

## Testing Case Formulation Hypotheses in Psychotherapy: Two Case Examples

Jacqueline B. Persons, *San Francisco Bay Area Center for Cognitive Therapy*  
Victoria Lemle Beckner, *San Francisco Group for Evidence-Based Psychotherapy*  
Michael A. Tompkins, *San Francisco Bay Area Center for Cognitive Therapy*

*We describe two cases that illustrate and demonstrate the effectiveness of a case formulation–driven approach to psychotherapy in which the therapist, in collaboration with the patient, develops a hypothesis (formulation) about the psychological mechanisms that cause and maintain the patient's difficulties, uses the formulation to guide intervention, and collects data to test the formulation and evaluate the effectiveness of the intervention plan. As shown by the cases reported here, a key strength of this collaborative empirical process is that it enables the patient and therapist to quickly determine when a treatment is failing and take action to rescue it.*

A case formulation–driven approach to psychotherapy calls for the therapist to develop a hypothesis (formulation) about the factors that cause and maintain the patient's presenting problems, use that hypothesis to generate intervention strategies and guide clinical decision-making, and collect data to test the hypothesis and evaluate the effectiveness of the interventions that flow out of the formulation hypothesis (Kuyken, Padesky, & Dudley, 2009; Persons, 2008). All of this work is done collaboratively with the patient. This idiographic empirical approach to psychotherapy exemplifies the scientist-practitioner model described by Barlow and colleagues (Hayes, Barlow, & Nelson-Gray, 1999), and the idiographic approach to clinical work described by behavior analysts (Haynes, O'Brien, & Kaholokula, 2011). Thus, *collaborative empiricism* is at the heart of a case formulation–driven approach to clinical work.

Although treatment guided by an individualized case conceptualization has a long historical tradition in behavior therapy, and is the dominant mode of work with certain populations (e.g., the work of Iwata, Pace, et al., 1994) with severely disordered children), it is not prominently represented in the treatment literature for the anxiety

and mood disorders (except Mumma, 2004; Mumma & Mooney, 2007a, 2007b; Wells, 2006), which currently emphasizes developing and collecting efficacy and effectiveness data for standardized treatment protocols that treat single DSM disorders. As a result, few detailed descriptions and little empirical support for an individualized case formulation–driven mode of work in psychotherapy with adult cases of patients with anxiety disorders are available. We present here reports of the treatment of two cases of patients with anxiety disorders that provide detailed descriptions of the use of a case formulation–driven approach to treatment, and also provide some data supporting the effectiveness of this collaborative empirical approach to cognitive-behavior therapy for anxiety in adults. As these cases show, a case formulation–driven mode of work provides a framework for clinical decision-making that is particularly useful when the patient's initial response to treatment is poor.

### Case: Ms. "V"

Ms. V was a 26-year-old female from a close-knit Korean-American family, employed in marketing at a high technology firm. She presented with anxiety and depression symptoms, pervasive lifelong worry, and the strong tendency to overanalyze situations and decisions. She described her childhood as easy and uneventful, yet felt she had internalized her mother's anxious and overprotective style. The therapist (V.L.B.) carried out a semistructured interview and determined that the patient met criteria for generalized anxiety disorder and major depressive disorder, supported by moderate-to-severe elevations on several

---

*Keywords:* case formulation; collaborative empiricism; progress monitoring; case examples

1077-7229/13/399–409\$1.00/0

© 2013 Association for Behavioral and Cognitive Therapies.  
Published by Elsevier Ltd. All rights reserved.

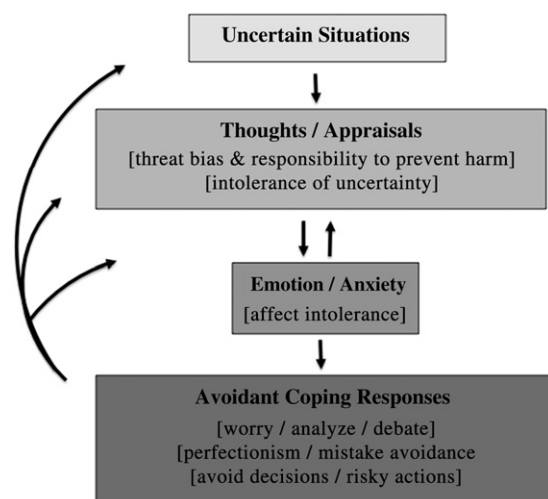
self-report measures, including a score of 22 on the Burns Anxiety Inventory (Burns & Eidelson, 1998), 67 on the Penn State Worry Questionnaire (Meyer, Miller, Metzger, & Borkovec, 1990), and a mild-moderate score of 16 on the Beck Depression Inventory (Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961). Ms. V's most impairing and distressing symptom was her difficulty making important life decisions: she felt stuck in an unfulfilling job, ambivalent about her boyfriend, and in a state of constant debate about staying with or leaving both.

In formulating the initial case conceptualization with the client (see Figure 1), the interview and Obsessive Beliefs Questionnaire (OBQ-44; Obsessive Compulsive Cognitions Working Group, 2005) suggested a number of interconnected mechanisms driving her symptoms (mechanisms in parentheses below). Ms. V demonstrated a tendency to interpret current and future events as potentially threatening (threat bias), especially ambiguous or uncertain situations (low tolerance of uncertainty), and a strong sense of responsibility to control or prevent the impending harm (responsibility). This focus on threat functioned to activate the client's anxiety alarm system. Without the ability to tolerate this aversive state (affect intolerance), the anxiety drove the client to favor unhelpful coping responses designed to mitigate the perceived danger. Thus, Ms. V would try to manage the threat mentally by repeatedly analyzing what the most desired/least harmful decision might be (worry/analyze/debate), in an attempt to get it "right" (perfectionism), and thus avoid a painful outcome. However, given that future outcomes are always uncertain (one can never know whether a different job or boyfriend might bring greater happiness or worse misery), this inherent lack of a "perfect" or guaranteed harm-free choice trapped her in "debate mode" and avoiding

decisions. The client could see how these safety strategies kept her stuck in a cycle. Because she avoided perceived risk, she rarely had the corrective learning experience that her threat appraisals were exaggerated and she was in fact competent to handle uncertain situations and the typical challenges that might arise from any action. An even higher cost than living with this anxiety cycle was her lack of engagement in her life as she sat on the fence. The therapist conceptualized her depression as secondary to this paralysis, and predicted it would improve as the two worked on the client's anxiety-avoidance cycle.

