The Importance of Theory in Cognitive Behavior Therapy:

A Perspective of Contextual Behavioral Science

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Abstract

For the past 30 years, generations of scholars of cognitive behavior therapy (CBT) have expressed concern that clinical practice has abandoned the close links with theory that characterized the earliest days of the field. There is also a widespread assumption that a greater working knowledge of theory will lead to better clinical outcomes, although there is currently very little hard evidence to support this claim. We suggest that the rise of so-called "third generation" models of CBT over the past decade, along with the dissemination of statistical innovations among psychotherapy researchers, have given new life to this old issue. We argue that theory likely does matter to clinical outcomes, and we outline the future research that would be needed to address this conjecture.

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"There is nothing so practical as a good theory" (Lewin, 1951, p. 169)

Introduction

For years, scholars of the family of psychotherapy approaches known under the broad umbrella of cognitive behavior therapy (CBT) have been calling for an increased focus on the theories that underlie applied technologies. The common theme of these appeals is that there has been a gradual erosion of the strong connection between theory and technique that characterized the field's early days, and that a renewed focus on such links will lead to more rapid and reliable advances in our understanding, development, testing, implementation, and dissemination of CBT approaches. In his 1984 presidential address of the Association for the Advancement of Behavior Therapy (now the Association of Behavioral and Cognitive Therapies; ABCT), Alan Ross lamented that "a reading of the current literature on behavior therapy suggests that the field is at risk of losing its momentum in a preoccupation with technological refinements at the expense of theoretical developments" (Ross, 1985, p. 195). Wilson and Franks (1982) similarly decried the rapid proliferation of clinical techniques decoupled from theory, suggesting that this trend could ultimately sow the seeds of the field's demise. More recently, Beck (2012) noted that "…the robustness of a therapy is based on the complexity and richness of the underlying theory. A robust theory, for example, can generate new therapies or can draw on existing therapies that are consistent with it" (p. 6). David and Montgomery (2011) proposed a new framework for defining evidence-based psychological practice that prioritizes the level of empirical support of the theory supporting a treatment. Recommendations that clinicians should develop better working knowledge of the theories underlying CBTs often are presented during discussions of how to maximize treatment outcomes, prevent treatment failures, and ameliorate treatment resistance in complex cases (McKay, Abramowitz, & Taylor, 2010; Foa & Emmelkamp, 1983; Whisman, 2008). An interorganizational task force led by the ABCT recently issued a report on doctoral training in cognitive behavioral psychology in which training in theory and even the philosophy of science underlying CBTs was emphasized (Klepac et al., 2012).

The call for greater emphasis on theory within CBT therefore spans the generations. In fact, if one were to mask the author and date, it would be hard to distinguish writings on this subject made by contemporary authors from those written over 30 years ago. There appears to exist a widespread assumption among many clinicians and researchers alike that better knowledge of theory will bear fruit in terms of improved clinical outcomes across a number of contexts. Although this notion has considerable face validity, there is a paucity of research that has directly evaluated it.

Historically, the desire for empirically-supported treatments led to testing psychotherapies in controlled clinical trials to determine their efficacy, a procedure borrowed from other medical treatments. For example, the seminal study known as the National Institute of Mental Health's Treatment of Depression Collaborative Research Program (Elkin et al., 1995) randomized patients with major depression to cognitive therapy, interpersonal psychotherapy, or antidepressant medication, and ushered in a new era of evaluating psychotherapies in large-scale and methodologically rigorous clinical trials. CBTs, given their empirical basis, inherent structure, and time-limited nature, were particularly well-suited for testing in clinical trials. As a result, CBTs became highly manualized in an effort to ensure treatment fidelity, an important component of the internal validity of such trials (Addis & Krasnow, 2000). Originally CBTs were more principle-driven and theory-dependent in the way that they were conceptualized and implemented (e.g., Goldfried & Davison, 1994). With the growth of clinical trials during the 1970s and 80s, however, treatment manuals began to focus more on how to implement specific CBT techniques and strategies and less on interventions derived from case conceptualization based on the ideographic assessment of the patient guided by an underlying theory. We are unaware of data directly comparing the level of theoretical knowledge of early practitioners of behavior therapy relative to modern CBT clinicians. Nevertheless, even a casual comparison of the field's early books and journals targeting clinicians relative to later works reveals a stark contrast in the degree of emphasis on theory.

