Chapter 10

Cognitive-Behavioral Case Formulation

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This chapter describes the historical background and conceptual underpinnings of cognitive-behavioral (CB) case formulation, discusses the role of cultural factors, offers an opinion about when a case formulation is helpful (always), spells out the steps involved in developing a CB case formulation, presents a case example, discusses training issues, and briefly summarizes research.

HISTORICAL BACKGROUND OF THE APPROACH

The model of CB case formulation presented here has multiple historical origins. The most important is probably functional analysis (Haynes & O’Brien, 2000; Nezu, Nezu, Friedman, & Haynes, 1997), which itself has origins in operant conditioning theory and the tradition in psychology of the study of the single organism (Morgan & Morgan, 2001). We also rely heavily on the evidence-based formulations for particular disorders and symptoms that have been developed over the last 50 years by CB theorists. We also rely on the theories that underpin those disorder formulations, especially Beck’s cognitive theory, learning theories (e.g., theories of associative learning, operant conditioning, and modeling), and theories of emotion (Lang, 1979). We also borrow from methods for formulating the case developed by other CB therapists (Beck, 1995; Koerner, Chapter 11, this...
volume), and from clinical writings about the case formulation by other CB therapists (Freeman, 1992; Padesky, 1996; Tarrier & Calam, 2002).

In this chapter we make several substantial changes to our earlier presentations (Persons, 1989; Persons & Davidson, 2001; Persons, Tompkins, & Davidson, 2000), including those in the previous edition of this volume (Persons & Tompkins, 1997). We present the formulation as one element of a hypothesis-testing approach to clinical work; we rely more on diagnosis, we allow for formulations based on conditioning and emotion theories (in our previous work, formulations were always based on Beck’s cognitive theory), we simplify the format of the formulation, and we describe a worksheet that aids in the process of developing a case formulation. We discuss all these changes in detail below.

CONCEPTUAL FRAMEWORK

Case Formulation as One Element of a Hypothesis-Testing Approach to Clinical Work

CB case formulation is an element of an empirical hypothesis-testing approach to clinical work that has three key elements, assessment, formulation, and intervention. Information obtained during assessment is used to develop a formulation, which is a hypothesis about the causes of the patient’s disorders and problems, and which is used as the basis for intervention. As the treatment proceeds, the therapist doubles back repeatedly to the assessment phase, collecting data to monitor the process and progress of the therapy and using those data to revise the formulation and intervention as needed. This chapter focuses primarily on the formulation piece of that model.

Qualities of a Good CB Case Formulation

A good CB formulation has several qualities. It has good treatment utility, that is, it contributes to the effectiveness of treatment (Hayes, Nelson, & Jarrett, 1987). It is parsimonious; that is, it offers the minimum detail necessary to accomplish the task of guiding effective treatment, and it is evidence-based. We elaborate a bit here on what we mean by an evidence-based case formulation.1

An evidence-based CB case formulation is one that is supported by evidence. Of course, all clinicians strive to develop case formulations that are supported by evidence. What distinguishes CB case formulations is the types of evidence that CB therapists value and use. CB therapists place a high value on evidence from controlled studies and on the use of objective measures to collect systematic data about the case at hand.

The CB therapist relies on several types of controlled studies in the
process of case formulation, including studies of basic mechanisms underpinning symptoms or disorders (e.g., the finding by Kring and colleagues, reviewed in Kring & Werner, 2004), that the diminished expression of emotion seen in individuals with schizophrenia is not accompanied by a diminished experience of emotion, epidemiological findings (e.g., that bipolar disorder and substance abuse are frequently comorbid), and randomized controlled trials (e.g., the finding that panic control treatment [PCT] provides effective treatment for panic disorder [Barlow, Craske, Cerny, & Klosko, 1989], a finding that provides some support for the formulation that underpins PCT, namely, that panic symptoms result from catastrophic misinterpretations of benign somatic sensations).

The CB therapist also relies on data from the case at hand, as do all clinicians. However, CB therapists probably rely more than other therapists on diagnosis and objective data in the process of developing and testing formulation hypotheses. For example, at our center, we frequently use self-report measures of symptoms of anxiety, depression, and obsessive–compulsive disorder to track progress in patients we treat for those problems. Our waiting room holds files of measures (we use the Beck Depression Inventory [Beck, Rush, Shaw, & Emery, 1979], the Burns Anxiety Inventory [Burns, 1998], and the Yale–Brown Obsessive–Compulsive Scale [Goodman et al., 1989]); we ask our patients to come 5 minutes early for their therapy session, complete whichever measure or measures are being used to monitor progress, and present it to the therapist at the beginning of the session.

The Nomothetic/Idiographic Distinction

The term “nomothetic” is derived from the Greek word nomos, which means law and refers to general laws of behavior. A nomothetic theory, for example, describes general laws of functioning that apply to all individuals or groups of individuals (e.g., the principles of operant conditioning, or the proposal that panic disorder symptoms result from catastrophic misinterpretations of benign somatic sensations). The word “idiographic” is derived from the Greek word idios, which means one’s own, and private, and refers to theories that are applicable to a particular specific case (Cone, 1986). The method of case formulation described here emphasizes the use of evidence-based nomothetic formulations as the foundation for the development of idiographic formulations.

Levels of Formulation

Formulation occurs at several levels: the level of symptom, disorder or problem, and case. For example, the symptom of auditory hallucinations has been conceptualized by CB therapists as thoughts that are attributed by
the individual to an external source (Kingdon & Turkington, 2005). A disorder or problem usually consists of a set of symptoms or problem behaviors. For example, major depressive disorder has been conceptualized as made up of automatic thoughts, negative emotions, and problem behaviors that result from the activation of negative schemas by stressful life events (Beck et al., 1979). The problem of treatment noncompliance experienced by John, the patient described in our case example, was conceptualized as consisting of unassertiveness and other avoidance behaviors, negative cognitions (e.g., “what’s the point”), and negative emotions (e.g., dysphoria) arising from John’s schemas of himself as inadequate, of others as critical, and of the future as hopeless. The formulation at the level of the case is a hypothesis about the causes of all of the patient’s symptoms, disorders, and problems, and how they are related. We use the term “problem” in two ways: to refer to difficulties that are not symptoms or disorders (e.g., treatment noncompliance), and in a generic way that includes all symptoms, disorders, and problems. This chapter focuses primarily on formulation at the level of the case.