The patient felt that this formulation fit her well, and the therapist designed the initial treatment to target the presumed mechanisms using mostly cognitive behavioral interventions, but also integrating mindfulness exercises drawn from Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). Although Ms. V's therapist drew these mindfulness techniques from ACT, they are also quite congruent with contemporary cognitive therapy (e.g., see Clark, 1986; Rachman, 2003). The treatment was carried out in the context of developing a supportive and collaborative therapeutic relationship to support the patient in her difficult and courageous work. The goal was to increase the client's acceptance of uncertainty and anxiety, so that she might resist her avoidant coping and instead get out of her head and take risks in the service of actively living her life. In the process, her experiential evidence would reshape her threat beliefs to be more realistic.

The therapist first provided psychoeducation about intolerance of uncertainty and anxiety: how worry and avoidance function as safety behaviors that bring temporary relief from anxiety yet maintain it in the long run. The therapist then trained the client in techniques for identifying and detaching from her threat thoughts (thought monitoring, mindfulness of thoughts) and encouraged the client to engage in behavioral experiments in order to collect evidence challenging her catastrophic interpretations (cognitive restructuring). The therapist also spent part of every session having the client practice mindfully sitting with anxiety (which was either present in the session or evoked imaginably), with attention focused on allowing the affective somatic sensations. These mindfulness exercises functioned as both interoceptive exposures and emotion-coping practice of accepting difficult internal states (rather than resistance, control or escape) so that the client might be more likely to choose helpful action over avoidance. Formal exposures were also employed: imaginal exposure for worse-case scenarios (e.g., client leaves her job and becomes unemployed for a year), and behavioral exposures facing uncertain or risky outcomes (ordering food she had never tried, doing a mediocre job on a work project, and being assertive with the therapist and her boyfriend, risking their anger). Putting these skills together, the client practiced noticing her catastrophic appraisals and how her worry and



**Figure 1.** Initial conceptualization of the case of Ms. V (target mechanisms are in brackets).

analysis would kick in as a coping response, reminding herself that this behavior was an attempt to escape her anxiety and control an exaggerated threat, and instead allowing the anxiety and uncertainty to be present while focusing her attention on the actions she wanted to take in the present.

Although the client was reluctant to fill out a weekly symptom measure, she did answer a weekly alliance and progress rating that was included in the homework form, which helped the therapist monitor the therapeutic relationship and the client's confidence in the treatment. She agreed to complete the symptom measures after 3 and 6 months.

After 3 months of weekly therapy, the therapist and client assessed the client's progress. The therapist noted that rapport was consistently strong, and the client had good insight and agreement on the formulation and treatment but was somewhat passive in session, inconsistent in completing homework, and still struggling with decisions. Ms. V reported that she felt somewhat better and that her thinking had "changed," yet she still felt she was often "in her head." Her outcome measures showed a more stark and discouraging reality: worry had dropped somewhat, but there was little change in anxiety and depression (see Figure 2). The data strongly suggested that the therapy wasn't helping.

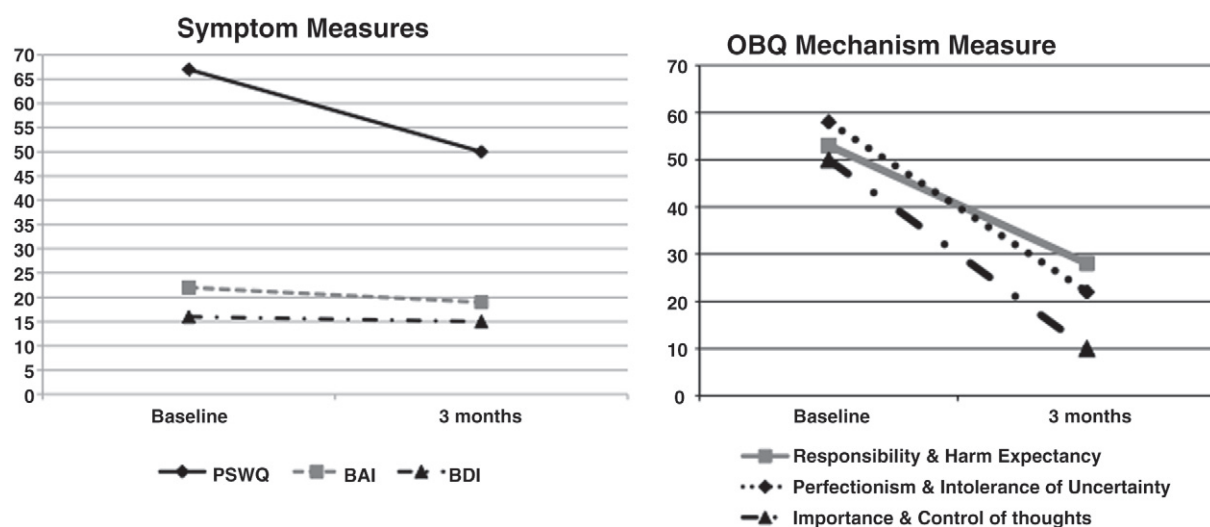
The question then became whether (a) the conceptualization of Ms. V's case was correct (it identified the right mechanisms) but the therapy wasn't targeting the mechanisms effectively, or (b) an important mechanism was missing and thus the conceptualization and treatment needed revision. Here the client's mechanism scores provided some very helpful information (Figure 2). Despite little change in her outcome measures, she showed a significant drop on all three OBQ scales: harm

expectancy and responsibility, perfectionism and intolerance of uncertainty, and importance and control of thoughts.

The treatment was changing many of the target mechanisms, yet she wasn't getting much better! This suggested the second explanation was more likely: the formulation was missing an important mechanism.

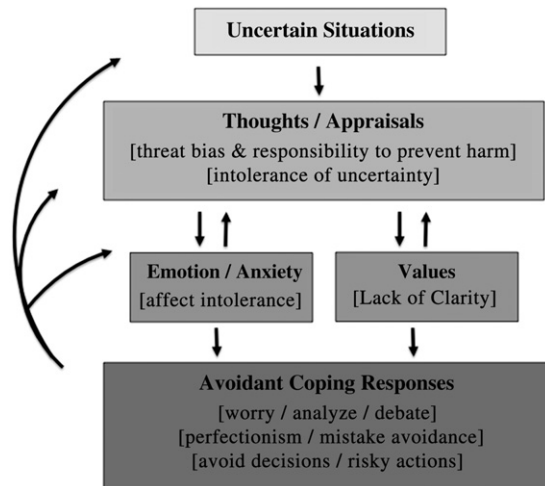
In exploring the progress data with the client, a new hypothesis emerged. Although the client understood the rationale for the exposures and the behavioral experiments, her motivation to reduce anxiety in the long run wasn't strong enough to compete with her desire to escape it in the short run. When she talked about it in session, she seemed listless, shrugging her shoulders. It slowly became clear that Ms. V's passivity and half-hearted attempts in therapy weren't just avoidance: she lacked a positive sense of what she wanted to move *toward* in her life. Because so much of her daily focus had been on defensive strategies for minimizing threat, she had not thought much about what really mattered to her.

