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**An Idiographic Hypothesis-testing Approach to Psychotherapy:
Using case formulation and progress monitoring to guide treatment**

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Ann was intensely distressed when she spoke on the telephone to the therapist who was screening callers at the clinic. She reported, “I have completely lost social confidence. I’m so sick of being at home by myself, but I’m terrified to go anyplace where I have to socialize. I force myself to go to my community college classes, but that’s about it.” Ann answered the therapist’s questions over the phone in a straightforward, very brief way, and made an appointment for an evaluation at the clinic.

When Ann appeared for her appointment, she was attractively dressed in slacks and a sweater, with neat hair and a slight build. She appeared timid and frightened. She was hunched in her chair, and she spoke so softly that the therapist had to lean in to hear her. However, Ann also demonstrated warmth, flashing occasional smiles. Her eye contact appeared natural, though less frequent than might be expected. She rarely volunteered information, and spoke only in response to the therapist’s inquiries, giving very little detail, so that the therapist had to frequently ask her to elaborate on her answers. Ann appeared conscientious and earnest, and worked hard to answer the therapist’s questions in a thoughtful way. She described her experiences during social interactions, including her high fear, sensations of fluttering heartbeat and flushing, and her common thoughts (“I’m so boring!” or “Ugh, that was such a weird thing to say” or “He’s checking out my hair – it must look bad.”). Ann fidgeted with her fingers throughout the interview and repeatedly smoothed her hair with her hands. She became tearful numerous times, particularly when discussing her longstanding anxiety in social

situations, her dispiriting loneliness, and her hopelessness that things could ever be different for her.

Ann reported that she had been shy since childhood. As an elementary school student, she spoke to few children in her class at school. At times she made casual friends, but her reticence mostly kept her disconnected. She reported that her mother had told her that her withdrawal had become more pronounced when she was four, when her parents' marriage broke up due to her father's alcoholism. Her father then moved to another state and had little contact with Ann or her mother. Ann assumed that her behavior had somehow caused his departure, and she became wary of developing relationships for fear that she'd mess up again and be rejected again.

Ann suffered another huge interpersonal loss in eighth grade, when her best friend, Angela, suddenly and abruptly stopped returning her texts or calls and began avoiding Ann at school. Angela instead began spending all her time with one of the most popular girls in the school. Angela's abandonment of Ann was sudden, unexpected, and devastating. Ann felt confused about what had happened. She thought about it endlessly, listing all the ways she felt she didn't measure up to Angela's new friend, and speculating about all the things she might have done to provoke Angela to leave her.

As a consequence of Angela's rejection of her, Ann became even more careful about her interactions with others. She began to expect that others were very likely to find her unacceptable in some way and reject her. She avoided social contact as much as possible. And when she did interact with others, Ann

focused her attention not on the person she was talking to, but instead on how she perceived herself to be coming across to the other person, and she constantly evaluated how she felt she was doing and how the interaction was going. She tried to assess whether the person had a good impression of her (e.g., found her interesting, “normal”). For example, in one interaction, she felt that her face had a serious expression. She had the thought, “I’m not being friendly enough!” and quickly forced a smile. Indeed, Ann constantly monitored her facial expression to try to ensure that it appeared interested, relaxed, and friendly. She minimized self-disclosure so as to avoid exposing features of herself that the other person might dislike.

Ann’s social anxiety and disconnectedness really began to interfere with her functioning when she began college and needed to make new friends. Instead of getting to know her classmates, Ann avoided social contact more than ever. She did not join a study group to work on her class assignments, and this meant that the quality of her work suffered, and her grades began to suffer as well. Ann’s social isolation and poor academic performance led to self-criticism, depressed mood, hopelessness, and other depressive symptoms. Finally, Ann became so miserable and desperate that she called the clinic to ask for help.

An Idiographic Hypothesis-testing Approach to Psychotherapy

We describe here an idiographic hypothesis-testing approach to psychotherapy that relies on a case formulation and progress monitoring data, and we illustrate it with the example of Ann’s case. An idiographic hypothesis-testing approach to psychotherapy is an elegant strategy for providing evidence-based care. Using the scientific method, the

therapist develops a hypothesis (formulation) about the factors that cause and maintain the patient's problems and that interfere with the patient's accomplishing his or her goals, uses the formulation to guide treatment, and collects data as the treatment proceeds in order to evaluate the effectiveness of the treatment and test the formulation hypotheses (Persons, 2006).