Components of the CB Case Formulation

The CB case formulation is a hypothesis that ties together, in a brief narrative or diagram, the mechanisms that cause and maintain all of the patient’s problems, the origins of the mechanisms, and the precipitants that are currently activating the mechanisms to cause the problems. The formulation also describes the relationships among the problems. We provide a case example and then we discuss each component (problems, mechanisms, origins, precipitants) in detail.

Example: Formulation of the Case of John

John is a 37-year-old, single, second-generation Japanese American male who lives alone and is self-employed as a web designer. John, who has hepatitis C, was referred by his nephrologist for treatment of depression and poor medical adherence. His chief complaint to the therapist was: “My doctor says I’m not getting better and it’s time for some new ideas.”

John’s therapist developed the following formulation of his case. The origins, mechanisms, and precipitants are identified in brackets [e.g., origins], and the problems are italicized.

Caused by [origins] a likely biological vulnerability to anxiety (as evidenced by his mother’s apparent social anxiety) and by rearing in a household in which (due to his mother’s shyness and her difficulty adjusting to the American culture) there were few visitors and thus few models of easy social interaction, and in which his father was largely absent but when present often brutally critical and attacking, John developed [mechanisms]
schemas of others as critical and rejecting, of himself as weak, weird, and helpless, and of the future as hopeless. These schemas, activated by [precipitants] his worsening medical problems and increasing pressure from his physician to comply with treatment recommendations, have exacerbated John’s social anxiety and passive, unassertive, and avoidant behaviors. John’s medical problems also trigger [precipitants] his schemas by causing physical symptoms (sweating, trembling, fatigue, and dizziness) that he fears others will notice and then think him as weird or weak. In addition, John’s social anxiety and unassertiveness worsen his noncompliance, because the symptoms block him from following some of his physician’s recommendations (e.g., to attend a self-help group for hepatitis C) and even from participating fully in treatment-planning discussions with his physician. The noncompliance, of course, aggravates his medical condition and the symptoms he worries that others will notice. John’s views of himself as weak and of the future as hopeless, together with all his other problems, cause depression and suicidal thoughts and urges. John copes with distress through avoidance (which leads to social isolation that generates evidence to support his belief that others are rejecting and he is weird), and alcohol abuse (which exacerbates his liver disease, depression, and social isolation).

Problems. We use the term “problems” to refer to overt or manifest symptoms, disorders, or difficulties the patient is having in any of the following domains: psychological/psychiatric symptoms; interpersonal, occupational, school, medical, financial, housing, legal, and leisure problems; and problems with mental health or medical treatment (Linehan, 1993; Nezu & Nezu, 1993; Turkat & Maisto, 1985). A comprehensive case formulation accounts for all of the patient’s problems in all these domains; the notion is that in order to understand the case fully, the therapist must know what all the problems are and how they are related. The fact that the formulation includes all of the patient’s problems does not mean that they will all be treated in therapy. For example, the patient illustrated here has hepatitis C, and even CB therapy does not provide effective treatment for hepatitis C! However, a comprehensive conceptualization of John’s case requires attending to his medical illness.

Mechanisms. The heart of the formulation is a description of mechanisms or processes (e.g., in this case, schemas) that are causing and maintaining the patient’s problems. The CB case formulation emphasizes psychological mechanisms but can also include biological and somatic mechanisms.

Origins of the Mechanisms. Here the formulation describes the distal causal factors that cause the mechanisms (in contrast to mechanisms, which can be seen as proximal or immediate causal factors of the problems). For
example, if Beck’s theory is used, as in the case of John, the “origins” part of the formulation describes how John learned the schemas that cause his problems. The origins section of the formulation can also identify the causes of biological mechanisms, as in the case of John, where likely genetic causes of biological mechanisms driving John’s mood and anxiety disorders are identified. Cultural factors (e.g., in John’s case, rearing by Japanese American parents) are also often relevant here as well as family factors, social factors (e.g., the fact that John’s parents rarely entertained guests), and aspects of the physical environment, such as the fact that John’s family lived in a neighborhood in which there were few other Japanese Americans.

Precipitants of the Current Problems. Most nomothetic CB formulations are diathesis–stress hypotheses, proposing that symptoms and problems result from the activation of psychological and/or biological vulnerabilities by one or more diatheses or stressors that can be internal, external, biological, psychological, or some combination of these. Sometimes the precipitants are events that cause the initial onset of a disorder or symptom (e.g., a promotion might trigger an episode of bipolar disorder) and sometimes, as in the case of John, precipitants are events that trigger an exacerbation of longstanding problems.

Tying It All Together. One purpose of a formulation is to tie together the elements of a case (origins, mechanisms, precipitants, problems) into a coherent narrative so they can be understood as a whole rather than as a list of disparate unrelated facts. The case formulation is presented in a paragraph, as in the example above, or in a diagram with arrows (for examples, see O’Brien & Haynes, 1995; Persons & Davidson, 2001).

INCLUSION/EXCLUSION CRITERIA
AND MULTICULTURAL CONSIDERATIONS

Inclusion/Exclusion Criteria

CB therapy is always guided by a formulation. For example, Barlow’s PCT is based on a nomothetic formulation of panic disorder as arising from catastrophic misinterpretations of benign somatic sensations (Barlow & Craske, 2001). The clinician working with a particular client individualizes this nomothetic formulation of panic by asking the client to describe the particular anxious cognitions he has, the particular bodily sensations he fears, and the particular situations he avoids. The clinician might individualize the nomothetic formulation on the fly, and for a simple case this is often sufficient.

However, we find that a complete, written individualized formulation is helpful in the treatment of clients who have multiple problems or disor-
ders or who do not make good progress in treatment. Therapists, particularly inexperienced ones, often feel overwhelmed by complex, multiple-problem clients. The therapist wonders which problem to tackle first, how to track progress in the therapy, and how to intervene appropriately. The CB case formulation method is particularly helpful when working with these clients because of the method's emphasis on a comprehensive Problem List. The simple process of making a Problem List for a client who has many problems can be helpful to both therapist and client. In addition, the formulation provides a framework for understanding how problems are related and how they are related to the underlying hypothesized psychological mechanisms, allowing the therapist to intervene in multiple problem domains (e.g., financial, interpersonal, and personal safety) and still see the therapy as having a central theme.