So we used this information to revise the formulation, hypothesizing that a lack of clear values (and related goals) was an additional mechanism undermining her ability to make decisions and take action (Figure 3). This idea then suggested a new treatment intervention from ACT: values clarification and value-driven action. We began exploring what Ms. V would want her life to be about if anxiety wasn't her focus—activities that drew on her strengths and had meaning to her, and moments she felt most present and alive. What emerged was her desire to understand and incorporate more of her culture into her identity and activities, to connect with others in a way that felt more authentic to her, and to use her enthusiasm



Note. PSWQ = Penn State Worry Questionnaire, BAI = Burns Anxiety Inventory, BDI = Beck Depression Inventory.

**Figure 2.** Scores on measures of symptoms and mechanisms after 3 months of treatment for Ms. V.



**Figure 3.** Revised conceptualization of the case of Ms. V (target mechanisms are in brackets).

and skills to contribute to her various social and work communities. This awareness generated a clarity and spark in the client that was new. Once the therapy exposures and new behaviors were reframed as having a larger purpose (beyond treating her anxiety), she became more engaged and committed in therapy and her life.

After 3 additional months of treatment based on the new formulation, progress was again assessed. Ms. V's anxiety and depression had finally dropped into the borderline to normal range (BAI = 8, BDI = 7), and her worry had decreased further (PSWQ = 41). What was equally notable about Ms. V was that she had *decided to take action* on several fronts. A month prior she had quit her job and was actively applying and interviewing for positions at nonprofits that assist refugees, which fit better with her values. She was also practicing “putting both feet in” her relationship with her boyfriend—bringing a more active and authentic stance to their interactions, sharing more of her cultural heritage with him, and allowing herself to become more emotionally attached. While these changes felt risky, she also felt excitement to be doing what mattered most to her. She wrapped up therapy the following month.

The case of Ms. V is a good example of how tracking the client's symptom data enabled the clinician to see clearly that the therapy wasn't working after 3 months—it might have been difficult otherwise to see this, given the strong therapeutic alliance and the client's vaguely positive report. The mechanism data, coupled with the symptom data, helped the therapist revise the conceptualization and create a more effective treatment, thus reducing Ms. V's symptoms and bringing meaningful change to her life.

### Case: Ms. “M”

The patient was a 30-year-old married female dental hygienist who lived with her husband, who was a music

teacher and amateur musician. At his insistence, she sought treatment for what she called her “crazy jealousy.” The patient reported that she had always been jealous about her husband's friendships with women—even when they were first dating. Her jealousy had caused them to argue on occasion, but in the past, her anxiety and jealousy had always faded in a few days. However, now that her husband was spending more time with younger women, often teaching or rehearsing with them, she was in a state of near panic almost every day, and her tantrums and incessant questioning of her husband about his whereabouts had caused him to give her an ultimatum: You get help or this marriage is finished.

Together, the clinician (M. A. T.) and patient developed the following list of problems.

- *Relationship distress* — the constant texting, questioning, and upset on occasions when she is unable to accept and be soothed by her husband's reassurance that he has not betrayed her have created considerable distress in her relationship. Her husband was avoiding spending time with the patient because they always seemed to argue when they were together; his avoidance amplified her anxiety and led to more checking and questioning.
- *Feels jealous, anxious, and worried* — she worries excessively about her husband's activities, and feels anxious and panicky when he is teaching female students or practicing with his string quartet, which includes two young female violinists. At the same time, when she stops to consider whether she is truly afraid that he has betrayed her, the patient is confident that her husband is faithful, and she has no objective evidence that he has been unfaithful.
- *Sleeplessness* — difficulty falling asleep most nights, and about 50% of the time awakens during the night and is unable to fall to sleep. She has cut back on her caffeine consumption, and uses over-the-counter sleeping medications at times, but continues to have sleep problems. She states that she believes that all of her sleep difficulties result from her anxiety about her husband's behavior.
- *Repeatedly and frequently checks what husband is doing* — checks her husband's social network page, texts him and becomes upset if he does not respond immediately, questions him about where he has been and with whom. She checks with her friends about whether they believe her husband is faithful. She panics when a friend tells her, “Well, if your gut tells you he's cheating, he must be cheating.”

Based on the problem list and the patient's history, in order to get more information about the symptoms and to aid with developing a case formulation, the clinician



selected the following measures to administer to the patient: Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990), Beck Depression Inventory (BDI; Beck, et al., 1961), Burns Anxiety Inventory (BAI; Burns & Eidelson, 1998), and the Obsessive Beliefs Questionnaire (OBQ-44; Obsessive Compulsive Cognitions Working Group, 2005). The patient scored 65 (high) on the PSWQ, (35) low severe on the BAI, 22 (low moderate) on the BDI, and 68 (highly elevated) on the scale of the OBQ-44 that assesses intolerance of uncertainty and perfectionism. The clinician scored the OBQ-44 with an Excel spreadsheet that presented the patient's scores relative to nonclinical scores. (The OBQ-44 and the Excel scoring spreadsheet are available at [www.sfbacct.com](http://www.sfbacct.com)).

Based on the self-report scales and a semistructured interview, the clinician diagnosed the patient with generalized anxiety disorder (GAD) and developed an initial case formulation based on Borkovec's (1994) nomothetic formulation of GAD, which proposes that worry thoughts serve an avoidance function, allowing the worrier to avoid emotional processing of aversive emotions and material (e.g., the high distress and fear triggered by the patient's belief that "my marriage might fail."). Worry is negatively reinforced because in the short run it reduces the somatic arousal produced by the emotional processing of images of threat material. However, it is maladaptive because it prevents full emotional processing. The patient's other avoidance behaviors and safety behaviors (e.g., compulsive checking, reassurance seeking) also prevented full emotional processing of threat material. Borkovec's formulation also identifies the somatic components of the disorder (e.g., muscle tension, irritability, hypervigilance) as a treatment target.