The therapist using an idiographic hypothesis-testing approach also relies on several types of data and findings, including:

- Treatment protocols that have been shown to be effective in empirical studies, including randomized controlled trials, uncontrolled trials, and single case studies;
- Interventions and practices (cf. John Weisz' [Weisz, Ugueto, Herren, Afienko, & Rutt, 2011]) distinction between ears (treatments) and kernels (interventions) that have been shown to be effective in empirical studies. An example is the evidence-based practice of progress monitoring (Carlier et al., 2012; Goodman, McKay, & DePhilippis, 2013);
- Formulations of psychopathology that are supported by evidence, especially formulations that underpin the ESTs and evidence-based interventions and practices. An example is the evidence that safety behaviors maintain negative beliefs and symptoms of social anxiety (Wells, Clark, & Salkovskis, 1995), which supports the cognitive-behavioral formulations of social anxiety as resulting from faulty beliefs and avoidance behaviors that prevent disconfirmation of those beliefs (Clark & Wells, 1995; Rapee & Heimberg, 1997);

- Assessment tools and strategies that are supported by evidence from controlled studies (see Youngstrom in this volume and also Hunsley & Mash, in press) or that have some evidence of utility in the treatment of the case at hand;
- Findings about the process of change in psychotherapy (e.g., that trajectory of change is generally non-linear, with early rapid improvement followed typically followed by a slower rate of change (Lutz, Martinovich, & Howard, 1999) or that cognitive preparation enhances the beneficial effects of video feedback in the treatment of social phobia (Harvey, Clark, Ehlers, & Rapee, 2000), that exposure is more successful at treating social anxiety when even the most subtle avoidance behaviors are identified and eliminated (Wells et al., 1995);
- Findings from basic science, such as evidence that inhibitory learning is fragile and highly context-dependent (Craske et al., 2008).
- Evidence from this patient's own history or experience. An example is that Ann connected better socially with slightly older peers than with same-age or younger peers.

We describe here our approach to providing idiographic hypothesis-testing psychotherapy based on a case formulation and progress monitoring data. Our example uses cognitive-behavior therapy, but the concepts and methods we describe are not specific to that treatment modality, and can be used in any modality of psychotherapy.

We provide an overview of CBT guided by an idiographic hypothesis-testing approach and progress monitoring data, and we describe each step of the assessment and

treatment process, giving special attention to the steps of developing a case formulation and using the formulation to guide treatment. We illustrate our account with examples from the treatment of Ann, described at the outset of the chapter.

Overview of an Idiographic Hypothesis-testing Approach to CBT

In this approach to CBT (Persons, 2008), depicted in Figure 1, the therapist begins by *collecting assessment data to obtain a diagnosis and an initial formulation (conceptualization) of the case*. The formulation is a hypothesis about the mechanisms causing and maintaining the patient's problems. The therapist uses the formulation (and other information) to develop a *treatment plan and obtain the patient's informed consent to it*. Then *treatment* begins. The therapist uses the formulation to select treatment targets and interventions and to guide other clinical decisions. As treatment proceeds, the patient and therapist collect assessment data to evaluate whether the patient is making progress toward accomplishing his or her treatment goals. The assessment data also help patient and therapist test the formulation and evaluate whether the patient is attending to, learning, remembering, and using the concepts and skills the therapist is teaching. Treatment ends when the patient's goals are met or the progress monitoring data indicate that the patient is not likely to improve and the therapist makes a referral to another provider. All of these steps are carried out in the context of a *collaborative therapeutic relationship*.

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Insert Figure 1 about here
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Assessment to Obtain a Diagnosis and Initial Case Formulation

The therapist begins by working with the patient to obtain a diagnosis and an initial case formulation that guide treatment planning. Diagnosis is important for several reasons, including that much of the scientific literature, especially the treatment literature, is tied to diagnosis.

But diagnosis is not enough to guide treatment. A case formulation is also needed. A case formulation, unlike a diagnosis, describes and proposes relationships among the psychological mechanisms and other factors that are causing and maintaining all of a particular patient's disorders and problems. The formulation helps the therapist and patient understand how all the patient's disorders and problems are related, describes the idiographic features of these disorders and problems, and helps the therapist design and implement effective treatment.

The recent National Institute of Mental Health's (NIMH) Research Domain Criteria Project (RDoC) proposes that the best way to address psychopathology is to focus on understanding dysfunctions that are defined and measured dimensionally *across* diagnoses, rather than through categorical, symptom-defined approaches (Insel et al., 2010). This way of thinking about psychopathology aligns well with the case formulation approach to psychopathology and its treatment that we describe here.