Multicultural Considerations

CB therapy has long asserted the important role of context, including sociocultural context, in psychological development (Hayes & Toarmino, 1995). Sociocultural factors are the standards against which people judge their behavior as normal and expectable or pathological. For example, *taijin kyofusho* is a common form of social phobia in Japan characterized by anxiety about public self-presentation and performance and in particular by the more culture-specific concern that one's inappropriate social behavior, such as staring, will make others uncomfortable. The sociocultural expectation that it is inappropriate to make others uncomfortable reflects the importance given in Japan to harmonious interaction. As a result, symptoms of *taijin kyofusho* can be less indicative of psychopathology in Japan than they would be in other cultures. This example illustrates the way an understanding of cultural factors can affect the therapist's view of the seriousness or nature of the patient's problems and even the diagnosis. Cultural factors can also play a role in the origins of schemas or other hypothesized mechanisms, as in the example of John. Thus, to develop a comprehensive formulation of the case of a client who has been raised in another culture or by parents or caretakers who have come from another culture, clinicians would do well to consult with the client or with others knowledgeable about the culture.

In general, it is essential that CB therapists gather information regarding a client's sociocultural variables (degree of assimilation or acculturation, religious beliefs, racial identity, socioeconomic status, traditional sources of social support—e.g., the nuclear or extended family—and sociocultural values—Multicultural historical experience of client's cultural group in the United States) when developing a case formulation. John's case challenges us to consider the familial, social, and cultural factors that might influence or reinforce the problems he has with assertiveness and social
anxiety. Although John was born in the United States, his parents emigrated from Japan. His therapist might wonder whether his parents expected John to adhere to Japan’s cultural norms about assertiveness or those of the United States, which demand a willingness to make others uncomfortable in the service of expressing a personal wish or desire. The therapist knows that John’s mother tended to spend most of her time at home and had few friends or outside interests. Is this evidence that John’s mother had social phobia herself, or was it simply her difficulty acculturating? Similarly, to what degree, if any, is John’s unassertiveness with his physician (or even his therapist) a reflection of the value the Japanese culture places on respecting and complying with those in authority, rather than a feature of his social anxiety? The therapist knows that John’s father was critical of him. To what degree does this familial factor influence John’s social anxiety and unassertiveness relative to the possible cultural factors? The answers to any of these questions not only might influence what John views as a problem, and thereby John’s willingness to work with the therapist collaboratively, but also can influence therapist’s views about the hypothesized psychological mechanisms that underpin John’s problems.

The therapist discussed all these issues with John, taking care to be aware of cultural factors that might influence the discussion—for example, taking care not to assume that John and the therapist necessarily had the same definition of or view of the value of assertiveness. John indicated that he did not see the cultural factors as exerting as large an influence on his anxiety and difficulty with assertiveness as the familial factors (a critical and rejecting father, the absence of adequate modeling of assertive behavior, and limited exposure to social situations as a child because of his mother’s social isolation), and this view is reflected in the formulation of his case.

**STEPS IN CASE FORMULATION**

To develop a case formulation, we suggest that the clinician carry out these steps in order: (1) obtain a comprehensive Problem List; (2) assign a five-axis DSM diagnosis; (3) select an “anchoring diagnosis”; (4) select a nomothetic formulation of the anchoring diagnosis to use as a template for the hypothesized psychological mechanisms part of the formulation; (5) individualize the template so that the formulation accounts for the details of the case at hand and for all of the problems on the Problem List and their relationships; (6) propose hypotheses about the origins of the psychological mechanisms; and (7) describe precipitants of the current episode of illness or symptom exacerbation. These steps yield the information needed to write a formulation of the case (see example of John). As he carries out these steps, the therapist may want to set up a worksheet and write down...
each step in turn. We strive to carry out all these steps and write a formulation after three to four sessions.

We describe here each step of the process of obtaining a case formulation. Of course, the order described here is an idealized one; in fact, lots of things happen in tandem or in a different order. For example, in the process of developing a Problem List (step 1), the therapist will be thinking about and collecting information about how the problems are related to one another and what mechanisms might be causing or maintaining them (steps 4 and 5).

1. Obtain a Comprehensive Problem List

A comprehensive Problem List describes all the problems the patient is having in all of these domains: psychological/psychiatric symptoms; interpersonal, occupational, school, medical, financial, housing, legal, and leisure problems; and problems with mental health or medical treatment. Although comprehensiveness is important, it is also important to keep the Problem List to a manageable length so the therapist can keep a grasp of it. If the list is longer than 10 items, it is a good idea to group some of the problems together in order to shorten the list to 5–8 items. It is useful to state the problems in a simple format, using a word or two to name the problem, followed by a description of the problem. It is useful when possible to describe the cognitive, behavioral, and emotion elements of problems (e.g., John’s unassertiveness problem with his physician involves typical behaviors of listening to his doctor make treatment recommendations he doesn’t understand but not speaking up to ask questions about them due to his following thoughts: “If I speak up my doctor will get mad and think I’m a wimp”).

The main strategy most therapists use to collect a comprehensive problem list is the clinical interview. It is useful to start the interview by asking the patient to describe the problems he or she is concerned about. After this has been done, the therapist can ask for a status report on each domain that has not yet been touched on (Persons et al., 2000).

The tension the therapist always confronts is the pressure to move quickly to address the patient’s current concerns while obtaining the information needed to understand how the current concerns are part of a larger context. Paper-and-pencil assessment tools are helpful in resolving this tension. We ask our patients to complete and bring to their initial interview several self-report scales, including the SCL-90-R (Derogatis, 2000), the Beck Depression Inventory (BDI; Beck et al., 1979), the Burns Anxiety Inventory (BAI; Burns & Eidelson, 1998), a modification of the CAGE for assessing substance use (Mayfield, McLeod, & Hall, 1974), and responses to questions about trauma, abuse, legal problems, and history of mental health treatment. We have also developed a brief paper-and-pencil assess-
Cognitive-Behavioral Case Formulation

Careful observation can alert the therapist to problems that patients may not acknowledge or verbalize, such as lateness, a disheveled appearance, and, of particular importance because they are often a key reason patients seek treatment, interpersonal skills deficits such as poor eye contact. These behaviors and phenomena yield valuable information about problems and even suggest hypotheses about underlying mechanisms.