To identify the idiographic details of the patient's worry thoughts and the beliefs that triggered the worry thoughts, the clinician and patient worked through a series of thought records. Common automatic thoughts they identified included, "What if he is out with one of his female friends?" "What if he is lying to me?" and "What if my marriage is going to fall apart?" The central beliefs that, when triggered, led to worry thoughts, appeared to be, "My marriage might fail and that would be a disaster," and "I might lose the respect of my friends and that would be a catastrophe." The clinician also worked with the patient to identify the details of her safety behaviors (e.g., incessant requests for reassurance). Safety behaviors are central features of the GAD formulation and were a central problem on the patient's problem list because these behaviors frustrated her husband and caused much of the couple's distress.

The clinician and patient then constructed a formulation map (see Figure 4) that viewed her "crazy jealousy" as caused and maintained by excessive and uncontrollable cognitive misappraisals, safety behaviors, somatic arousal,

and beliefs that her marriage might fall apart and she would lose the respect of her friends and others who were important to her.

Based on the formulation map, the therapist developed treatment interventions that targeted the patient's beliefs that her marriage might fail and her friends lose respect for her, the cognitive misappraisals that occurred when these beliefs were triggered, her avoidance of the emotions that arose when her beliefs were triggered, somatic arousal, and the checking and reassurance-seeking behaviors. The clinician instructed the patient in focused breathing and progressive muscle relaxation, taught her skills to identify and correct the cognitive misappraisals that maintained her anxiety, and taught her to resist safety behaviors, such as checking behaviors. The clinician helped the patient engage in imaginal exposure to the failure of her marriage and the loss of her friends' respect, and the emotions she would experience if these catastrophic outcomes occurred.

The clinician and patient also discussed the benefit of individual versus couple therapy. The patient preferred to begin individual therapy rather than couple therapy because she believed that the relationship distress was primarily due to her jealousy rather than to something fundamentally wrong in her relationship. However, the clinician recommended collateral meetings with her husband in order to assist him to respond more adaptively to her anxious responses. The patient agreed with this plan, and the husband indicated that he was open to meeting with her and the clinician at any time.

To track the patient's progress in therapy, the patient completed the BDI, BAI, PSWQ, and OBQ before each session, and the clinician entered the patient's scores into the Excel spreadsheet at the beginning of the session while she watched. The patient was quite curious, as was the clinician, about her progress as indicated by her scores on these measures. Reviewing the measures with the patient engaged her in a collaborative approach to solving the problems for which she sought help. She seldom failed to complete the measures, and she typically entered the session with measures in hand, eager to review her scores and discuss her progress.

After six sessions, during which the patient diligently practiced the skills she learned, the patient and clinician reviewed her progress. The patient reported that her jealousy was mostly unchanged, and the progress monitoring data showed only modest decreases on the symptom measures of anxiety, worry, and depression (BAI, PSWQ, BDI). The scale measuring intolerance of uncertainty and perfectionism also showed very little change, suggesting that treatment was not targeting some of the mechanisms that the therapist hypothesized were underpinning and maintaining the patient's symptoms. (Although the interventions did not target intolerance of

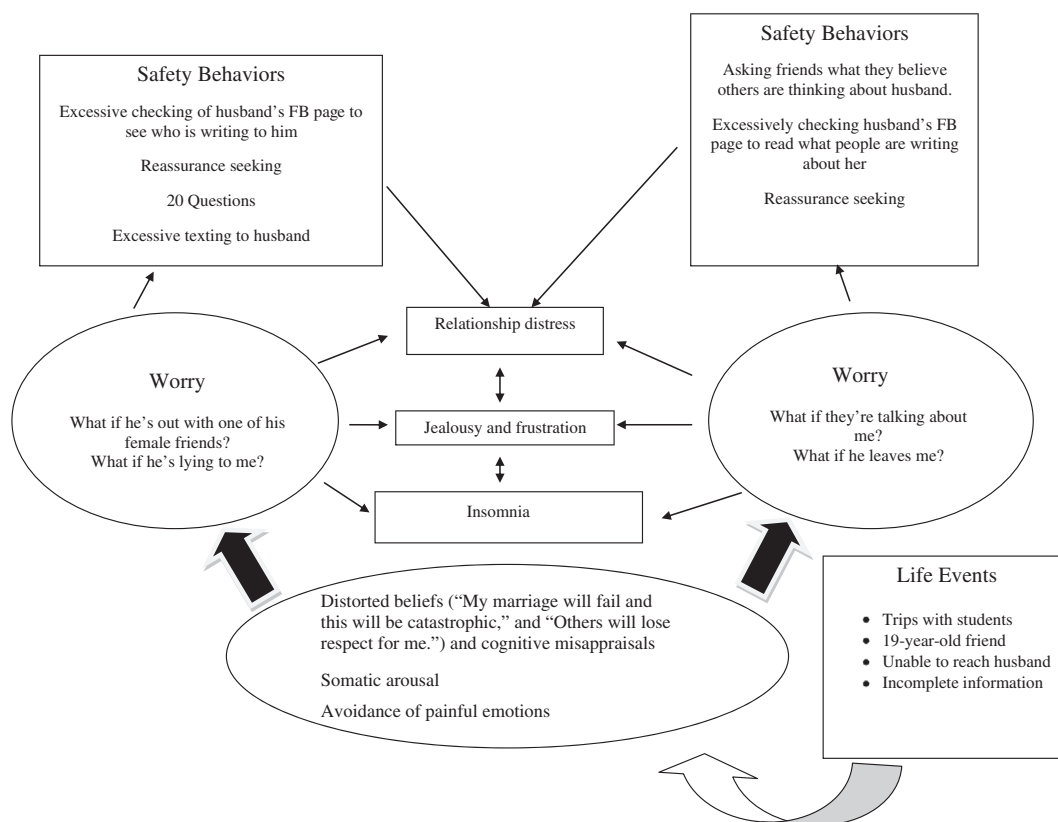


Figure 4. Initial formulation map for Ms. M.

uncertainty and perfectionism directly, the therapist expected that if the patient became more accepting of the notion that the failure of her marriage, while not desirable or pleasant, was not an absolute catastrophe, she would also show improved tolerance of uncertainty and less perfectionism.) Furthermore, the fact that the patient reported low anxiety during the imaginal exposures that focused on her fears of losing her marriage and what people might think of her also suggested that treatment was not targeting the core mechanisms causing her distress.

In response to these data, the clinician worked collaboratively with the patient to collect more assessment information to see if it might lead to a revised formulation that might suggest different treatment targets. The clinician reviewed the patient's early history a second time, and this time the patient recalled some childhood checking behavior and excessive concerns about the safety of her younger siblings. The patient also reiterated her frustration that she could not put aside her doubts about her husband's fidelity; that is, she emphasized the fact that the jealous thoughts were intrusive. These additional details about the patient's symptoms suggested that the symptoms might be features of OCD rather than

GAD, and led the clinician to make a change in the diagnosis; he diagnosed the patient with obsessive-compulsive disorder (OCD) instead of GAD.