Elements of a case formulation

A complete case formulation includes all of the following elements and ties them together into a coherent whole: all of the patient's *symptoms, disorders, and problems*; the *mechanisms* causing the symptoms, disorders, and problems; the *precipitants* of the symptoms, disorders, and problems; and the *origins* of the mechanisms. The case

formulation that Ann's therapist used to guide her therapy appears in Figure 2. This formulation includes all of Ann's problems, as well as hypotheses about the mechanisms causing and supporting the mechanisms, and also describes relationships among the problems, especially the way that social isolation led to problems at school and depression.

Insert Figure 2 about here

Ann's therapist also developed a detailed formulation of Ann's social anxiety using the worksheet provided here: <http://psychologytools.com/cognitive-model-of-social-anxiety.html>. As shown in Figure 3, Ann's therapist fleshed out this nomothetic model of social anxiety with the idiographic details of Ann's social anxiety symptoms.

Insert Figure 3 about here

Thus, Ann's therapist relied on two formulations, one of the case (Figure 2), which includes all the problems and symptoms and how they are related, and another (Figure 3) of Ann's social anxiety disorder. In fact, Ann's therapist relied on multiple formulations. She often used a Thought Record with Ann to examine the details of her automatic thoughts and behaviors and emotions in a particular situation, and the Thought Record itself was a formulation -- a formulation of Ann's experience in a particular situation. The therapist develops all of these formulations collaboratively with the patient.

The process of developing an initial case formulation

We describe the process of developing two of the key elements of the initial case formulation: the comprehensive Problem List, and the initial mechanism hypotheses.

Developing a comprehensive Problem List

Why develop a comprehensive problem list? Obtaining a comprehensive list is critical for at least four reasons. First, important problems can be missed if the therapist simply focuses on the problems the patient wishes to focus on or that are in plain view. Patients frequently wish to ignore serious problems like substance abuse, self-harming behaviors, or others that can interfere with successful treatment of the problems that the patient *does* want to focus on. Second, a comprehensive problem list often reveals common elements or themes that cut across problems. Awareness of these themes can help the therapist generate mechanism hypotheses for the formulation. Third, the presence of some problems (e.g., major medical problems that might make it difficult for the patient to keep reliable therapy appointments) can affect treatment of the others. Finally, although often the treatment focuses quite a bit on a particular disorder or disorders (as in Ann's case, where the therapist focuses on her social anxiety disorder and her depression), a key perspective of the case formulation-driven approach to treatment is that the therapist is treating not the *disorder* or disorders, but the *patient*.

To obtain a comprehensive list of the patient's problems, the therapist assesses the patient's psychiatric and medical problems, any difficulties the patient is having in obtaining and making good use of treatment for those problems (e.g., noncompliance), as well as any difficulties in the arenas of interpersonal, occupational, school, financial, housing, legal, and leisure functioning.

Note that in the Problem List, the therapist begins to translate diagnostic information into terms that facilitate conceptualization and intervention from a cognitive-behavioral point of view. The Problem List does this in part by detailing the important symptoms of the patient's psychiatric disorders and psychosocial problems and by describing, whenever possible, the cognitive, behavioral, and emotional components of problems. Both of these features of the Problem List are illustrated in the formulation of Ann provided above.

To obtain a Problem List, the therapist collects data from multiple sources, including the clinical interview, structured diagnostic interviews, self-report scales, self-monitoring data provided by the patient, observations of the patient's behavior, and reports from the patient's family members and other treatment providers. At the Oakland Cognitive Behavior Therapy Center, we send patients to our website and ask them to download and complete and bring to their initial consultation session an intake packet that includes an Adult Intake Questionnaire that asks questions about previous and current treatment, family and social history, previous and current substance use, trauma, and legal and other problems, as well as a self-report diagnostic screening form that we developed, and several standardized scales. Many of these are available free at <https://oaklandcbt.com>.

Standardized assessment scales that we are currently using for all our patients include the Beck Depression Inventory (Beck, Steer, & Garbin, 1988), the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988), and a standardized assessment of functioning, the Work and Social Adjustment Scale (Mundt, Marks, Shear, & Greist, 2002), which assesses functioning in the domains of work, home management, social and

private leisure activities, and relationships, and a self-report diagnostic screening tool (the diagnostic screening tool was developed at the San Francisco Bay Area Center for Cognitive Therapy and is in the public domain and available at <https://oaklandcbt.com/forms-and-tools-for-clinicians/>). Based on the information obtained in the initial telephone contact, the therapist may also ask the patient to complete scales to assess other symptoms and problems. Ann's therapist asked her to complete the Liebowitz Social Anxiety Scale (Liebowitz, 1987) in addition to the measures listed above. When the patient arrives for the initial session, the therapist asks the patient's permission to take the first five minutes of the session to review all of this information in order to be able to prioritize the topics taken up in the interview (e.g., to identify whether suicidality must be assessed), and uses it to guide the interview.