As the evidence base for CBTs expanded due to the rapid accumulation of supportive efficacy research, the problem of how best to implement and disseminate the treatments emerged as a pressing problem (Addis, 2006). Although novel psychotherapies typically begin in complex and sophisticated

forms because they are created by experienced researchers and clinicians, disseminating them to community practitioners exerts pressure to simplify them as much as possible. It is easier to train non-expert therapists to implement a set of standard techniques than it is to train them to comprehend an underlying theory. Once standard techniques are mastered, clinicians well versed in theory can potentially apply their knowledge to unique cases in order to deduce tailored interventions.

The picture is complicated further because there is no single CBT model, nor single theory underlying it. CBT is a broad umbrella term that encompasses a range of distinct therapy models (Herbert & Forman, 2011). These models share certain features, while also having distinct characteristics. The theories underlying these approaches likewise share certain commonalities (e.g., traditional respondent and operant conditioning principles), while also positing unique features. Moreover, key theoretical issues, such as the best way to understand the role of cognitive processes in treatment, are currently the subject of intense professional debate (Longmore & Worrell, 2007; Hofmann, 2008; Worrell & Longmore, 2008), and have undergone considerable changes over the years (Beck, 2005).

We believe that two developments over the past decade have added a new twist to the long-standing question about the role of theory in guiding psychotherapy. First, the question has been reinvigorated by the rise of the so-called "third wave" (also known as "third generation") models of CBT. These newer CBT approaches such as Mindfulness-Based Cognitive Therapy (Segal, Williams, & Teasdale, 2002), Dialectical Behavior Therapy (Linehan, 1993), and especially Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 2011) eschew a simplistic focus on specific techniques and strategies in favor of increased attention to the putative principles underlying behavior change, which are in turn linked with basic psychological theories (Ablon, Levy, & Katenstein, 2006; Hayes, 2004; Rosen & Davison, 2003). Second, psychotherapy treatment researchers have increasingly focused on therapy processes using component analysis studies (Borkovec & Sibrava, 2005; Lohr, DeMaio, & McGlynn, 2003) and the identification of treatment-related mediators and moderators (Kraemer, Wilson, Fairburn, & Agras, 2002). These two developments have had synergistic effects, further stimulating discussion of the role of theory in CBTs. For example, calls by proponents of third

generation approaches to focus on psychotherapy processes, rather than merely techniques, has accelerated research on the mechanisms of action in CBTs more generally. Simultaneously, more accessible and advanced statistical procedures have made it easier for researchers to investigate mechanisms of change, and have stimulated therapy innovators to evaluate the proposed theories underlying their approaches. Although the argument that understanding theory will improve clinical outcomes has been a perennial theme in the field, innovations associated with the development of third generation models of CBT, along with the development of new statistical tools, have brought this issue back into the forefront of discussion.

We should not lose sight of the fact that proponents of the utility of theory are often themselves theoreticians and may thus overestimate the importance of theory. The extent to which improving clinicians' theoretical knowledge does, in fact, result in improved clinical outcomes is ultimately an *empirical* question. The best approach to evaluating this supposition is itself complicated and will require clarification of a number of related issues. First and foremost, are there compelling reasons to hypothesize that knowledge of theory will, in fact, improve outcomes? Second, what evidence, if any, currently supports the notion that gaining a better theoretical understanding of a psychotherapeutic approach enhances outcomes over and above mere technical knowledge of the approach? Third, even if theoretical knowledge is found to accrue incremental benefits, does it pass a cost-benefit test? Fourth, if such efforts can indeed be demonstrated to be cost effective, how much theoretical knowledge and training is needed to improve outcomes? Fifth, which theory or theories should be prioritized? Presumably some theories have greater breadth, depth, precision, explanatory power, and incremental efficacy than others, making them more useful guides. Sixth, to what degree is it necessary simply to understand theory in abstract terms versus being able to apply it to individual cases? And seventh and perhaps most fundamentally, what exactly do we mean by the term "theory"? We will briefly explore these and related questions regarding the role of theory, using ACT in particular as a case in point[1].

