist's backing off of the topic is likely to be negatively reinforced if the client becomes calmer.³

In our experience, we have found that client resistance to completing a chain analysis is often related to the therapist's failure to either (1) provide the client with an appropriate rationale about the function and purpose of the chain, or (2) orient the client to how to participate in a chain in session and how to generalize lessons learned in the chain to the client's daily life. That is, it is imperative that the therapist explain to the client, sometimes repeatedly, that the purpose of the analysis is to understand the client's life and behavior in a way that ultimately should lead to decreases in problem behaviors (and thus a life worth living). Therapists should provide this rationale in the context of validating the difficulty of the task, the combination of which should improve the client's willingness to engage collaboratively in the chain analysis.

Intense Emotion Occurs During the Chain

As mentioned previously, conducting a thorough analysis about a behavior often elicits strong negative emotions in the client. These emotions can occur based on any or all of the following: (1) "reliving" the event and the emotions that occurred at the time of the problem

³ Therapists need to be aware of these and other factors that affect their in-session behavior, and they should get support from their DBT consultation team members to continue on with the treatment despite being actively punished by clients for doing so.

behavior; (2) experiencing guilt or shame as a natural consequence of having engaged in the behavior; or (3) experiencing guilt or shame as a result of having to describe the event to another person. For clients who have difficulty managing intense emotions, as most clients in DBT do, these emotions can lead to a new set of problem behaviors that occur in session. For example, clients may experience strong urges to engage in the same problem behavior, or they may become actively suicidal, shut down or dissociate, or walk out of session abruptly. Even in the absence of these problem behaviors, clients who experience intense negative emotion during a chain may have difficulty encoding new information learned during the course of the session (e.g., [Salzman & Fusi, 2010](#)), which limits the utility of the chain altogether. Finally, intense emotion on the part of the client may make the session difficult to tolerate for both the client and the therapist.

One way for the therapist to mitigate these problems is to make copious use of DBT validation strategies (see [Linehan, 1993a, 1997](#)), which are critical for helping the client feel understood and for normalizing the emotions he or she is experiencing. Moreover, it is important for therapists to remain cognizant that completing chains is an inherently difficult task for many clients, and therapists should notice and validate that fact appropriately. In particular, we have observed in our experiences as teachers and supervisors that therapists new to DBT are more concerned with doing therapy “by the book” (e.g., “the client engaged in self-injury so I must do a chain analysis before anything else”), that they forget to pause, validate, soothe, remark on the difficulty of the task, and reinforce effective behavior, such as continuing to collaborate despite the difficulty of the task at hand.

Other Problems Interfere With the Chain and/or There Is Difficulty Staying “on Track”

Both avoidance and intense emotions can derail the process of conducting a chain analysis. In addition, clients and therapists can get distracted by any number of other topics and events that arise while conducting the chain, making it difficult to remain on task. Moreover, attention control difficulties may also contribute to this vexing problem. When teaching chain analyses, we often remind our students that they must be “laser sighted” when conducting a chain; that is, they should assume that numerous potential distractions will arise during the chain and that their task is to make moment-to-moment decisions about whether to incorporate the distracting element in the overall chain or to ignore the new information completely.

In most cases, this problem is minimized or eliminated by a thorough orientation to the structure and function of

chains. In our supervisory experience, we have watched sessions in which clients were unaware that the therapist was even doing a chain analysis because no orientation or rationale had been provided whatsoever! These clients do not know what is being asked of them and thus have difficulty participating appropriately in the chain. In general, we encourage therapists to be very direct and clear when beginning a chain; for example, the therapist might say something like the following: “We need to examine the step-by-step links that led up to and followed this behavior in order to figure out how to prevent it from happening in this way again. This is called a chain analysis, and we will use this tool any time a problem behavior occurs.” We have further found it very helpful to use a whiteboard, easel with writing pad, or carbon paper to write out the chain in full view of the client so that he or she can fully participate in the chain and to increase awareness of what is being examined. We encourage all clinicians to adopt a similar method.