Developing a mechanism hypothesis

The heart of the formulation is the mechanism hypothesis. A mechanism hypothesis describes mechanisms or processes that cause and maintain symptoms. A core part of the case formulation approach is the development of an idiographic mechanism hypothesis for each particular case. Mechanisms can include biological mechanisms (e.g., thyroid dysfunction) but we emphasize and focus here on psychological mechanisms.

Mechanisms in cognitive-behavioral formulations include such things as attentional biases, exaggerated expectations of harm and danger, perfectionism, faulty contingencies, repetitive negative thinking (e.g., worry, rumination), avoidance, and a view of the self as worthless. Note that some of these phenomena could also be considered symptoms. For example, the last three items in the list just given -- repetitive negative thinking, avoidance, and the belief that the self is worthless, could be viewed

either as symptoms or as mechanisms. That is, some phenomena that are problems, or symptoms, can also be viewed as mechanisms. If that is the case, in which section of the formulation does the clinician place these phenomena: in problems? Or in mechanisms? The rule of thumb that we recommend the therapist use to answer this question is: Place the phenomena in either the problem section or the mechanism section or both, and make the decision based on which view of the phenomenon is most helpful in guiding the treatment. In the case of Ann, her self-focused negative automatic thoughts were symptoms that were distressing to her and which she hoped to address in treatment. However, when her therapist laid out the cognitive model of social anxiety, Ann could see that her thoughts also served as mechanisms that contributed to her distress, and she reported that viewing them as mechanisms was helpful to her in her treatment.

To develop an idiographic mechanism hypothesis, the therapist relies, as described above, on any or all of the types of data described at the beginning of the chapter. A key source of data is the findings from randomized controlled trials of ESTs that treat the patient's presenting problems and disorders. Ann met criteria for social anxiety disorder and major depressive disorder, and so the therapist consulted the nomothetic formulations underpinning those ESTs and used them to guide the development of the formulation of Ann's case. The formulation of Ann's case relied heavily on the formulation of social phobia developed by Clark and Wells (1995) and Rapee and Heimberg (1997) and the formulations of depression offered by Beck, Rush, Shaw, and Emery (1979) and by Martell, Addis, and Jacobson (2001).

The model developed by Rapee and Heimberg (1997) stipulates that individuals with social phobia are hyperaware of the fact that they are observed by others, whom they

perceive as quite critical. When interacting with others, they focus their attention not on the person with whom they are interacting but instead on a mental comparison of how they believe they appear to that person, and the other person's standard for them. That is, they monitor for the potential threat of failing to meet the other person's standard. In addition, they experience inflated expectations of the *likelihood* and the *consequences* of failing to meet the standard. These processes frequently lead the individual to conclude that s/he failed to meet others' standards and, as a result, experience cognitive, behavioral, and physical symptoms of social anxiety.

Ann's therapist used this nomothetic model of social anxiety disorder to develop an idiographic case formulation for Ann by filling in the details of the model as they applied to Ann's case (see Figure 3). Ann's therapist determined that Ann's monitoring for potential threat consisted especially of hypervigilant attention to the facial expression of the person to whom she was speaking in order to assess whether that person seemed interested in what Ann was saying. Her physiological symptoms of anxiety consisted primarily of increased heartrate, stomach discomfort, and blushing. Her behavioral response was to say as little as possible when she was in a social situation, and to escape and avoid social contact whenever possible.

In addition, the therapist laid out, in the case formulation (Figure 2), a model that accounted for all of Ann's symptoms, and including her poor academic functioning and social isolation, and hypothesized that both resulted directly from Ann's avoidance of social contact. To conceptualize the depressive symptoms, the therapist used Beck's and Martell et al.'s (2001) models to hypothesize that she had negative cognitions about herself and others (I am not likeable, others find me boring) and suffered a loss of

positive reinforcers as a result of her social isolation and half-hearted participation in and enjoyment of her schoolwork. Consequently, Ann became depressed.