[1] We focus on ACT as the prototypical "third-generation" model of CBT for two reasons. First, it has received the most research attention to date of these various approaches. Second, as elaborated below, it

What is "Theory?"

The word "theory" derives from the Greek *theoria*, meaning looking at, viewing, beholding, or contemplation (Oxford English Dictionary, 2013). This sense of perspective is reflected in its modern use in the context of psychotherapy as a set of basic concepts and principles, along with statements that describe their interactions, which can be used to describe, predict, and guide intervention with respect to specific behavioral and psychological phenomena. The concepts that are the building blocks of theories can be generalizations directly derived from sensory experience (e.g., "reinforcement"), or abstractions of these generalizations that are linguistically coherent with other concepts, but are farther removed from specific perceptual experiences (e.g., "recovery" or "well-being"). Moreover, although some concepts fit the classical Aristotelian definition of meeting necessary and sufficient criteria, more commonly psychological concepts have indistinct and overlapping boundaries, as described by prototype theory (Rosch, 1983). Psychological theories can range from the very general and abstract to the more focused and applied. In fact, one can think of theories along a continuum, linking basic philosophical assumptions on the one hand with specific assessment and intervention techniques on the other.

For example, consider the theory underlying Beck's cognitive therapy (CT; Beck, 1979)[2]. At the most abstract level are its philosophical roots which, like most mainstream psychology, are grounded in a philosophy of science known as *elemental realism*. From this perspective, the world exists independent of our senses, and comes pre-divided into units. The purpose of science is to build increasingly more accurate models that describe this world, that effectively carve nature at its joints, and that describe how these constituent pieces interact. In this sense, statements about the world can be objectively true or false in terms of how well they model underlying reality. Following from these philosophical assumptions, CT theory posits various concepts such as schemas, conditional assumptions, and automatic thoughts, which are believed to interact with current environmental conditions to result in emotions and behavior. In turn,

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is based on a well developed theory, and it strongly emphasizes the link between theory and technique. The emphasis on ACT is not meant to imply that other approaches are not also theoretically grounded.

[2] A detailed analysis of the theory underlying CT and how it is similar to and different from ACT theory is beyond the scope of this analysis. Interested readers are referred to Dozois and Beck (2011), Forman and Herbert (2009), and Herbert and Forman (in press).

models of specific clinical phenomena such as depression or panic disorder are built from these more general concepts. Clinical strategies and techniques, which may be derived from the basic theoretical concepts, are guided by these clinical models.

ACT is similarly undergirded by philosophical assumptions. In fact, examining ACT's philosophical assumptions helps to bring into relief the assumptions of CT described above, which are often overlooked or taken for granted. In contrast to CT, ACT is based on a pragmatic philosophy of science known as functional contextualism (Hayes, 1993). This perspective sidesteps ontological questions about the ultimate nature of reality in favor of a pragmatic focus on what works in a given context (Barnes-Holmes, 2000). There is no assumption that the world comes pre-divided into constituent parts. Rather, all classifications, concepts, and descriptions of mechanisms are viewed as social constructions and are evaluated with respect to how well they work with respect to a defined goal. A concept that is "true" (in the sense of being useful) in one context may therefore not be "true" in another. That is, the world is "textured" in such a way that some theories work better than others with regard to a given goal. This philosophy forms the basis of a behavioral theory of language and cognition known as relational frame theory (Barnes-Holmes, Barnes-Holmes, McHugh, & Hayes, 2004; Hayes, Barnes-Holmes, & Roche, 2001). RFT is a basic theory that describes the powerful effects of language on human psychology. Like many basic scientific theories, RFT is not especially accessible to non-experts, and uses unfamiliar terms (e.g., "arbitrarily applicable derived relational responding") in the name of precision. In order to make these basic concepts more useful to practicing clinicians, a more accessible model was developed, known variously as the "psychological flexibility theory" or the "hexaflex model," and a separate body of research has examined this theory (Levin, Hildebrandt, Lillis, & Hayes, 2012). Psychological flexibility theory is composed of what Hayes, Barnes-Holmes, and Wilson (2012) call "middle-level terms," which are defined as "looser functional abstractions" that serve to "orient practitioners to some features of a domain in functional contextual terms so as to produce better outcomes and to facilitate knowledge development" (p. 7). Intervention techniques and strategies,