Information about past mental health problems and treatment is particularly important because it provides important information about such things as the tendency to discontinue treatment prematurely. Treatment history can also yield important diagnostic ideas that at least other therapists had (e.g., a history of treatment with lithium suggests the possibility that the patient may have bipolar disorder).

When the therapist observes problems of which the patient is unaware or which the patient does not accept (e.g., a diagnosis of bipolar disorder), the therapist might or might not wish to immediately insist that the patient endorse these as problems. To decide whether and when to do this, the nascent case formulation can be helpful. For example, patients who believe “If I have problems, I am worthless” may not be receptive to placing a new item on the Problem List until they feel more trusting of the therapist. A mutually agreed on Problem List is ideal but not always possible.

2. Assign a Five-Axis DSM Diagnosis

The role of diagnosis in CB therapy is a complex issue (Follette, 1996). We encourage the clinician to rely on diagnosis because it provides a link to evidence-based nomothetic formulations, the literature on empirically supported treatments (ESTs), and the experimental psychopathology literature. The clinician does not usually do a research-quality diagnostic assessment but might use parts of formal diagnostic interview tools in certain clinical situations (e.g., when screening for bipolar disorder); for a review of current options and their clinical utility, see Antony and Barlow (2002).

The Problem List overlaps considerably with the information provided by Axes I–IV of the DSM. The Problem List might even include one or more of the patient’s Axis I disorders listed as the disorder itself (e.g., major depressive disorder or obsessive–compulsive disorder). Or, the Problem List might slice up the pie a bit differently; for example, if there are several anxiety disorders, the clinician might group them all together as one problem of anxiety. Or, if the patient has social phobia on Axis I, avoidant personality disorder on Axis II, and is socially isolated on Axis IV, all these might be grouped together as aspects of one problem on the Problem List, perhaps named social anxiety and isolation. The general rule guiding the selection
300 STRUCTURED CASE FORMULATION METHODS

and formatting of problems on the Problem List is clinical utility. Using this 
rule, the clinician might choose to include an important problem on the 
Problem List more than once; for example, John’s therapist listed suicidal 
thoughts and urges as a problem in its own right in addition to including it 
as a symptom of the problem of depressive symptoms.

Again guided by the notion of clinical utility, the therapist’s task is not 
to simply place on the Problem List all of the patient’s DSM disorders (this 
strategy would make the Problem List unnecessary). Instead, the Problem 
List is a place to begin to describe problems in a way that helps the thera-
pist develop a CB conceptualization of the case. Often this means a focus 
on symptoms and a description of the behavioral, cognitive, emotional, and 
somatic aspects of problems. Thus, for example, instead of simply placing 
social phobia on the Problem List, John’s therapist listed some of the key 
behavioral, cognitive, emotional, and somatic aspects of John’s social anx-
xiety. In this way, the description of the social anxiety and isolation problem 
sketches out a problem or disorder-level formulation that will guide treat-
ment of that problem and even begins to describe how the social anxiety 
problem is related to John’s medical noncompliance problem.

It is not usually helpful to list Axis II disorders per se on the Problem 
List, because there are few empirically supported formulations and treat-
ments for personality disorders and because the overlap of symptoms and 
problems of Axis I and Axis II disorders is so extensive. Instead, listing 
some of the significant symptoms and problem behaviors of a patient’s Axis 
II disorder or disorders facilitates conceptualization and treatment from a 
CB vantage point.

3. Select an “Anchoring” Diagnosis

Here the clinician selects a primary or anchoring diagnosis that will be used 
to guide selection of a nomothetic template for the idiographic case formu-
lation. Using the parsimony principle, a useful approach to selecting an an-
choring diagnosis is to choose the diagnosis that accounts for the largest 
number of problems on the Problem List—that is, the diagnosis that inter-
feres most with the patient’s functioning. Practically, one implication of this 
rule is that if a patient has bipolar disorder, schizophrenia, or borderline 
personality disorder (disorders that can account for many presenting pro-
blems) the clinician may want to select this diagnosis as the anchoring diag-
nosis.

Sometimes it is useful to choose an anchoring diagnosis based on the 
current treatment goals. So, for example, if the patient has bipolar disorder 
under good control and wants to treat her panic symptoms, the panic disor-
der diagnosis might serve as the anchoring diagnosis. Even so, the clinician 
will want to keep the bipolar disorder in mind as treatment proceeds. 
Becker (2002) provides a fascinating description of her method for integrat-
ing conceptualizations and interventions from several disorders and ESTs in the treatment of a single complex case. The decision about selection of an anchoring diagnosis is a clinical and pragmatic one guided by principles of parsimony and clinical utility rather than one based on any science, as little research about this type of clinical decision making is available.

4. Select a Nomothetic Formulation of the Anchoring Diagnosis

If an evidence-based nomothetic formulation of the anchoring diagnosis is available, select one to serve as a template for the idiographic case formulation. For example, in the case presented here, the nomothetic formulations of social anxiety disorder developed by Clark and Wells (1995) and Rapee and Heimberg (1997) served as a template for the formulation of John’s case. Sometimes more than one nomothetic formulation template is available (e.g., multiple evidence-based ESTs—and formulations—are available for major depressive disorder). In this situation, the therapist may want to select the one with which he or she is most familiar, the one that will be most acceptable to the patient, or the one that seems to best fit the case (Haynes, Kaholokula, & Nelson, 1999).

When no evidence-based nomothetic formulation is available, the therapist can adapt a template that has been proposed for another disorder or symptom to the case at hand, as illustrated by Opdyke and Rothbaum (1998), who used the empirically supported formulations and interventions for one impulse-control disorder (trichotillomania) as the template for a formulation and intervention plan for other impulse-control disorders for which no empirically-supported protocol is available (e.g., kleptomania and pyromania). Another option for the therapist when there is no nomothetic template to work from (e.g., none has been developed or is not easily available, and, say, the patient has psychogenic vomiting) is to develop a formulation using mainstream empirically supported theories of psychopathology, especially those that underpin many of the currently available ESTs. These general theories include Beck’s cognitive theory, theories of associative and operant conditioning, and theories of emotion and emotion regulation, such as Lang’s (1979) bioinformational theory and Gross’s (1998) theory of emotion regulation. An elegant example is the use of operant conditioning theory as a foundation for the formulation and treatment of a child with migraine headache (O’Brien & Haynes, 1995).