The Client Engages in the Same Behavior Again and Again, Despite Repeated Chain and Solution Analyses

The function of the chain analyses is to develop a thorough understanding of the factors that contribute to and maintain the problem behavior so that effective solutions can be generated and implemented. Yet, therapists often feel like they discuss the *same problem behavior* every week and that there have been little or no changes in the client’s behavior. If this is truly the case (and not just the therapist failing to note incremental progress), we believe that the problem generally stems from an inadequate assessment of the behavior. Specifically, when a behavior occurs repeatedly despite attempts at intervention, we generally ask ourselves: “What is being left out of this assessment?” This question is meant to alert the therapist to the fact that, if the behavior continues despite repeated chain and solution analyses, the most critical link might not yet have been identified or it might not have been given utmost priority. This link could be a cognition that might highlight motivational issues (e.g., the client has the thought, “I know I’m not supposed to do this behavior anymore but I’m going to do it anyway”), a reinforcer that operates outside of awareness and thus might be more difficult to detect and change (e.g., increased attention from a parent—even negative attention—following an incident of self-harm), a vulnerability factor that has not been identified or understood as critically important (e.g., the client only eats one meal a day but has never discussed this point in treatment before because he thinks it is irrelevant), or a host of other possibilities. Rather than abandon the process of conducting thorough chain and solution analyses, the clinician is encouraged to see this as a puzzle that needs to be solved with grit and determination.

The Therapist Lacks the Skill(S) Required to Execute a Chain Analysis

When therapy does not produce the desired outcomes, a host of factors should be examined. Although client-specific factors may indeed be relevant, we encourage therapists to also focus on their own contributions to ineffective therapy. This stance is part of the essence of DBT, which assumes that treatment failure can be a result of the treatment itself not being effective or the therapist not being adherent to the treatment, but treatment failures are *not* assumed to be due to the behaviors of the client (Linehan, 1993a; Rizvi, 2011). Sometimes chain analyses are not done correctly because the therapist does not have the requisite skills, which include knowledge of the function of the chain analyses, the various components of the chain, principles of learning, and what we might label “basic therapeutic skills” that are necessary to ask relevant questions, keep the client on track, and validate appropriately. We hope that this article serves to address some possible skills deficits in therapists and we further recommend additional training in DBT for individuals who would like or need more experiential learning opportunities.

Case Example

For the purpose of illustrating a chain analysis, what follows is a transcript of part of an actual therapy session between the first author and a client (with certain details modified to protect the confidentiality of the client). The client is a 38-year-old man who lives with his wife and 10-year-old daughter. He currently is employed part-time but is seeking full-time employment, as his family is experiencing financial difficulties and because his current employer does not provide health insurance. He recently completed a “trial period” with a new employer, which he references in the chain analysis. The client has a long-standing history (since age 13) of self-harm behavior; specifically, he frequently hurts himself by using his fist to punch a concrete wall. In recent years, this behavior has occurred solely in the basement of his home. At the start of the session, the therapist reviewed the client’s diary card and noted that he had self-injured one time in the prior week. This behavior became the focus of the chain, which took approximately 25 minutes to complete. The transcript has been truncated slightly for space and is included here with commentary.

THERAPIST (T): Okay, so tell me about Friday, what happened?

CLIENT (C): Friday ... I was just very depressed.

T: So when did you harm yourself on Friday? *(starting to get specifics about PB)*

C: That evening.

T: And you punched the wall in the basement? *(defining the PB, querying location)*

C: Yeah.

T: How many times? *(getting specifics about frequency/duration of PB)*

C: Several times, um, at about three different times, I did it.

T: So did you do it once, then do something else, then go back to it? *(clarifying duration of PB)*

C: Yes.

T: Okay, what time of night do you think you started? *(defining timeline of PB)*

C: I would say around 7 pm.

T: Seven, okay, so your daughter was still awake and, wait, where were your wife and daughter? *(identifying other potential controlling variables)*

C: They were there, at home.

T: They were there, okay, so where were they?

C: I believe my wife was working upstairs; my daughter was in the living room.

T: Okay, so what happened, when did you first start thinking about harming yourself? *(working to identify the prompting event)*

C: I always have thoughts about harming myself, all the time.

T: Okay, so what made it different on Friday? *(differentiating vulnerability factors and prompting events)*

C: It was more intense ever since I got let go by that job, my emotions just went sky high and I don’t have control over them.