although ultimately rooted in FC and RFT, can be conceptualized from the perspective of this more accessible "mid-level" model.

Proponents of ACT, more than any other contemporary psychotherapy approach, have stressed the interconnected nature of philosophy, basic theory, applied clinical theory, and technique, and have clearly articulated a vision of each of these levels of analysis. This unified approach is known as "contextual behavioral science" (CBS; Hayes, Barnes-Holmes, & Wilson, in press; Hayes, Levin, Plumb, Villatte, & Pistorello, in press; Ruiz, 2010).

Whether considering CT, ACT, or any other variant of the CBT family, an appreciation of this continuum of levels of analysis from philosophy to theory to technique brings into focus several considerations. First, the precision gained by more basic theoretical levels of analysis sacrifices accessibility, and vice versa. Even if a thorough understanding of basic theories underlying the major models of CBT were deemed desirable, questions immediately arise regarding how realistic it would be to train front-line clinicians in such theories. Second, although linked, concepts at one level of analysis do not directly dictate those at another. One can adopt the philosophical and theoretical perspectives associated with ACT, for example, as a platform from which to understand the techniques of CT. Likewise, one can use the philosophy and theory associated with CT to understand the clinical application of ACT. Third, a point that is often unappreciated is that one cannot avoid theory and philosophy. All psychological applications are inevitably grounded in some theory, which is in turn rooted in basic philosophical assumptions. However, these theoretical and philosophical assumptions often remain implicit and unarticulated. When a cognitive therapist guides her anxious patient to test irrational thoughts against data in order to correct systematic biases on the assumption that doing so will reduce anxiety and lead to improved functioning, she is making a host of theoretical assumptions, whether or not she realizes she is doing so. A corollary is that true theoretical eclecticism is impossible. One can borrow concepts from different theories and combine them in new ways, but one has then created yet a new theory, not an eclectic mix of the original ones. Similarly, one can utilize one theory in some circumstances and another at other times, but doing so requires a meta-theory that guides, even if

implicitly, the circumstances under which each theory is to be applied; again, this is not true eclecticism. Thus, although clinicians can choose not to examine the (implicit) theories that underlie their work, they cannot truly avoid theory altogether.

This analysis raises the question of what level of theory is necessary or desirable for clinicians to appreciate, as well as what specific theory or theories should be prioritized. Calls for clinicians to have stronger theoretical grounding have generally failed to specify the kind of theory in question. In terms of analytic levels, should clinicians routinely appreciate the philosophical assumptions that underlie the major forms of CBT? Should they become fluent in basic theories such as RFT? What about more specific theories such as particular cognitive models or psychological flexibility theory? And once the level of analysis is clarified, which specific theoretical approaches should be emphasized? There is no reason to assume that all theories work equally well as guides to effective clinical practice. These are ultimately empirical questions. Testing them will require recognition of the different possible meanings of "theory," and clear specification of the kind of theoretical knowledge under consideration.