5. Individualize the Template

To individualize the nomothetic formulation, the therapist must collect the details of the cognitive, behavioral, emotional, and somatic aspects of the patient’s problems, as well as details about how the problems are related. Of course, not all problems result from the hypothesized psychological
mechanisms that are the heart of the formulation. Some problems result entirely or in part from biological, environmental, or other nonpsychological factors, as in the case of medical problems, financial problems resulting from an employer’s bankruptcy, or bipolar disorder or anxiety that has a likely biological or genetic basis (in a case in which many family members also have these problems). Also, some fears are rational!

Some problems are the consequence of other problems. For example, as a consequence of using alcohol to escape his depressed mood, John now has an alcohol problem and his liver function is worse. Often causal arrows go in more than one direction: Depression leads to alcohol use, which in turn likely exacerbates John’s depression.

6. Propose Hypotheses about the Origins of the Mechanisms
Here the therapist asks and collects information to generate hypotheses about how the patient developed the schemas, how the patient learned the dysfunctional behaviors or failed to learn the functional ones, how the patient developed an emotion or emotion regulation deficit, and how the patient acquired a biological or genetic vulnerability. To do this, the clinician will collect a family history of psychiatric disorder, as well as a family and social history that identifies key events and factors in the patient’s upbringing and development.

7. Describe Precipitants of the Current Episode of Illness or Symptom Exacerbation
To obtain information about precipitants and activating situations, the therapist can ask the patient and/or someone who is close to the patient to describe the sequence of events leading up to the presenting problems. As the individual does this, the therapist will be thinking about the proposed mechanism hypotheses, in an effort to tie together or link in some logical way the precipitants and the mechanisms. A. T. Beck (1983) discusses this issue very elegantly, proposing that interpersonal loss and rejection would be expected to precipitate depression in patients who have schemas relating to dependency, whereas failure would be expected to precipitate depression in patients who hold schemas relating to failure and loss of autonomy.

After walking through these seven steps, the therapist will have the information needed to write a formulation of the case.

APPLICATION TO PSYCHOTHERAPY TECHNIQUE
The case formulation guides the therapist’s decision making throughout the treatment. Because as part of formulating the case the therapist collects a comprehensive Problem List, the formulation helps the therapist adapt the
nomothetic evidence-based CB formulations and therapies, which usually target a single disorder, to the multiple-problem patient (most patients!). The formulation also guides intervention in the therapy session. Descriptions of John’s problems using a CB format that entailed describing problems in terms of their primary emotions, cognitions, and behaviors showed that John’s behavioral avoidance and passivity were aspects of most of the problems on his Problem List, including the problems of noncompliance with his medical care, social isolation and unassertiveness, depression, and alcohol abuse. The formulation thus cued John’s therapist to target John’s passivity and avoidance early and often.

To use the model to guide clinical decision making in the therapy session, the therapist develops a formulation of a particular instance of a problem behavior or symptom that guides intervention to address that behavior or symptom. This formulation, which might be called a situation-level formulation, is based on detailed assessment of the situation itself, but also on the symptom, disorder, problem, and/or case-level formulations developed earlier. Thus, when the therapist learned that John discontinued his antidepressant medications without discussing the matter with anyone (including the therapist), the therapist's initial hypothesis about this behavior flowed out of the case-level formulation that had already been developed, which offered the therapist the initial hypotheses that John’s behavior resulted from his schema about the future as hopeless (and thus treatment as ineffectual), or from his schemas that he is a wimp if he needs medications, or that others (which may include the therapist) will attack and criticize him if he cannot recover without medications or is unhappy about side effects.

The case formulation can even help the therapist identify distortions in the self-report progress data. Self-report data such as the Beck Depression Inventory (BDI), which John’s therapist collected weekly to monitor John’s progress, are so transparent that they are easily manipulated. Based on the formulation’s proposal that John fears being criticized and rejected by others when they are not pleased, John’s therapist was aware that John might tend to underreport symptoms on the BDI in order to please the therapist and therefore evaluated his weekly BDI scores as possibly biased downward and collected additional data to assess the validity of the BDI data and to monitor John’s progress in therapy.

A CB case formulation is especially helpful when the therapy is not going well. For example, John’s therapy progressed in fits and starts. He failed to follow through with homework assignments, frequently canceled appointments at the last minute, was unable to suggest a single suitable treatment goal, and, in general, was not meaningfully engaged in the therapy. Upon reviewing the formulation, the therapist hypothesized that John’s schema about himself (“I’m a wimp”) and others (“Others are critical and rejecting”) might be contributing to the therapeutic impasse. The therapist introduced to John the suggestion that perhaps he was unable to
commit to a course in therapy because he feared the therapist would put him down and view John as weak and a wimp if he admitted he had some problems with which he wanted help. John acceded that this might be true. To address this issue, the therapist suggested that they examine the advantages and disadvantages of assuming the therapist would act in this way. A session spent on this exercise opened the door to some cognitive restructuring exercises focused on this problematic belief and to a plan that periodically John would “test” the therapist by stating, for example, that he was having trouble understanding the therapist (when in fact he understood him quite well) to see whether the therapist would become frustrated and impatient with John. Prescribing this behavior was particularly helpful in that John tended to test the therapist and others anyway. Using these strategies, John gradually became more engaged in the therapy and made good progress.

The CB therapist always includes the patient in the process of developing the formulation and using it to guide intervention, relying on what Padesky (1996) calls shoulder-to-shoulder case conceptualization. There is some evidence that a shared formulation contributes to therapeutic success (see the research review below). We recommend presenting the formulation and intervention plan in pieces, seeking the patient’s input at each step rather than laying out the complete formulation in one fell swoop, which can be overwhelming and alienating.

**CASE EXAMPLE**

Here we present the information John’s therapist obtained as he carried out the “Steps in Case Formulation” described previously.