The clinician and patient reviewed several past thought records and, with the OCD hypothesis in mind, the clinician assisted the patient with the downward arrow technique to identify a core belief. Although the clinician and the patient had completed the downward arrow technique before, the OCD diagnosis prompted the clinician to ask the patient what *having* the thought meant—rather than what the thought itself meant. That is, the clinician asked, "What does it mean to you that you have the thought, 'What if he's lying to me?'?" It became clear that the patient was more afraid of the consequences of *having the jealous thoughts* (I won't be able to stop thinking about them and will go crazy) than of the consequences described by the thoughts themselves (my marriage will be ruined). This feature of the problem is consistent with the cognitive model of OCD, which describes the sufferer's anxiety as arising from problematic appraisals about certain thoughts (Rachman, 1997; Salkovskis, 1989; Wilhelm & Steketee, 2006) rather than from the thoughts themselves. That is, it became clear that the patient's core fear was of uncertainty, not of losing her marriage or the respect of others. This hypothesis was

consistent with the patient's low fear ratings during imaginal exposures that targeted her fears of losing her marriage or what people might think of her.

This case example highlights an important role of attending to the nomothetic formulation for a particular diagnosis in case formulation-driven treatment. In case formulation-driven treatment, it is the therapist's hypothesis about the mechanisms causing the symptoms (the formulation) that guides treatment, not the diagnosis. However, diagnosis often is a sound place to begin the formulation process because a diagnosis directs the clinician to a particular nomothetic formulation that orients the clinician to a particular individualized formulation. Thus, in this case, a particular downward arrow intervention helped the therapist identify that the cognitive mechanism driving the symptoms was not the thoughts as misappraisals themselves (e.g., overestimating the likelihood that her husband would be unfaithful), but the patient's *appraisals* of the thoughts, that is, the meaning to the patient that she had jealous thoughts (e.g., "I won't be able to stop thinking them and this will drive me crazy"). The cognitive formulation of OCD carefully specifies that it is not the intrusions themselves but the appraisals about the intrusions that are the mechanism causing the OCD symptoms and are therefore the target of treatment. Thus, revising the

diagnosis helped the therapist revise the formulation of Ms. M's case.

The process of collecting more assessment data, revisiting the formulation, and brainstorming ideas about what might explain her poor response to treatment was a collaborative enterprise. The patient was fully engaged in the process. Furthermore, the patient was not upset with the clinician, nor was she overly upset about her lack of treatment progress. Instead, she remained curious, engaged, and focused. When the clinician asked about this, the patient replied, "I've always felt like we were in this together. I know we'll figure this out." The patient was a true partner in not only the process of getting better but also in the process of solving the problem of why she was not getting better.

The clinician used the new information to develop a revised formulation of the case, as depicted in Figure 5. The revised case formulation identified intolerance of uncertainty as the key mechanism that maintained the patient's jealousy. Recent conceptualizations of maintaining variables for both GAD and OCD include intolerance of uncertainty (Dugas, Gagnon, Ladouceur, & Freeston, 1998; Holaway, Heimberg, & Coles, 2006; Tolin, Abramowitz, Brigidi, & Foa, 2003), and the intolerance-of-uncertainty hypothesis was also supported by the patient's elevated score on that scale of the OBQ-44.

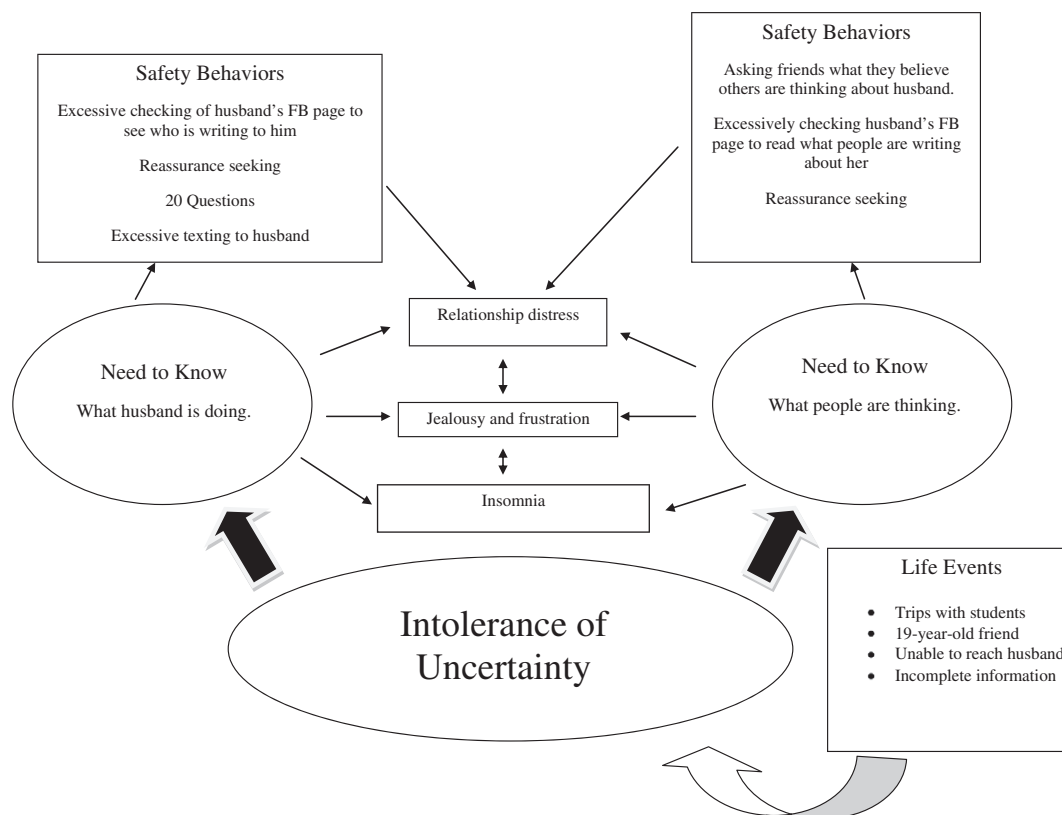
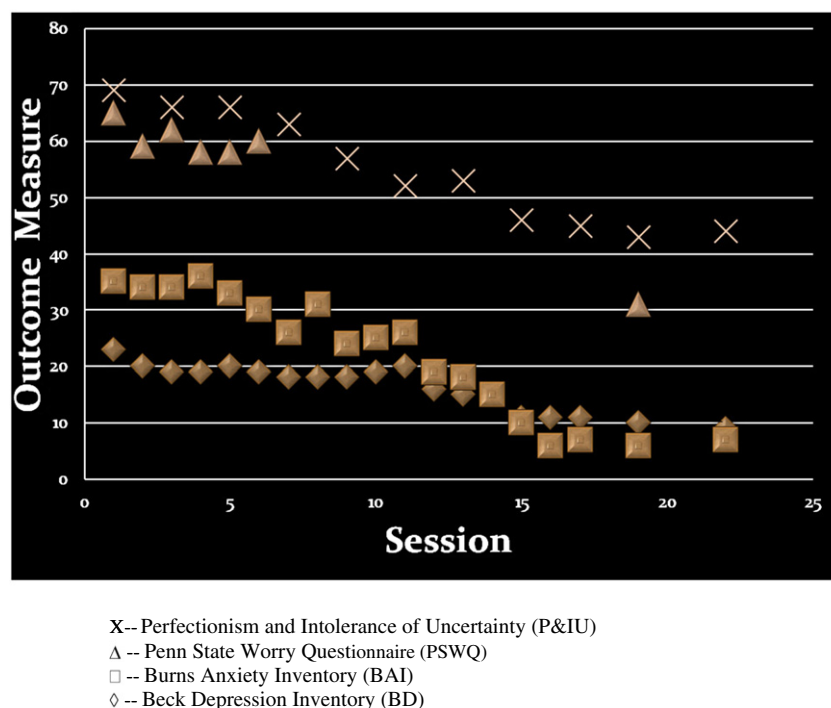