The question of the proper role of theory in clinical practice shares similarities with the debate regarding the relative effectiveness of standardized interventions versus those based on a highly individualized case conceptualization. There is currently strong support, particularly within the CBT community, for approaches that emphasize case conceptualization (e.g., Kuyken, Padesky, & Dudley, 2009; Needleman, 1999; Norcross & Lambert, 2011; Persons, 2008). However, there are surprisingly few data to support this position. In fact, there is a paucity of research in this area, and what data do exist are not especially favorable. A number of studies raise questions about the inter-assessor reliability of case conceptualizations (Caspar et al., 2000; Eells, 2001; Persons & Bertagnolli, 1999). The few trials that have directly evaluated the relative utility of individualized treatment have generally not been supportive. For example, two early studies randomized patients to three conditions: a standardized intervention, one based on an individualized case conceptualization, and third condition in which the treatment was either *yoked to another participant's* case conceptualization (Schulte, Kuenzel, Pepping, & Schulte-Bahrenberg, 1992) or was explicitly *mismatched* to the assessment of the participant's specific problems (Nelson et al.,

1989). In both cases, there were no differences in outcomes between the two individualized conditions, and in fact some evidence of the superiority of the standard intervention. It should be noted, however, that the case conceptualizations used in these studies were quite crude relative to modern standards, and were certainly not well grounded in theory, and each study had other methodological limitations. Nevertheless, these results underscore the importance of empirical tests of the role of theory in practice. It is not enough that the value of theoretically guided practice is plausible; the burden of proof is on those who propose that theoretical knowledge improves practice to demonstrate that this is the case.

Why Theory Probably Matters: The Case of ACT

Because of its relatively well developed theoretical basis and the emphasis placed by its proponents on linking philosophy, theory, and technology (i.e., application), ACT represents a useful context for examining questions regarding the utility of a working knowledge of theory to effective clinical practice. There are at least three ways in which one might practice ACT: a) with familiarity of characteristic techniques but minimal knowledge of underlying theory, b) with a working knowledge of both technique and psychological flexibility theory, or c) with knowledge of technique, psychological flexibility theory, as well as more basic behavioral theoretical concepts, including RFT. Let us imagine three ACT therapists, each with these varying levels of theoretical understanding, facing the same challenging case. The first clinician appreciates a few key ACT principles, such as the importance of embracing rather than fighting distressing thoughts and feelings, as well as many characteristic techniques, including common metaphors and experiential exercises. She applies these techniques in a standard order, first highlighting the futility of efforts to control distressing experiences, then presenting psychological acceptance as an alternative, before moving on to enhancing the ability to distance oneself from one's experience, then on to values clarification, and so on. This approach will likely work well for many patients. In fact, the success of ACT self-help interventions (e.g., Fledderus, Bohlmeijer, Pieterse, & Schreurs, 2012; Hesser et al., 2012; Muto, Hayes, & Jeffcoat, 2011) and clinical trials following structured treatment protocols (Arch et al., 2012; Forman et al., in press; Hernandez-Lopez, 2009; Westin et al., 2011; Wetherell et al., 2011) speak to the power of such an approach.

But imagine a patient with severe generalized anxiety with panic attacks, comorbid depression, martial problems, and a history of heart disease and other problems, including multiple heart attacks. The patient initially resonates with the idea that efforts to control his distress have not worked, but despite the first ACT therapist's use of multiple standard interventions, he is unable to let go of the struggle with his disturbing thoughts and feelings. Moreover, he objects to exercises promoting psychological acceptance on the grounds that merely accepting his catastrophic thoughts and his anxiety (and especially panic) sensations may lead him to ignore the impending signs of another heart attack, precluding effective action. In fact, mindfulness meditation exercises prescribed as homework have precipitated panic attacks. He also finds the idea that he should focus his efforts on changing his behavior rather than his subjective distress to reflect the therapist's lack of appreciation of the depth of his emotional pain. The first therapist continues to invoke metaphors and to enact more experiential exercises, in hopes of breaking through what has now become an increasingly deadlocked clash in perspectives.