1. Obtain a Comprehensive Problem List

   **Suicidal Thoughts and Urges**

   John reports suicidal thoughts (e.g., “What’s the point, there’s nothing that can be done for me,” “I just want this whole thing to be over,” “If this is life, show me the exit.”) that are typically triggered by setbacks in his medical condition. The frequency and intensity of his suicidal thoughts and urges have increased over the last 6 months as his medical condition has deteriorated. A couple of times each month, John checks the Hemlock Society webpage but denies that he has decided on a plan or has means to act on his urges.

   **Hepatitis C**

   In 1990 John was injured in an automobile accident and received a blood transfusion which infected him with the hepatitis C virus. Although John is
receiving interferon therapy, it does not appear that he is benefiting. His liver is moderately cirrhotic, and many days he feels quite ill. John’s condition is life-threatening, and if it worsens, a liver transplant may be needed. John experiences several uncomfortable symptoms associated with his hepatitis C and interferon therapy, including flushing, dizziness, fatigue, and tremors.

**Poor Medical Adherence**

John has an extensive history of poor collaboration with his medical team. His nephrologist has suggested that John consider alternative therapies for his hepatitis C, some of which are experimental, but John will not discuss these alternatives with his physician, worrying that if he asks questions about them “the doc will think I’m a whiner and give up on me.” In addition, John refuses to follow treatment recommendations if they involve meeting others, such as attending a hepatitis C support group, because “only losers go to those support groups” and because he experiences significant anxiety in social situations. John also refuses antidepressant medication because he believes that “it won’t work” and the decision to use medications “just proves I’m a total loser.” John seldom asks his physicians questions about their recommendations or directly refuses to accept the recommendations; instead, he simply fails to follow them.

**Depressive Symptoms**

John reports sadness, feelings of worthlessness and hopelessness, anhedonia, difficulty doing anything, fatigue, and disruptions in sleep and appetite, scoring 32 (severe depression) on the BDI (Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961). John has few contacts with others, mostly sitting at home surfing the Internet or participating in chat rooms. He does not engage in pleasurable activities because he predicts, “It won’t be fun anyway,” and because he is often fatigued due to his medical condition.

**Social Anxiety and Social Isolation**

John reports that social situations make him extremely anxious. He has never dated and has only one or two childhood friends whom he seldom sees. Because of his social anxiety, he is unwilling to join a hepatitis C support group, meet regularly with his physician and work closely with his physician, to address his medical situation or consider other medical interventions that would involve interactions with others. On several occasions, John has run out of medication but would not call his physician for a refill or even call in a refill to the pharmacy because he was too anxious to make the call. His Social Phobia Scale (Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992) score = 47, and he rates as extremely true, “I fear I may
blush when I am with others,” “I worry about shaking or trembling when I'm watched by other people,” or “I get panicky that others might see me faint, or be sick or ill.” John believes that he is a “geek” and that he is a poor conversationalist, although his social skills as assessed informally in the therapist’s office appear to be within normal limits. He thinks of others are far more socially skilled than he is and that they are “just waiting to call me on my stuff.” Compounding John’s social anxiety, he experiences a variety of physical symptoms (sweating, dizziness, flushing) secondary to the hepatitis C and interferon therapy which activate his social worries.

Unassertive Behavior

John is not assertive in his personal and professional relationships. For example, he takes on web design projects that he knows he will not be able to complete rather than negotiate an appropriate timeline with the employer. As a result, he frequently fails to complete projects on time, resulting in difficulty securing and keeping web design jobs. He is not receiving optimal care for his medical condition because he is unable to ask for changes in his treatment or to advocate for alternative treatments that he has researched. His unassertive behavior is driven by thoughts such as “they’ll think I’m a whiner,” or “they’ll just get upset with me and it will be even worse then.”

Alcohol Abuse

John drinks four to five glasses of wine each day, usually in the evenings. John denies a family history of substance abuse, blackouts, driving under the influence, or financial or legal problems as a result of his alcohol use. However, he continues to drink in spite of the fact that the physician has repeatedly pointed out that drinking is jeopardizing his liver function given his chronic illness (hepatitis C). John reports that he continues to drink because he has nothing else to do and “I’m doomed anyway, what’s the point of stopping.” John refuses to consider treatment for his substance abuse because it would involve anxiety-provoking social contacts; he labels people who attend Alcoholics Anonymous (AA) meetings as “a bunch of whiny losers.”

2. Assign a Five-Axis DSM Diagnosis

John’s DSM diagnosis is as follows:

- **Axis I**
  - Social anxiety disorder, generalized type
  - Major depressive disorder, recurrent, severe
  - Dysthymic disorder, early onset
  - Alcohol abuse
3. Select an “Anchoring” Diagnosis

John’s anchoring diagnosis is social anxiety disorder.

4. Select a Nomothetic Formulation of the Anchoring Diagnosis

The nomothetic formulation of social anxiety disorder (Clark & Wells, 1995) (Rapee & Heimberg, 1997) assumes that social anxiety results from the interplay of an individual's biological and psychological vulnerabilities with social, cultural, familial, and biological stressors. Social anxiety disorder is characterized by avoidance of social situations due to excessive and exaggerated fear of negative evaluation by others accompanied by strong physiological arousal and distress. At times, the socially anxious individual fears that his or her physical symptoms of anxiety are the focus of scrutiny, and he or she uses safety behaviors (e.g., wearing turtleneck sweaters to hide flushing) to cope. These safety behaviors and avoidance of social situations prevent the individual from obtaining evidence that would disconfirm his cognitive misappraisals.

Other relevant nomothetic formulations: None.

5. Individualize the Template

To carry out this step, the therapist spelled out details of the key biological/somatic, behavioral, and cognitive factors of John’s problems.

Biological/Somatic Factors

The physical symptoms that John experiences when he's anxious and which trigger anxiety/activate his schemas include flushing, dizziness, fatigue, and tremors. Fatigue is a piece of both his anxiety and depression. These symptoms are also associated with his hepatitis C and interferon therapy.

Behavioral Factors

The key behavioral aspects of John’s difficulties are avoidance behaviors, including failure to assert himself with friends, customers/clients of his web business, and physicians. He does not initiate social contacts despite loneliness; he has never dated although he would like a relationship. He avoids
going to parties or speaking on the telephone. He avoids signing his name or writing in public for fear that others will notice his hand tremble.