A key clinical question related to the development of the mechanism hypothesis is: When more than one model can be used to formulate a case, how does the therapist choose? For example, multiple evidence-based formulations are now available for unipolar depression, including Beck's cognitive model (Beck et al., 1979), behavioral activation (Martell et al., 2001), Lewinsohn's behavioral model (Lewinsohn, Hoberman, & Hautzinger, 1985), and the problem-solving model developed by Nezu and Perri (1989). This question is a fascinating one. We list here several factors that we consider when working with Ann and other clients, which allows us to select a model upon which to base a case formulation. These include:

- the degree to which the details of the patient's case, as assessed using standardized scales or idiographic logs, match any particular formulation (Haynes, Kaholokula, & Nelson, 1999);
- the degree to which the patient's formulation of his or her own case matches a particular formulation;
- the patient's receptiveness to interventions based on a formulation, as assessed by observing the patient's receptiveness and willingness to use interventions that flow out of a formulation;
- the patient's progress (as assessed via a standardized symptom scale at every session) in treatment based on a particular formulation;
- the patient's treatment history (e.g., he may have failed previous treatment guided by a particular formulation);

- the therapist’s training or experience or preference;
- the formulation the therapist finds s/he can use most easily to aid in treatment.

Another important question is: “Must the therapist choose between models or can s/he use more than one model simultaneously?” Often our cognitive-behavioral models are not mutually exclusive. That is, both the cognitive (Beck et al., 1979) and the behavioral activation (Martell et al., 2001) formulations could account for a particular patient’s symptoms of depression. And both can provide useful intervention ideas. For those reasons, to guide Ann’s treatment, we relied both on Beck’s model (to focus on the very prominent thoughts and to use the thought record to intervene to address Ann’s depression), and on the behavioral activation model (to help Ann understand how her avoidance behavior left her isolated and unhappy).

Finally, we emphasize that the therapist develops the initial case formulation in the context of a collaborative relationship with the patient. Ideally this happens gradually as a process of mutual discovery (Kuyken, Padesky, & Dudley, 2009) rather than in a session in which the therapist authoritatively informs the patient about the details of the formulation in one fell swoop. For example, Ann worked with her therapist to track her mood and her social contact for two weeks to test the hypothesis that the two were related. Ann learned from this log that she repeatedly experienced a mood boost following social interactions – even when she didn’t think the interactions were as positive as she had hoped – and she experienced chronic low mood when she was socially isolated. After doing this experiment, Ann understood and agreed with the therapist’s formulation that Ann’s social isolation was a major cause of her depression.

We also emphasize that the formulation is a hypothesis, and one that the therapist and patient work collaboratively on together to fine-tune and revise as treatment proceeds. In Ann's case, monitoring her mood after social activities led to a change in her view of her behavior in a social situation. Ann found it difficult to attend social activities, so she and the therapist made a plan to ask her friend Joan to come with her to parties on campus. However, Ann was surprised to find that when she attended a party with Joan, she actually socialized less when she was at the event, and did not enjoy the event and feel the mood improvement that she usually felt after she pushed herself to engage in social activities. After discussing the situation with her therapist, Ann realized that her friend Joan was so anxious and clung to Ann so tightly that Ann found it very easy to avoid socializing, so that when she left the party she felt even more alone than she had beforehand. Ann learned that taking Joan with her to parties was actually a safety behavior. Ann tested this hypothesis by attending the next event on her own and pushing herself to engage with people. Although she found it difficult to do this, she found that when she did, she enjoyed herself, and when she left the party she noticed that her mood was quite a bit brighter than when she had attended with Joan.

Treatment Planning and Obtaining Informed Consent

Treatment Planning

The function of the formulation is to guide effective treatment (Hayes, Nelson, & Jarrett, 1987). A key way the formulation does this is by identifying the targets of treatment, which are generally the mechanisms that the formulation proposes are causing the symptoms.

The formulation also guides treatment planning by helping the therapist think about and coordinate all of the therapies the patient is receiving, not just the treatment the individual therapist is providing. For example, Ann discussed her symptoms with her primary care provider (PCP), who recommended that when Ann felt anxious in interactions, she try to slow her breathing, and then check to see if her heart pounding decreased. When Ann discussed this plan with her therapist, the therapist reviewed the formulation, and pointed out that self-focused attention (am I slowing down my breathing?) and monitoring for threat (is my heart beating too hard?) were actually mechanisms *contributing* to Ann's heightened physiological arousal, anxiety, and urges to escape.

Ann quickly understood this formulation and decided not to follow her PCP's recommendations. She and her therapist worked together to help Ann explain to her PCP why she had elected not to follow the PCP's recommendations. Ann was successful at asserting herself, and her PCP was receptive to Ann's input. The key to successful collaboration of Ann's two treatment providers was the shared formulation.