The second ACT therapist, who has a strong working knowledge of psychological flexibility theory, is not tied to any particular sequence of interventions, nor even to any particular techniques. After further assessment, the therapist tentatively concludes that the patient has become highly attached to an identity as a helpless victim of his medical and psychological problems. He implements interventions designed to undermine the literal truth of, and limitations associated with, this particular identity, as well as personal narratives more generally. He also recognizes the very high level of the patient's "fusion" with his distressing thoughts and feelings, and so begins defusion exercises slowly, in limited contexts, before gradually expanding them to include longer time periods, more settings, and more psychological contexts. The therapist recognizes that the patient has become so focused on his distress that he has lost touch with any larger purposes in his life. The therapist judiciously introduces values clarification and goal setting exercises, but is careful to avoid doing so in a way that would come across as dismissive of the patient's distress. A functional analysis reveals that the depression and marital problems appear to be secondary to the isolation resulting from the patient's extreme anxiety, thereby justifying focusing primarily on the latter, in anticipation that the depression will lift and marital issues resolve as the anxiety

improves. The patient begins making more progress. However, the issue of his fear of another heart attack continues to loom large, and he continues to resist fully embracing the notion of psychological acceptance for fear of dismissing signs of an impending heart attack. This, in turn, keeps him from pursuing various goal-directed activities and limits his overall quality of life.

In addition to familiarity with standard ACT techniques and psychological flexibility theory, the third ACT therapist also has a thorough grounding in basic behavioral theories, including RFT. She understands that the patient's unique history has resulted in the word "heart attack," feelings of shortness of breath, and anxiety symptoms such as tremulousness, sweaty palms, and racing thoughts, all sharing functional properties. As a result of this "stimulus equivalence," common physiological arousal has automatically come to elicit the same emotional reaction that would occur from an actual heart attack. This has resulted not only in the patient's attempts to suppress any signs of arousal, but also in hypervigilance for the appearance of any signs of arousal. Attempts to monitor and control his symptoms (known as "experiential avoidance" in ACT parlance) paradoxically – but predictably – result in greater anxiety. The therapist understands that learning is always additive, and that she cannot erase the relationship between anxiety symptoms and heart attack. But she can intervene to expand the associations with the anxiety symptoms so that they also evoke additional, less ominous, responses, while she also works to weaken the control of all of the patient's subjective experience over his behavior. This conceptualization leads her to introduce the idea that "reality testing" distressing thoughts, in this case thoughts about having a heart attack, is in fact useful in a limited sense, provided the issue at hand is truly a question of information. She helps the patient carefully frame his questions, then to examine which of these are truly about needed information, and which function maladaptively to avoid anxiety through unnecessary reassurance seeking. For the former only, the therapist works with the patient to obtain relevant data (e.g., by checking with his cardiologist about the differences between symptoms of anxiety and those of a heart attack). Once this is accomplished, the stage is then set for experiential acceptance interventions, including—when theoretically indicated—acceptance of the patient's thoughts that he is having a heart attack. There is no assumption that the information will eliminate the distressing thoughts

or feelings. But one can now move beyond ongoing "reality testing" to begin experiencing them from a more detached perspective, eventually even welcoming them openly and non-defensively, thereby minimizing their negative effects.

Of course, it is possible that the first ACT therapist with minimal theoretical grounding, or perhaps even a good clinician working from a different CBT framework, might make similar therapeutic moves based on intuition and personal experience. Our thesis, however, is that a well-developed theory provides a more reliable guide for conceptualizing and intervening with complex cases. This is not to suggest that theory completely replaces judicious clinical judgment. Applying theoretical concepts to individual cases requires considerable clinical acumen. The question is not whether clinical judgment and skill are important, but whether practice that is theoretically guided will be more effective than practice that is not.