T: So you have the experience that you don’t have control over them. Like you had a thought that you can’t control your emotions? *(differentiating thoughts and feelings)*

C: Yeah. No matter how hard I tried to control it, the thoughts happened anyway.

T: So Thursday they told you that they couldn't keep you on and you and I talked a little bit on Thursday night. You didn't self-harm on Thursday night, despite having these high emotions. So what did you do instead on that night?

C: Well, like I told you on the phone, I was with my daughter the whole afternoon and I just spent my time with her and I played with her and just stayed away from the basement pretty much (*therapist noting that stimulus control may be an important part of solution analysis*)

T: Okay, on Thursday you just said to yourself, "I'm not going down to the basement." Okay, so then on Friday you went to work and came home at what time? (*querying timeline*)

C: I get off at about 5 so I was home at about 5:15.

T: Okay, were you thinking about harming yourself then?

C: I was actually thinking about getting a bottle of wine.

T: You were, did you drink on Friday? [*looks at diary card again*]. Oh, so you drank on Friday and Saturday— How much did you drink?

C: Two glasses of wine each day. (*therapist adding links on the chain to accommodate drinking*)

T: Okay, so you were thinking as you left work that you were going to get a bottle of wine (*starting to elucidate links between leaving work and self-harming later at home*)

C: Yeah, I just wanted to relax.

T: Now were you thinking at that point, "I'll drink some wine so that I can then harm myself?"

C: It was really just to try and calm myself down. I just thought I would get a bottle of wine, relax like I usually do, and um ...

T: So you picked up some wine on the way home and then what happened when you got home?

C: When I got home I had about two glasses of wine.

T: What were you doing while you were drinking?

C: Just had the TV on ... it's just hard to talk about ... [*looks down, stops talking*]

T: I understand that completely. It was obviously very difficult, and probably still is a very difficult time for you. My guess is that you are experiencing some embarrassment over this and that makes you not want to talk about it (*validation of emotional experience and difficulty discussing relapse with the therapist*) and yet the reason that I'm asking all these questions is that we have to really figure out all the specific components of what you did, so that we can figure out what we can do to make this go differently next time. Now of course we can hope that you don't get such bad news again in the future... (*orienting to rationale of chain*)

C: It always seems that if I get bad news, my emotions just go crazy.

T: Right, so we could focus our energy on you never getting bad news, but I don't think that will be very successful. So I think that we need to figure out how can you hear bad news, have your emotions get intense and not act on them.

C: Seems like I, I gotta let it go, no matter how I try to let it go, it's still there anyway.

T: Well this is why I really want to figure out what happened. So you drank some wine and what effect did that have on you? (*getting back to identifying links on the chain*)

C: I started feeling a little tipsy.

T: And is that a good feeling for you? (*clarifying contingencies—the therapist is not making any assumptions here about what effect the wine had on the client*)

C: Yeah, the wine relaxes me but as it turned out I ended up in the basement.

T: Okay, so what happened there? It sounds almost magical when you say that, but something led up to that (*highlighting that there were links that led to self-harm—it did not "just occur"*)

C: I just thought about harming myself, then I went to the basement.

T: Then you went to the basement — ah so, was there something different that you had about the thought then compared to the thoughts you had all week?

C: Yeah, just this gloom and doom thing, losing my job, you know, and I guess I got my hopes up, and I just thought for sure that it was going to happen and the way he just approached me when I was in the middle of doing a job, um I was in shock, he just comes out and says I no longer need you to work here, I'm sorry that I gotta let you go, financially we can't keep you on the force, it's not anything that you did wrong. If a job comes up in the future, he'll let me know, but of course in the back of my mind I'm thinking the opposite.

T: You're thinking that you did something wrong ...
(*therapist identifying potential cognitive distortion*)

C: I'm thinking that maybe I didn't work fast enough or maybe I did something wrong that he's not telling me.

T: And have those thoughts been staying with you since then or were those thoughts happening on Friday? (*therapist working to identify potential vulnerability factors, potential cognitive distortion to work on during solution analysis*)

C: Yeah, I'm having trouble sleeping as well, um, I just keep thinking about it all the time.

T: Thinking about it all the time and when you say "thinking about it all the time" are you thinking, these sort of thoughts like it's my fault or I should have done something different?

C: Not really. It's just the fact that I got let go and because I had all these plans inside my head of what I was going to do if it would have turned out right.