Figure 5. Revised formulation map for Ms. M.



**Figure 6.** Scores on measures of symptoms and mechanisms at each session for Ms. M.

Based on this new conceptualization, the clinician shifted the treatment to focus on the patient's "need to know" rather than on fears of particular outcomes. The therapist worked with the patient to carry out imaginal and situational exposures to not knowing for sure what her husband was doing. Imaginal exposures focused on the consequences of "never knowing for sure." For example, a series of imaginal exposures focused on the patient going crazy because she could never resolve her doubts about her husband's fidelity. Other imaginal exposures focused on key words or phrases (e.g., the names of her husband's female colleagues and the phrase, "I will never really know for certain what my husband has done with his female colleagues"). The therapist continued to work with the patient to resist checking and other safety behaviors. With the new formulation, the patient was better able to resist her checking behaviors, because she understood that the goal was for her to become more comfortable with the fact that she would never know for certain what her husband was doing. Collateral meetings with the husband focused on teaching him supportive responses that helped the patient disengage from seeking reassurance or engaging in other forms of checking behavior.

By Session 14, the patient was feeling significantly better (see Figure 6). Her BAI score was 6 (borderline) and her BDI score was 8 (minimal); equally important, the score on the OBQ-44 scale assessing intolerance of uncertainty was

46, decreasing and approaching the nonclinical range. The patient reported little jealousy, few urges to check, and little checking behavior. She was sleeping through the night and reported little anxiety during the day. Most important, the patient reported that her relationship with her husband was back on track. She and her husband seldom argued. As a final exposure, the patient encouraged her husband to attend a week-long music retreat with his female colleagues while she resisted the urge to text or call him. To her delight, her husband texted several times to tell her he missed her.

The case of Ms. M illustrates the value of collaborative empiricism in catching diagnostic and formulation errors early so the clinician can refocus the treatment plan on targets that are more closely tied to the hypothesized maintaining variables. Through ongoing progress monitoring, a view of the formulation as a hypothesis rather than a fact, and a willingness to discard diagnoses, formulations, and intervention plans that did not produce symptom and mechanism change, the clinician and patient were able to get a stalled treatment back on track. Progress monitoring in the service of testing formulation hypotheses enables the clinician to correct formulation and diagnostic mistakes before they result in treatment failures.

### Summary and Conclusions

The clinical work described in these two cases illustrates collaborative empiricism at its best. Both clinicians worked



with their patients to develop a case formulation, or hypothesis, about the psychological mechanisms causing and maintaining the patient's symptoms, to collect data to test the formulation by monitoring changes in those mechanisms, and to evaluate the effectiveness of the treatment plan based on the formulation by monitoring symptom change. When progress monitoring data showed that outcome was poor, therapist and patient worked collaboratively to collect more assessment data that led to revised formulations and more effective treatment plans.

The clinical work in these two cases was heavily empirical. The clinicians and patients collected several types of data. To monitor symptoms and mechanisms, they collected objective data, using standardized paper-and-pencil scales.

The clinicians also collected data in every session to monitor the patient's compliance with the treatment plan. Data about treatment compliance are important because unless the clinician can verify that the patient is in fact carrying out the recommended interventions, the outcome and mechanism data will not give useful information. The clinicians monitored compliance in the cases reported here by obtaining a report (verbally or, on occasion, in writing), from the patient in every session about the patient's compliance with the homework plan, and by also tracking, in the chart notes, the patient's attendance at sessions. In general, in these two cases, the patients reported substantial compliance. However, consistent with our observation that compliance is often imperfect when treatment is not targeting the core mechanisms, Ms. V's therapist noted that the patient's homework compliance during the first (unhelpful) phase of treatment was "inconsistent," and Ms. M's therapist observed that the patient was more able to carry out the injunction to refrain from safety behaviors when the treatment targeted intolerance of uncertainty, her core problem, than when it targeted the fears of losing her marriage.

The therapists also monitored the quality of the therapeutic alliance. Ms. V's therapist collected a rating of the quality of the alliance at every session using a paper-and-pencil scale she developed for that purpose; Ms. M's therapist assessed the alliance by observation and discussion with the patient. The alliance was quite strong in both cases. The alliance involved trust on both sides, the therapist's willingness to acknowledge and put out on the table data showing that the first treatment efforts had not been successful, and the patient's willingness to think about the problem and collect data to test hypotheses, and to be flexible and acknowledge the failure of the first efforts and try something new while maintaining confidence in the therapist's ultimate ability to help. This is a working relationship that requires the traditional elements of bond and agreement on goals and tasks (Bordin, 1979), but also requires quite a bit more than those things.