Obtaining Informed Consent for Treatment

Obtaining the patient's consent to treatment before treatment begins is ethically necessary (American Psychological Association, 2002). It is also clinically helpful in numerous ways. For example, it can help prevent non-adherence by obtaining the patient's agreement to the goals and interventions of treatment before beginning it. Working with the patient to obtain a collaborative case formulation aids in the process of obtaining informed consent because most patients are not willing to go forward in treatment unless they have confidence that the therapist truly understands their

difficulties and will provide treatment that addresses them. A careful process of agreeing on a treatment plan also sets the stage for revisiting the progress monitoring data show that treatment is failing (Persons, Beckner, & Tompkins, 2013).

There are multiple elements of the process of obtaining informed consent.

Specifically, in this process, the therapist:

- Provides an assessment, including a diagnosis and formulation, of the patient's condition;
- Recommends a treatment, describes it, provides a rationale for the recommendation, and describes any risks;
- Negotiates a treatment plan with which both therapist and patient are comfortable;
- Describes alternative treatment options; and
- Obtains the patient's agreement to proceed with the agreed-upon treatment plan.

All of the elements of therapy described so far (initial assessment, diagnosis, case formulation, treatment planning, and informed consent) comprise the pre-treatment phase of the therapy. This phase of therapy lasts 1 to 4 sessions depending largely on the complexity of the case. If these elements are successfully accomplished and patient and therapist can agree on a treatment plan, treatment begins.

Treatment

Treatment is guided by the formulation. The formulation describes the mechanisms that cause and maintain the patient's symptoms, and the therapist uses this information to plan interventions that reduce the symptoms by modifying the mechanisms that the formulation hypothesizes drive the symptoms. In Ann's case, the formulation led to interventions aimed to help her shift her attention away from the comparison of herself

with her mental ideal to the conversation at hand, drop her avoidance behaviors, and revise her beliefs about others' expectations of her and about the consequences of failing to meet others' expectations.

To target Ann's negative comparisons with her ideal social performance, her therapist taught Ann to focus her attention on the content of the conversation at hand, as well as to more positive (rather than threatening) aspects of her conversational partners. Ann began to attend to her conversational partner's verbal cues (positive) more than the facial expression of her conversational partner (often ambiguous and perceived by Ann as threatening). Focusing on the verbal cues from the partner helped Ann attend to the conversation at hand rather than her performance, and provided more reliable, explicit feedback that her partner was interested in the conversation. If the partner continued the conversation, Ann was instructed to attend to it and consider it positive feedback.

This attentional shift also helped ease Ann's physical symptoms of anxiety, as her focus on her symptoms tended to exacerbate them. Ann and her therapist conducted several behavioral experiments in which Ann tracked her anxiety and her enjoyment of the conversation when she attended as usual to her conversational partner's expression and her own performance, and when she shifted her attention to the content of the conversation. Ann learned that when she shifted her attention to the content of the conversation, her anxiety decreased and she actually began enjoying her some of her interactions with others.

Ann and her therapist also worked to drop her avoidance behaviors, and Ann began to stay in conversations regardless of her perceived performance. In addition, Ann worked with her therapist to set goals to help her approach her goal of joining some of the small

group meetings her fellow students had established. These goals were set in a graduated fashion, to help Ann feel confident that she could achieve them (particularly important given the high level of behavioral avoidance delineated in the formulation). For example, the first week Ann only had to learn the logistics of the small group meetings (i.e., when, where). Subsequent goals included attending a small group meeting without participating, then attending and participating, and eventually volunteering to take the lead on some group tasks. And Ann and her therapist also role-played conversations in which Ann expanded her self-disclosure – another component of her behavioral avoidance – and Ann began practicing more self-disclosure outside the session.

Ann also worked with her therapist to schedule more activities, particularly pleasant and social ones. These interventions were based on the case formulation mechanism hypothesis that Ann had a lack of positive reinforcers, and in particular a lack of social interaction that contributed to isolation and consequent depressed mood. Ann initiated a study session with another shy young woman, Susan, and over time, Susan became a regular “study buddy” and a friend.

Progress Monitoring

As treatment proceeds, the patient and therapist collect data to monitor the process and outcome of therapy and, directly or indirectly, to test the formulation hypotheses (for example, with Ann, that self-focused attention increases anxiety in social situations). The therapist collects some data formally, using written or online tools, and collects other data informally, observing the patient’s behavior in the session, for example. Data collection allows patient and therapist to answer questions like: Are the symptoms remitting? Is the patient achieving her goals? Does the patient accept the

formulation the therapist has offered? Is the patient doing her therapy homework? Are the mechanisms described in the formulation changing as expected? Are problems in the therapeutic relationship interfering?