Safety behaviors (behaviors John exhibits in order to prevent negative evaluation by others) include wearing dark shirts so that if he sweats, it is less noticeable, and holding something in his hands when he is speaking to people so that if his hand trembles, it is less noticeable.

**Cognitive Factors**

The cognitive aspects of John’s problems are the following:

- **Schema**: “I’m a loser, whiner, geek, wimp, helpless.”
- “Others are critical and rejecting.”
- “World is bleak.”
- “Future is uncontrollable and hopeless.”
- Conditional assumptions: “If I ask for what I want, people will put me down.”
- Typical automatic thoughts: Depression and suicidal urges are caused by thoughts such as “What’s the point, there’s nothing that can be done for me,” “I just want this whole thing to be over,” “If this is life, show me the exit.” Unassertive behavior is driven by thoughts such as, “They’ll think I’m a whiner,” or “They’ll just get upset with me and it will be even worse then,” and “Other people are more socially skilled than I am and are just waiting to call me on my stuff.”

6. Propose Hypotheses about the Origins of the Mechanisms

To develop hypotheses about the origins of the mechanisms, John’s therapist obtained a detailed family and cultural history that emphasizes events that are likely related to the proposed mechanisms.

John is an only child, born to Japanese parents who immigrated to this country just before his birth. His father came to the United States to attend graduate school and is currently employed as an aerospace engineer and appears to have easily acculturated. John’s mother, on the other hand, has not learned English, largely because she was too shy to seek help or take English-as-a-second language classes; she is largely homebound and accepts few visitors. John reports that he was a very shy child. He did not speak to anyone but his parents and a few close friends until he was 6 years old and spent much time alone playing or reading in his room. His father was seldom around, as he worked many hours and traveled extensively for his job. John remembers his father as highly critical of John, often demeaning him in an effort to motivate John to work harder at school or to go out and socialize (“If you’re smart show me, otherwise shut up.”). When John cried,
his father would call him a “wimp” or a “whiner.” John’s mother was largely unable to protect him because she was very shy, depressed, and dependent on her husband. John’s parents divorced when he was 10 years old and John lived with his mother. His father showed little interest in spending time with John, so John spent most of his time, when not in school, home with his mother. Because John’s mother was shy and depressed, few people came into their home, and she was unable to arrange play dates or other social activities for John.

7. Describe Precipitants of the Current Episode of Illness or Symptom Exacerbation

Although John’s social anxiety appears to be chronic, his current depressive episode appears to be precipitated by his deteriorating medical condition and his view that nothing can be done to help him, as well as his continued social isolation.

John’s therapist used all this information to develop the formulation of John’s case provided on p. 7 above.

TRAINING

Although constructing a case formulation is quite difficult, little is known about how to train clinicians to do this. Therefore, we offer observations based on our own training experiences. We find that trainees come to us for answers to two types of questions about their cases. The first type of question is a “how-to” or technique question, such as “How do I complete a Thought Record?” or “How do I design a behavioral experiment with this client?” The second type of question is a “What do I do if . . . ?” or formulation question, such as “What do I do if the client repeatedly fails to complete his therapy homework?” or “What do I do if the client refuses to set an agenda for the session?” We believe it is essential that we, as teachers, keep the distinction between these two types of questions clearly in mind, and that we teach our trainees to distinguish these two questions. Trainees who understand the distinction will ask clearer questions and thereby increase the likelihood that they will get the help they need. But even more important, trainees who are taught to distinguish between technique and formulation questions will understand the essential role of formulation in CB therapy. Too often, trainees view CB therapy as a string of techniques or strategies that the therapist throws at clients until one of them sticks. Instead, CB therapy is a way of thinking in which the therapist uses CB formulations to understand his client and as a guide to selecting interventions and trouble-shooting when obstacles arise. One of our primary training goals is to get this idea across to trainees.
We have found that training in CB case formulation happens best in a small group where therapists can work together to formulate their own and each others’ cases. We have found that certain typical difficulties arise and that trainees can help one another overcome them.

Trainees often have difficulty making a Problem List, which makes it a good place to begin any discussion of a new case or review of an ongoing case. The most common problems include difficulty obtaining an exhaustive list, especially the tendency to omit medical or “nonpsychological” problems (e.g., financial or legal problems). We encourage trainees to search for problems systematically by considering the domains listed on p. x. Trainees sometimes describe problems in jargon (e.g., “codependency”) or in vague terms (e.g., poor self-esteem or communication problems). The best remedy for both these difficulties is to emphasize the importance of describing the mood, cognitive, and behavioral aspects of problems. Sometimes the trainee does not seem to fully understand all the ramifications of a particular problem for the client. To flesh this out, it is useful to ask the trainee to think about why the client’s problem (e.g., depressed mood) is a problem for her. In response, the therapist may learn that the client is no longer seeing his friends, is about to lose his job because of absenteeism, and has increased his alcohol intake. Surprisingly, sometimes trainees can sit with a client who has obvious problems of self-care and not think to ask about exercise, sleep, diet, or grooming. Yet another problem that trainees encounter when developing a Problem List is the failure to identify problems (e.g., self-harm behaviors or substance abuse) that the client does not wish to discuss or does not perceive as a problem.

Sometimes trainees do not recognize problems that belong on the Problem List because the client appears to have solved it. In this case, it can be helpful for the trainee to learn that some solutions are in fact problems, as in the case of the client who “solves” his problems by avoiding. For example, a trainee presented a short list of problems for a client who had been troubled by a series of panic attacks beginning 15 years earlier. The client identified no other problems. However, when the trainee was asked, “What problems do you know of that the client has already solved himself?” the Problem List expanded to include a number of long-standing avoidant “solutions” that had resulted in the loss of the client’s job and the dissolution of his marriage.

We encourage trainees to generate formulation hypotheses early. This recommendation is supported by evidence collected by Elstein, Shulman, and Sprafka (1978), who, in studies of medical problem solving by physicians, found that “competent physicians begin generating hypotheses in the earliest moments of their encounter with clients” (p. ix). Trainees are often reluctant to offer hypotheses unless they are confident that they are correct. As a result, they offer too few hypotheses or delay offering hypotheses for too long. We suggest that trainees generate formulation hypotheses as early
as the first telephone call from a prospective client or on first meeting him in the waiting room. How might you explain that the client took 2 weeks to return your call about setting up a consultation appointment? Why might the client be standing outside the waiting room with the waiting room door open when you go out to meet him?