The assessment strategies these clinicians used were weak in several respects. Some variables or constructs that were relevant to the cases were not measured in any formal way. For example, Ms. V's therapist did not do any formal assessment of the patient's decisiveness and engagement in her life. Instead, the therapist measured it informally by viewing Ms. V's quitting her job, looking for a new job in a different field that was more consistent with her values, and her verbal report that she was risking more in her relationship with her boyfriend, as evidence of her greater engagement in life. Nor did the clinicians use any of the elegant strategies to formally test the formulation that have been developed by several cognitive-behavior therapists (see Haynes, et al., 2011; Iwata, Duncan, Zarcone, Lerman, & Shore, 1994; Mumma & Mooney, 2007b). Instead, the clinicians relied on the indirect strategy of testing the formulation by assessing the outcome of the treatment based on it. No written tool was used to assess compliance, or, except for an ad hoc measure for Ms. V, the therapeutic relationship. And most assessment was done via self-report scales, a strategy that produces mono-method bias (Shadish, Cook, & Campbell, 2002) and the risk that measures may change with repeated administration, and via standardized rather than idiographic scales. Despite many weaknesses, the data these clinicians collected did possess one essential characteristic of data collected in clinical practice: treatment utility (Nelson-Gray, 2003). The assessment data these clinicians collected helped them provide effective treatment to these two clients.

Empiricism is a defining feature of the clinical work described here. In this context, the reader might ask why the clinicians used a case formulation-driven approach to treatment, which has less empirical support than the manualized protocols for GAD and OCD, which have been studied and shown effective in numerous randomized controlled trials.

We offer several answers to this question. First, manualized treatment and case formulation-driven treatment are not an either/or choice. Thus, the treatment of Ms. M relied on the formulation and manualized treatment for GAD at first (Borkovec & Roemer, 1994), and later on cognitive therapy for OCD as described by Wilhelm and Steketee (2006). These manuals describe interventions that are based on a nomothetic formulation. At the same time, the treatment was also guided by an idiographic, or individualized, formulation that was derived from the nomothetic formulation, in that the therapist collected assessment data to individualize the treatment targets so as to focus on the main worry content, jealousy, of the patient. Therapists always individualize the treatment described in nomothetic protocols to some degree (Kendall, Chu, Gifford, Hayes, & Nauta, 1998).

Second, although it is important whenever possible to provide treatments that have been shown in randomized

controlled trials (RCTs) to be effective, it is also important to remember that the RCTs do not answer the question the clinician confronts, namely: Is this treatment helpful to this patient at this time? (Howard, Moras, Brill, Martinovich, & Lutz, 1996). To answer the clinician's question, we develop an idiographic formulation about the causes of the patient's symptoms and problems, and collect outcome data to monitor the patient's progress at every session.

Third, we find that we need the formulation hypothesis, and the data we collect to test it, to guide our clinical decision-making. Protocols do not answer many of the questions that arise as we go down the treatment road. Research on clinical judgment (Garb, 2005) shows that psychotherapists are prone to many biases and errors in judgment. If the therapist obtains a case formulation (a hypothesis about the causes of the patient's symptoms and problems), uses that hypothesis to design an intervention to treat the symptoms and problems, and then collects data to test the hypothesis, the therapist is working in a systematic way that provides a guide to clinical judgment. Of course, whether this approach leads to improved clinical judgment is an important empirical question in its own right. Recent work by Michael Lambert and his colleagues (Lambert, Harmon, Slade, Whipple, & Hawkins, 2005) provides some empirical support for the benefits of a feedback-informed approach to psychotherapy.

Finally, a case conceptualization approach provides the opportunity to integrate techniques across different protocols and treatment approaches in order to meet a particular client's needs. It is common for clients to present with either comorbid conditions or problems that do not fit perfectly within a single diagnosis and related treatment protocol. Even when clients present with a single diagnosis, a single protocol may not adequately address all of the potentially contributing mechanisms that seem to be driving a particular client's disorder (i.e., not all forms of depression look alike!). These situations call for integrating techniques from different treatments in order to more efficiently address comorbid conditions and tailor therapy for the individual client. For example, in the case of Ms. V, the therapist included mindfulness training along with cognitive behavioral interventions to enhance automatic awareness of threat thoughts throughout the client's day, as well as to facilitate affective and interoceptive exposure (through mindful focus on anxiety symptoms in the body) to reduce the pull toward mental control (i.e., worry and decision analysis). And although Ms. V got some benefit from the cognitive behavioral and mindfulness interventions her therapist initially employed, the client recovered fully only when the ACT values clarification and action plan interventions were integrated into her treatment. For all those reasons, we use a formulation-driven approach to treatment for all of our patients.

The benefits of a case formulation-driven approach are especially apparent when the patient is failing to respond to treatment, a situation where clinical judgment may be particularly poor (Kendall, Kipnis, & Otto-Salaj, 1992). The progress monitoring piece of a case formulation-driven approach to treatment allows the therapist to identify a failing treatment promptly, and the hypothesis-testing aspects of the method offers the clinician a clear path to follow when the initial treatment response is poor. That method is: work with the patient to develop and test hypotheses about the causes of poor outcome that might lead to ideas to improve the treatment and the outcome.

In the two cases presented here, the first hypothesis about the cause of poor outcome that the clinicians entertained was that the wrong mechanism was being targeted in treatment. However, poor outcome can result from many factors. These can include noncompliance, a poor quality alliance, low motivation to change, or other factors (Lambert, 2010; Mumma, 2011; Persons & Eidelman, 2012; Persons & Mikami, 2002).

The two cases reported here provide some empirical support for the notion that when the clinician obtains data that show that treatment is failing, embarking on a collaborative hypothesis-testing investigation with the patient has the potential to identify a new formulation and intervention plan that can lead to a successful treatment outcome.