It is not feasible to collect formal data to evaluate all aspects of outcome and progress. However, we do recommend that the therapist monitor symptoms at every session in writing or using a software or online tool. This can be done using a standardized assessment instrument or idiographic measures. Ann's therapist used the Beck Anxiety Inventory (Beck, Epstein, et al., 1988) and the Beck Depression Inventory (Beck, Steer, et al., 1988) to track her symptoms at every session. Ann's therapist asked Ann to come 5 minutes early for her session and to fill out the two forms in the waiting room. Then, when Ann arrived, her therapist scored the measures, plotted the scores, and reviewed the plot with Ann at the start of the therapy session. The plots appear in Figure 4.

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Insert Figure 4 about here
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Ann's therapist also used self-report data to monitor the change process. For example, in several of her behavioral experiments, Ann provided ratings of predicted, peak, and post levels of anxiety in social situations. These data helped her learn that her anxiety predictions were typically higher than her actual experience, and this information helped her approach feared situations more easily. The ratings also helped her therapist

see that the exposures Ann was doing were having the desired effect, as Ann's peak anxiety ratings were decreasing over time.

Ann's therapist also monitored her progress by observing Ann's behavior in the session. The therapist noted that as treatment proceeded, Ann came to her session looking brighter and with a lighter step. Her hunched posture from her early sessions began to disappear, and she spontaneously volunteered information with more enthusiasm than the therapist had previously seen from her. And Ann now spoke in a normal volume, in contrast to her near whispers in the intake session. These in-session behavioral observations suggested that Ann's social anxiety was easing and her mood was improving.

The data the therapist collects are used to test the formulation hypothesis. The therapist tests the formulation indirectly by monitoring the degree to which the treatment plan based on the formulation helps the patient accomplish his or her treatment goals. To test the formulation more directly, the therapist can collect data to examine the degree to which changes in symptoms and mechanisms co-vary in the way the formulation predicts (e.g., see Iwata et al., 1994 and Turkat & Maisto, 1985). For example, if the formulation predicts that changes to target mechanisms ought to produce changes in symptoms, but progress monitoring data show that changes in mechanisms occur but changes in symptoms do not, these data suggest that the formulation is incorrect (Persons et al., 2013). In Ann's case, her observations that attending parties with her friend Joan reduced her participation in the event and dampened her mood indicated that being with Joan was a safety behavior, and thus led to a revision in the formulation and in the treatment plan.

In addition to its key role in the hypothesis-testing process, progress monitoring helps the therapist identify non-adherence and set-backs early so they can be addressed

before they undermine the therapy. Ann made excellent progress in treatment, as the progress plot in Figure 4 shows. However, after a period of improved social functioning and engagement, at about session 21 (see Figure 4), Ann began arriving late to her therapy sessions. Her mood dropped and she stopped pushing herself to attend social activities.

Ann's lateness to sessions and the increase in her symptoms that appeared in the progress monitoring data alerted the therapist to the fact that treatment was going off track. The therapist queried Ann about these things and learned that Ann was very upset about her interactions with her mother's partner. Ann often spent the night or weekend at her mother's house, and her relationship and comfort with her mother was a source of positive reward. But Ann felt upset by what she perceived as her mother's partner's expectations that Ann take over the role of kitchen cleanup whenever she was there, and by the unpleasant jokes and sarcasm that her mother's partner directed at her. Ann's response was to stop spending time at her mother's house.

Ann's therapist reviewed the situation with Ann and helped her see that she had slipped back into her usual coping strategy of avoidance, and that it was not serving her. Ann's therapist revised the formulation to highlight the importance of asserting to solve interpersonal problems, and worked with Ann to teach her skills to handle interpersonal conflict. Ann was able to speak up effectively to her mother's partner, resume her positive relationship with her mother, and get back on track with her therapy and planned social activities.

Termination

Termination occurs when the goals of treatment have been met, when patient and therapist agree that treatment has failed, or when logistical or other obstacles arise and cannot be solved. Progress monitoring data often provide a good read on whether the patient has reached her goals. Sometimes the formulation and progress monitoring data, viewed together, can help the patient and therapist decide whether termination is indicated. For example, progress monitoring data that indicate that a depressed patient's symptoms remitted because she went on vacation, not because she solved the problems that are making her miserable at work, suggest that termination is premature. The fact that no change has occurred in the mechanisms (in this case, problem-solving skill deficits) that appear to cause the depressive symptoms indicates that more treatment is needed.

Often reductions in symptoms seen in the progress monitoring data coupled with changes in the target behaviors described in the formulation provide good evidence that the patient is ready to end her treatment. In Ann's case, after 26 sessions, her symptoms of anxiety and depression had remitted (see Figure 4), and she was consistently engaging in social interactions. She had developed some friends at school and was participating in study groups. Her grades were better, and she felt happier and more confident. After spending a session reviewing her progress and helping her identify the skills she needed to keep practicing, she and her therapist agreed that she was ready to bring her therapy to an end.