T: You started dreaming about all of that—"if I have this much money and I work these hours" and that sort of thing?

C: It's my chance to get ahead.

T: Uh, it's so disappointing. (*validation*)

C: [*begins to cry*] I take it too hard, that's what I do.

T: Well, see, this is part of the problem, I think. You experience emotions and then you tell yourself not to experience those emotions and there's something wrong with you for experiencing the emotions. Is that right? (*therapist generates hypothesis regarding controlling variable*)

C: I guess it's ok to, to cry over it. I'm supposed to feel better afterwards, right?

T: Some people do feel better after they cry. I sort of think of it as just part of being sad, you know, and I think it's reasonable to feel sad about this.

C: Then I should get past it.

T: Well the thing is, I think you jump too fast to that. I think when I experience sadness and something bad happens that it's ok to feel sad and I think, "How do I sort of be kind to myself during this period?" I think you don't have that reaction, your reaction is how do I punish myself more.

C: Yes, that's how I feel.

T: We need to change that ... and it sounds like you don't get a lot of support at home because your wife's response is "just get back up on the horse and get more jobs" without realizing—

C: She, the same day she expected me to go right on the computer and start looking again, which I tried to do and I was just so discouraged by everything but I did, I looked around a little the next day and she expects me to get right back on the horse and continue going cause it's easy for her to do that.

T: She doesn't have the same reaction as you.

C: No, she's a lot stronger than me.

T: I wouldn't say it that way, I would say she's less sensitive or less reactive.

C: Less sensitive, yeah, she, um, she's gone through this, going through jobs every month or so.

T: So both of you are dealing with kind of this uncertainty about your jobs and your finances and she reacts in a different way than you. No one is better or worse than the other, it's just a different way of reacting to it. I'd say that the problem is not that you got sad, the problem is that you got sad and then you beat yourself up over it and you go and harm yourself, which doesn't do anything to solve the problem as far as I'm concerned. (*therapist elucidating that the critical element here is the self-invalidation in that the client doesn't think he has a "right" to feel the way he feels*)

C: Well it's a release of something.

T: Okay, so tell me more about that, so then it's Friday, you've had a bit of wine, which probably relaxed you a little bit, but maybe disinhibited you a little bit so now

you're more likely to do something impulsive. (*back to links*)

C: Yeah, you could say that.

T: I mean—I don't know—do you think that that's true? Had you not had the wine do you think you would have harmed yourself? (*hypothesis testing in order to determine controlling variables*)

C: I think in a way I would have.

T: Okay, so you've had some wine and you're still sitting and watching TV and you're having a more intense thought about harming yourself? And what are you feeling at that moment?

C: I just have all these thoughts going through my head about, just losing my job and I just said I need some way to feel better, the wine helped a little bit, the self-harming gives me a release of something.

T: So you started to think in your mind, I need to get a release.

C: I need to feel better somehow.

T: And then you went down to the basement. Did you tell anybody that you were going down there?

C: No.

T: Is there time between when you first go down and you start punching the wall or does it happen like right away as soon as you're downstairs? (*clarifying timeline*)

C: As soon as I go down there.

T: Okay, so you go down there with a purpose of doing it.

C: Yeah, there's a purpose of going down there, it's not to check the laundry or anything ...

T: And how hard did you punch the wall? Did you bruise or bleed? (*details about PB and also starting to get details about consequences*)

C: Got some bruises, a little bit of swelling.

T: Was that the first time or you mean after doing it several times?

C: After doing it several times.

T: And how did you feel? (*identifying short-term emotional consequences*)

C: Guilty, ashamed.

T: You feel guilty and ashamed now? What about immediately afterwards?

C: Afterwards, it was just a release for me.

T: Immediately your negative emotions went down? (*identifying short-term consequences*)

C: Yeah, right away cause it's just a release of something for me. It's just built up like a stick of dynamite and then once I do that, the whole pressure goes away, all the stress that I'm feeling at the time.

T: Do you feel like it, does it work that well, does it really just go away entirely?

C: It goes down, yeah.

T: And then, what did you do on Friday after the first episode when you went downstairs— Did you go back upstairs and what did you do?

C: I went back up and continued to drink my wine.

T: Hmm, did you continue feeling better then?