## References

- Beck, A. T., Ward, C. H., Mendelsohn, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561–571.
- Bordin, E. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy*, 16, 252–260.
- Borkovec, T. D. (1994). The nature, functions, and origins of worry. In G. C. L. Davey & F. Tallis (Eds.), *Worrying: Perspectives on theory, assessment and treatment* (pp. 5–33). New York, NY: Wiley.
- Borkovec, T. D., & Roemer, L. (1994). Generalized anxiety disorder. In M. Hersen & R. T. Ammerman (Eds.), *Handbook of prescriptive treatments for adults* (pp. 261–281). New York, NY: Plenum Press.
- Burns, D. D., & Eidelson, R. (1998). Why are measures of depression and anxiety correlated? – I. A test of tripartite theory. *Journal of Consulting and Clinical Psychology*, 60, 441–449.
- Clark, D. M. (1986). A cognitive approach to panic. *Behaviour Research and Therapy*, 24, 461–470.
- Dugas, M., Gagnon, F., Ladouceur, R., & Freeston, M. (1998). Generalized anxiety disorder: A preliminary test of a conceptual model. *Behaviour Research and Therapy*, 36, 215–226.
- Garb, H. N. (2005). Clinical judgment and decision making. *Annual Review of Clinical Psychology*, 1, 67–89. doi:10.1146
- Hayes, S. C., Barlow, D. H., & Nelson-Gray, R. O. (1999a). *The scientist-practitioner: Research and accountability in the age of managed care* (2nd ed.). Boston, MA: Allyn and Bacon.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999b). *Acceptance and Commitment Therapy: An experiential approach to behavior change*. New York, NY: Guilford.
- Haynes, S. N., O'Brien, W. H., & Kaholokula, J. K. (2011). *Behavioral assessment and case formulation*. Hoboken, NJ: John Wiley & Sons.
- Holaway, R. M., Heimberg, R. G., & Coles, M. E. (2006). A comparison of intolerance of uncertainty in analogue obsessive-compulsive disorder and generalized anxiety disorder. *Anxiety Disorders*, 20, 158–174.

- Howard, K. I., Moras, K., Brill, P. L., Martinovich, Z., & Lutz, W. (1996). Evaluation of psychotherapy: Efficacy, effectiveness, and patient progress. *American Psychologist*, 51, 1059–1064.
- Iwata, B. A., Duncan, B. A., Zarcone, J. R., Lerman, D. C., & Shore, B. A. (1994a). A sequential, test-control methodology for conducting functional analyses of self-injurious behavior. *Behavior Modification*, 18, 289–306.
- Iwata, B. A., Pace, G. M., Dorsey, M. F., Zarcone, J. R., Vollmer, T. R., & Smith, R. G. (1994b). The functions of self-injurious behavior: An experimental-epidemiological analysis. *Journal of Applied Behavior Analysis*, 27, 215–240.
- Kendall, P. C., Chu, B., Gifford, A., Hayes, C., & Nauta, M. (1998). Breathing life into a manual: Flexibility and creativity with manual-based treatments. *Cognitive and Behavioral Practice*, 5, 177–198.
- Kendall, P. C., Kipnis, D., & Otto-Salaj, L. (1992). When clients don't progress: Influences on and explanations for lack of therapeutic progress. *Cognitive Therapy and Research*, 16, 269–281.
- Kuyken, W., Padesky, C. A., & Dudley, R. (2009). *Collaborative case conceptualization*. New York, NY: Guilford.
- Lambert, M. J. (2010). *Prevention of treatment failure: The use of measuring, monitoring, and feedback in clinical practice*. Washington, DC: American Psychological Association.
- Lambert, M. J., Harmon, C., Slade, K., Whipple, J. L., & Hawkins, E. J. (2005). Providing feedback to psychotherapists on their patients' progress: Clinical results and practice suggestions. *Journal of Clinical Psychology*, 61, 165–174.
- Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy*, 28, 487–495.
- Mumma, G. H. (2004). Validation of idiosyncratic cognitive schema in cognitive case formulations: An intraindividual idiographic approach. *Psychological Assessment*, 16, 211–230.
- Mumma, G. H. (2011). Validity issues in cognitive-behavioral case formulation. *European Journal of Psychological Assessment*, 27(1), 29–49.
- Mumma, G. H., & Mooney, S. R. (2007a). Comparing the validity of alternative cognitive case formulations: A latent variable, multivariate time series approach. *Cognitive Therapy and Research*, 31, 451–481.
- Mumma, G. H., & Mooney, S. R. (2007b). Incremental validity of cognitions in a clinical case formulation: An intraindividual test in a case example. *Journal of Psychopathology and Behavioral Assessment*, 29, 17–28.
- Nelson-Gray, R. O. (2003). Treatment utility of psychological assessment. *Psychological Assessment*, 15, 521–531.
- Obsessive Compulsive Cognitions Working Group. (2005). Psychometric validation of the obsessive belief questionnaire and interpretation of intrusions inventory—Part 2: Factor analyses and testing of a brief version. *Behaviour Research and Therapy*, 43, 1527–1542.
- Persons, J. B. (2008). *The case formulation approach to cognitive-behavior therapy*. New York, NY: Guilford.
- Persons, J. B., & Eidelman, P. (2012). *Handling treatment failure successfully*. Master Clinician session presented at the Association for Behavioral and Cognitive Therapies, National Harbor, Maryland.
- Persons, J. B., & Mikami, A. Y. (2002). Strategies for handling treatment failure successfully. *Psychotherapy: Theory/Research/Practice/Training*, 39, 139–151.
- Rachman, S. (1997). A cognitive theory of obsessions. *Behaviour Research and Therapy*, 35, 793–802.
- Rachman, S. (2003). *The treatment of obsessions*. New York, NY: Oxford University Press.
- Salkovskis, P. M. (1989). Cognitive-behavioural factors and the persistence of intrusive thoughts in obsessional problems. *Behaviour Research and Therapy*, 27, 677–682.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. New York, NY: Houghton Mifflin.
- Tolin, D. F., Abramowitz, J. S., Brigidi, B. D., & Foa, E. B. (2003). Intolerance of uncertainty in obsessive-compulsive disorder. *Journal of Anxiety Disorders*, 17, 233–242.
- Wells, A. (2006). Cognitive therapy case formulation in anxiety disorders. In N. Tarrier (Ed.), *Case formulation in cognitive behaviour therapy: The treatment of challenging and complex cases* (pp. 52–80). Hove, U. K.: Routledge.
- Wilhelm, S., & Steketee, G. S. (Eds.). (2006). *Cognitive therapy for obsessive-compulsive disorder: A guide for professionals*. Oakland: New Harbinger.

We thank the patients who allowed their cases to be presented here. We thank Gail Steketee and the Obsessive Compulsive Cognitions Workgroup for developing the Obsessive Beliefs Questionnaire (OBQ-44), and for generously making it freely available, and we thank Janie Hong for developing the Excel scoring document for the OBQ-44 and for making it available (both are posted at [www.sfbacct.com](http://www.sfbacct.com)). Parts of this paper were presented at the annual conference of the Association for Behavioral and Cognitive Therapies in San Francisco, November 2010.

Address correspondence to Jacqueline B. Persons, Ph.D., San Francisco Bay Area Center for Cognitive Therapy, 5435 College Avenue, Oakland, CA 94618; e-mail: [jbp@sfbacct.com](mailto:jbp@sfbacct.com).

Received: October 12, 2012

Accepted: March 7, 2013

Available online 3 April 2013