The Therapeutic Relationship

The therapeutic relationship supports all of the other elements of the therapy. Additionally, case formulation-driven CBT relies on a dual view of the relationship. One

part of the relationship is the necessary-but-not-sufficient view. In this view, the trusting collaborative relationship is the foundation upon which the technical interventions of CBT rest.

The other view of the relationship is itself an assessment (Turkat & Brantley, 1981) and intervention tool (Kohlenberg & Tsai, 1991), as illustrated in the case of Ann. In our work with Ann, we observed that she tended to describe her problems in vague, general terms, such as, “It’s been a nerve-wracking week,” and to resist giving details of her struggles and distress. When the therapist gently pointed out to Ann how difficult it was to get detailed information from their conversations, a good discussion ensued that provided details about the mechanisms driving Ann’s reluctance to provide details. Ann reported that she feared that if she provided more information about her experiences, the therapist would find her unappealing and want to stop working with her. It was this discussion that led to the discovery that minimizing self-disclosure was a key avoidance behavior that Ann used to protect herself from harm in social situations. Thus, a detailed examining of the interactions between Ann and her therapist provided important information that contributed to the case formulation and to the treatment.

Ann’s therapist also used the therapeutic relationship to treat Ann’s fear of self-disclosure, using ideas from functional analytic psychotherapy (Kohlenberg & Tsai, 1991). When Ann shared more personal details, the therapist took care to spontaneously, warmly, and immediately let Ann know that the therapist felt closer to Ann and experienced her as more interesting and appealing in that moment.

The case formulation-driven approach also helps the therapist establish a strong and positive relationship at the beginning of therapy because the collaborative process of

building a shared formulation provides a kind of super-glue that binds the therapist and patient together in an important joint enterprise, and motivates the patient – and therapist- - to work hard in therapy.

Summary

We described an idiographic hypothesis-testing approach to treatment that provides an elegant strategy for providing evidence-based psychotherapy, and we illustrated the model with an example from cognitive-behavior therapy with a client who was socially anxious and depressed. The essential elements of a hypothesis-testing approach to therapy guided by a case formulation (the hypothesis) and progress monitoring data that are used to test the hypothesis are not limited to CBT and can be employed by psychotherapists using any psychotherapy modality or orientation (e.g., see Eells, 2007) .

Cognitive-behavior therapy can seem to be the route to evidence-based practice because so many randomized controlled trials have shown CBT to be effective, and fewer randomized controlled trials have been conducted to examine efficacy of other modalities of psychotherapy. However, the evidence-based practice of psychotherapy and psychotherapy based on ESTs are not one and the same. In fact, sometimes, oddly enough, training in ESTs seems to impede clinicians from using an empirical hypothesis-testing approach to their work (Shiloff, 2015). Strikingly, most ESTs do not include one of the essential elements of evidence-based psychotherapy: progress monitoring. Collecting data to monitor progress and test the formulation hypothesis is, we argue, an essential element of an empirical approach to clinical work. In addition, progress monitoring is an evidence-based practice (see reviews by Carlier et al., 2012 and

Goodman et al., 2013). As a result, psychotherapy trainees who are learning to provide evidence-based treatment by learning to adhere to empirically-supported treatment (EST) protocols often fail to learn to use an empirical hypothesis-testing approach to their cases (Shiloff, 2015). Instead these trainees learn to make clinical decisions by searching the treatment manual for the answer to their question.

Providing psychotherapy based on an individualized case formulation and the results of progress monitoring data is a difficult enterprise. Challenges clinicians face include lack of library access, and lack of the time and skills needed to digest voluminous, technical, and constantly changing literatures. Another impediment is the difficulty accessing inexpensive data collection tools for assessment and progress monitoring. Training in these difficult skills can also be difficult to access. We encourage the field to develop tools and mechanisms to address these challenges, so that practitioners have the support they need to provide evidence-based care to their patients. And we encourage trainees and experienced clinicians alike to utilize the idiographic hypothesis-testing approach described in this chapter as a guide to integrating the research evidence to support best practice with their clients.

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Figure titles

Figure 1. Case formulation-driven cognitive-behavior therapy

Figure 2. A diagram of the formulation of Ann's case

Figure 3. A diagram of the formulation of Ann's social anxiety

Figure 4. Ann's scores on the Beck Depression Inventory and Burns Anxiety Inventory
during treatment