In addition, trainees (and experienced therapists!) do not consider enough alternatives and can become overattached to their formulation hypotheses and have difficulty dispensing with a hypothesis that is not useful. To expand the number of alternatives considered in the formulation generation process, we recommend that each case formulation begin with a period of brainstorming in which the therapist offers as many ideas as possible, refraining from judging or editing any hypothesis offered by the group, no matter how silly it may appear. When several hypotheses are generated, the editing process can begin. Even then, it is helpful to keep several hypotheses on the table for a particular case and generate interventions based on each hypothesis. In this way, trainees are reminded that the goal is not to find the “correct” formulation but to become skilled at generating hypotheses and using them to formulate intervention strategies. To address the problem of overattachment to failing hypotheses, we encourage trainees to periodically review treatment progress with the client and to report on this to the supervisor or consultant.

Writing a complete and comprehensive case formulation for every client may not be practical for busy clinicians. However, the process of developing a written formulation is an excellent training exercise. As trainees learn to develop formulations, they may find it helpful to write down the information required for each of the items found in the section “Steps in Case Formulation Construction.” The importance of this skill for trainees is highlighted by the fact that most trainees treat complex and often treatment-refractory clients.

**RESEARCH SUPPORT FOR THE APPROACH**

A handful of studies has examined interrater reliability of CB case formulation, with adequate but not outstanding results (Kuyken, Fothergill, Musa, & Chadwick, 2005; Persons & Bertagnolli, 1999; Persons, Mooney, & Padesky, 1995). As we indicated in our discussion of the qualities of a good CB formulation, we view treatment utility as more important than interrater reliability (in fact, different therapists might have different formulations, but those formulations might still be useful in guiding effective treatment). For that reason, we focus this brief review primarily on the treatment utility of the case formulation, that is, the degree to which the formulation contributes to a good treatment outcome (Hayes et al., 1987). Two uncontrolled trials of the method described here have shown that
treatment of depressed (Persons, Bostrom, & Bertagnolli, 1999) and depressed anxious patients (Persons, Roberts, Zalecki, & Brechwald, 2005) guided by a CB case formulation and weekly progress monitoring have outcomes similar to outcomes of patients treated in manualized standardized treatments in the randomized controlled trials. Going beyond the specific format described here, several types of research designs provide relevant evidence, and we offer some highlights of those here.

A handful of randomized trials comparing outcomes of standardized CB therapy versus CB therapy guided by a case formulation shows that formulation-driven treatment is no different from or sometimes a bit better than standardized treatment on outcome of acute treatment and maintenance of gains (Jacobson et al., 1989; Schneider & Byrne, 1987; Schulte, Kunzel, Pepping, & Schulte-Bahunweg, 1992). No studies show that formulation-driven treatment obtains worse outcomes than standardized treatment. Although the Schulte et al. (1992) finding is frequently reported as showing that patients who received individualized treatment had worse outcomes, we read it as failing to show a difference between individualized and standardized treatment. Schulte et al. (1992) randomly assigned 120 phobics to standardized exposure treatment, individualized treatment, or yoked control treatment. Although a multiple analysis of variance (MANOVA) showed that the three treatment conditions differed significantly at the $p < .05$ level for three of nine outcome measures at posttreatment, these results faded over time (appearing on only two measures at 6-month follow-up, and on none at 2-year follow-up), and no statistical tests examining pairwise comparisons of the three treatment groups, in order to identify which treatment was best and which worst, were presented.

Future studies of the treatment utility of the formulation might examine outcome variables in addition to acute and long-term outcome; we would predict that the use of an individualized case formulation ought to have effects on treatment compliance, the quality of the therapeutic relationship, dropout, and relapse. Two studies of the effects of shared formulation on compliance and dropout, however, have mixed results. Foulks, Persons, and Merkel (1986) showed that patients who viewed the causes of their illness in medical model terms (e.g., neurotransmitter derangement) were less likely to drop out prematurely and noncollaboratively (e.g., without telling the therapist of his or her intentions) than patients who endorsed non-medical model causes (e.g., the evil eye) of their psychiatric illness. Addis and Jacobson (2000), however, failed to find the predicted relationship between the patient’s acceptance of the treatment rationale and homework compliance.

Addis and Jacobson (2000) and Fennell and Teasdale (1987) showed that the patient’s acceptance of the treatment rationale predicts the outcome of treatment. These findings indicate that the patient’s perception that the nomothetic formulation underpinning the treatment is applicable to his
situation contributes to good treatment outcome. This patient–therapist agreement on the formulation is widely viewed as an aspect of the therapeutic alliance (Tracey & Kokotovic, 1989), which has of course repeatedly been shown to predict treatment outcome.

Another relevant literature is the literature on treatment matching, which investigates whether matching treatment to client characteristics leads to better outcomes. This is a large literature with a large number of negative findings (see Dance & Neufeld, 1988). Several (see Addis & Jacobson, 1996) have suggested that reasons for negative findings may include low power and the failure to examine theoretically derived predictions, and this observation is consistent with the observation (Addis & Jacobson, 1996) that prospective studies that test theoretically derived predictions have produced some more positive findings, such as the demonstrations that high-externalizing and low-resistance clients improved more in group CB therapy than did low-externalizing and high-resistance clients (Beutler, Machado, Engle, & Mohr, 1991) and the findings (see reviews by Nelson-Gray, 2003, and Haynes, Leisen, & Blaine, 1997, that functional analysis has good treatment utility in the treatment of severe behavior problems, including self-injurious behavior.

The studies reviewed here converge to provide some support for the assertion that reliance on a CB case formulation can contribute to treatment outcome. However, relatively few studies have been done to examine this question directly. For that reason, it is probably fair to say that the strongest empirical support for the treatment utility of a CB case formulation currently comes from the method’s reliance on evidence-based nomothetic formulations as templates for the idiographic formulation and from the idiographic data that the therapist collects in order to test the clinical utility of the formulation.

NOTE

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REFERENCES


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