C: I just felt lousy.

T: You felt lousy, so the relief comes, but then pretty quickly after, the guilt and the shame come back? (*clarifying timeline, helping C build insight*)

C: Yeah because, you know I stop doing it for a while and then went back to it so I felt, I felt lousy after I've done it.

T: Now had you thought before you went down to the basement before doing anything else like calling me or going for a bike ride or playing with your daughter? Did you have any of those thoughts or had you been kind of determined?

C: Unfortunately, I was just determined, I just block out everything else around me and the one thing that I'm determined to do, is self-harm. It's the only thing I can think about.

T: So it's kind of like you, in that space, you have become really sort of close-minded, like this is the only thing you're focusing on and nothing else. Is it that nothing else even occurs to you or is it that it might occur to you, but you just dismiss it right away?

C: I dismiss it right away.

T: And at what point on Friday do you think you got to that "point of no return"? What I'm wondering is then on Friday afternoon was there a certain point where you sort of became this focused, like I'm going to harm myself tonight? (*going back to investigating prompting events*)

C: I would say that didn't occur until once I got home.

T: Until once you got home, but it was building up.

C: It built up to that.

T: At what point on Friday do you think if something had happened you could have avoided self-harm? Like, for example, do you think that when you first got home if your daughter said, "Dad, let's go do something," would that have prevented you from harming yourself? Or if you decided when you first got home you were going to go on a bike ride, would that have done something different? (*beginning to test hypotheses for solution analyses*)

C: It probably would have helped me.

T: Do you think, I'm genuinely asking did you think that once you got over that initial tough part when you first got home or do you think you would have later on done it anyway?

C: Well I go to that place where I don't want to do anything, you know, I mean I don't want to let my daughter down, but I would just tell her maybe we can do that tomorrow or something.

T: You might have said that to her

C: Yeah, she would have said do you want to go for a bike ride? I would just tell her I don't have time to go now but we can go tomorrow instead.

T: You think you would have done that on Friday.

C: Yeah—it's not a good place to be.

T: Yeah, I want to work with you to try and prevent that place and the reason I'm asking all these questions is to try and figure out, how do we prevent you from getting to that place, cause it sounds like once you get to a certain point, you become so fixated on self-harm that nothing could get in the way of you doing it.

C: Yeah.

Case Example Discussion

This transcript is an example of how to nonjudgmentally conduct a chain analysis to assess the various elements that preceded and followed a problem behavior. The therapist evaluates the elements of the chain while validating the difficulty inherent in the process, keeping the client on task even when his emotion begins to rise and he appears to be on the brink of getting off topic. The therapist skillfully elucidates why the problem behavior occurred given that the client has been exposed to the same trigger in the recent past and did not engage in self-injury. Moreover, she stays laser sighted about the target of the chain without being derailed by other elements (e.g., drinking, difficulties in his relationship with his wife, etc.).

This transcript of an actual chain analysis is included here to bring to life the various components of the chain, and potential problems that could arise, discussed earlier. The problem behavior of self-injury, specifically punching his hand repeatedly into a wall, was analyzed and its relationship to antecedents and consequences was explored. At this point, the therapist can picture in her mind's eye the sequence of events that led up to and followed the behavior. This is a key point in the practice of conducting chains; by the end, the therapist wants to have as complete a picture as possible as to how the events unfolded, such that she understands (not to be confused with approves) how the problem behavior came to occur.

Although the therapist begins to highlight some possible areas in which to implement solution analyses, the transcript does not include a complete solution analysis. The next steps for the therapist would be to identify the critical links at which to implement a new behavioral plan and to gather a commitment from the client to not engage in self-injury again, even if the same initial sequence of events presents itself.

Conclusions

Because chain analyses are a critical ingredient in DBT, and because they may serve several vital functions in the service of client improvement, it is imperative that

DBT therapists understand when and how they should conduct a chain. Little, however, has been written on the topic of conducting chain analyses, and this paper aims to fill that gap. Rather than viewing the chain analysis as a rote, mechanistic, painful task, we hope to empower therapists with clear and understandable suggestions for mastering the art of the chain analysis. In our own work as supervisors and trainers of DBT, we have learned that a variety of therapist characteristics hinder or impede the use of chains. In particular, we have found that lack of skill, lack of buy-in to the value of such analyses, and feelings of incompetence or uncertainty are particularly problematic. In this paper, we sought to remediate the first and second of these problems; we hope that in doing so, we helped alleviate the third problem.

References

- Baum, W. M. (2004). *Understanding behaviorism: Behavior, culture, and evolution*. Malden, MA: Blackwell.
- Beck, J. S. (1995). *Cognitive therapy: Basics and beyond*. New York, NY: Guilford Press.
- Bridges, M. R. (2006). Activating the corrective emotional experience. *Journal of Clinical Psychology: In Session*, 62, 551–568. <http://dx.doi.org/10.1002/jclp.20248>
- Conway, M. A. (2009). Episodic memories. *Neuropsychologia*, 47, 2305–2313. <http://dx.doi.org/10.1016/j.neuropsychologia.2009.02.003>
- Gross, J. J., & Thompson, R. A. (2007). Emotion regulation: Conceptual foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3–24). New York: Guilford.
- Holmes, E. A., & Mathews, A. (2010). Mental imagery in emotion and emotional disorders. *Clinical Psychology Review*, 30, 349–362. <http://dx.doi.org/10.1016/j.cpr.2010.01.001>
- Kazdin, A. E. (2001). *Behavior modification in applied settings* (6th ed.). Belmont, CA: Wadsworth/Thomson Learning.
- Koerner, K. (2007). Case formulation in dialectical behavior therapy for borderline personality disorder. In T. Eells (Ed.), *Handbook of psychotherapy case formulation* (2nd ed., pp. 317–349). New York, NY: Guilford Press.
- Lang, P. J., Levin, D. N., Miller, G. A., & Kozak, M. J. (1983). Fear behavior, fear imagery, and the psychophysiology of emotion: The problem of affective response integration. *Journal of Abnormal Psychology*, 92, 276–306. <http://dx.doi.org/10.1037/0021-843X.92.3.276>
- Linehan, M. M. (1993a). *Cognitive behavioral treatment of borderline personality disorder*. New York, NY: Guilford Press.
- Linehan, M. M. (1993b). *Skills training manual for treating borderline personality disorder*. New York: Guilford Press.
- Linehan, M. M. (1997). Validation and psychotherapy. In A. Bohart, & L. S. Greenberg (Eds.), *Empathy and psychotherapy: New directions to theory, research, and practice* (pp. 353–392). Washington, DC: American Psychological Association.
- Lynch, T. R., Chapman, A. L., Rosenthal, M. Z., Kuo, J. R., & Linehan, M. M. (2006). Mechanisms of change in dialectical behavior therapy: Theoretical and empirical observations. *Journal of Clinical Psychology*, 62, 459–480. <http://dx.doi.org/10.1002/jclp.20243>
- Pryor, K. (2006). *Don't shoot the dog: The new art of teaching and training* (3rd ed.). New York, NY: Ringpress Books.
- Ritschel, L. A., Miller, A. L., & Taylor, V. (in press). Dialectical behavior therapy for multi-problem adolescents. In J. Ehrenreich-May & B. Chu (Eds.), *Transdiagnostic mechanisms and treatment for youth psychopathology*. New York, NY: Guilford Press.
- Rizvi, S. L. (2011). Treatment failure in dialectical behavior therapy. *Cognitive and Behavioral Practice*, 18, 403–412.
- Rizvi, S. L., Steffel, L. M., & Carson-Wong, A. (2013, September 3). An overview of dialectical behavior therapy for professional psychologists. *Professional Psychology: Research and Practice*, 44, 73–80. <http://dx.doi.org/10.1037/a0029808>
- Salzman, C. D., & Fusi, S. (2010). Emotion, cognition, and mental state representation in amygdala and prefrontal cortex. *Annual Review of Neuroscience*, 33, 173–202. <http://dx.doi.org/10.1146/annurev.neuro.051508.135256>
- Skinner, B. F. (1957). *Verbal behavior*. Acton, MA: Copley.
- Williams, H. L., Conway, M. A., & Cohen, G. (2008). Autobiographical memory. In G. Cohen & M. A. Conway (Eds.), *Memory in the real world* (3rd ed., pp. 21–90). Hove, UK: Psychology Press.

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