Call for Research

As noted above, there has recently been increased attempts among the larger CBT community to link clinical interventions to basic theories of behavior change and more specific models of psychopathology. This includes renewed interest in the study of these theories in their own right. RFT, for example, has recently witnessed strong growth as evidenced in the number of manuscripts published. For example, one analysis observed an exponential growth in publications published on RFT from 1991 to 2008, totaling 62 empirical and 112 non-empirical manuscripts (Dymond et al., 2010). This body of research has sought to empirically and theoretically define RFT concepts and to test predictions derived from the theory (e.g., the effects of multiple-exemplar training). There is little question that such theoretical development is critical to better understanding the origins of psychopathology and other forms of human suffering, and to the continued development of more effective assessment, prevention, and intervention technologies. The only alternative is a piecemeal collection of observations and surreptitious discoveries, which then must be individually evaluated for their utility in various contexts.

So whereas theory may be indispensible for psychotherapy innovators and researchers, questions remain regarding the importance of theory to practicing clinicians. Addressing these questions will require a multi-pronged research program.

***Therapist surveys*.** One lesson learned from earlier efforts was that attempting to disseminate CBTs to practicing clinicians will not work as a completely "top-down" process (Addis, Wade, & Hatgis, 1999). Many clinicians have been unwilling for various reasons to alter their practices based on emerging research findings supporting specific approaches (Baker, McFall, & Shoham, 2009; Timbie, Fox, Van Basum, & Schneider, 2012). For example, Freiheit, Vye, Swan, and Cady (2004) surveyed practicing psychologists and found that the majority were not using exposure when treating anxiety disorders, despite the widespread consensus that exposure is crucial to effective treatment. We would expect a similar response if research emerged that supported theoretical knowledge in guiding treatment. Research on training clinicians in evidence-based practices suggests that a good values-intervention fit is essential for the adoption of new practices (Aarons, Sommerfeld, Hecht, Silovsky, & Chaffin, 2009). Thus, clinicians who already may be comfortable using CBT techniques but who still operate using largely opposing theoretical models (e.g., psychodynamic) may not find replacing their theory readily acceptable. Similarly, those whose theoretical knowledge is implicit, and who believe themselves to function atheoretically, may not readily appreciate the value of acquiring theoretical knowledge. Research suggests that clinicians tend to rely largely on their personal experiences and intuition when making clinical decisions (Gaudiano, Brown, & Miller, 2011; Stewart & Chambless, 2007). Thus, it may be important to ensure that therapists not only understand theory in the abstract, but also can develop personal experiences that demonstrate to them the utility of using theory to inform their practice. In addition, there are a number of emotional barriers to learning new practices, including the increased effort required and the temporary discomfort involved when trying an unfamiliar approach (Varra, Hayes, Roget, & Fisher, 2008).

Thus, it will be important to begin with national surveys of therapists and students to answer a number of related questions: 1) How do therapists currently view the role of theory in informing their

practices? Therapists tend to operate using tacit and idiosyncratic theories to guide their decisions, but their openness to learning and using specific theories related to CBTs specifically is unknown. 2) How familiar are therapists already in various theories underlying CBTs? It is possible, for example, that some therapists may be knowledgeable about certain theories, but may not regularly use them to inform their practice. Similarly, the depth of understanding can vary in ways that dramatically influence one's practices. To what extent do therapists adopt simplified versions of therapies (help patients to think more positively; help patients "get in touch" with/vocalize their emotions), and how does this play out in practice? 3) How can practicing clinicians best be taught to apply CBT theories to specific cases to improve their evidence-based practice? For example, vignettes could be used to examine therapists' ability to apply theory to treating hypothetical clinical cases in an effort to identify which areas require further training. 4) What are other practical barriers to learning CBT theories, and how can those be addressed? For example, timing and cost of training are important barriers often cited by clinicians that impede their ability to learn new practices.

The latter point underscores the importance of making theories as accessible as possible, if they are going to be useful to clinicians. For example, the original presentations of RFT (e.g., Hayes et al., 2001) emphasized theoretical precision, and as a result were difficult for non-experts to follow. Recent strides have been made to make the theory more accessible (e.g., Törneke, 2010), but even these remain inappropriate for widespread dissemination among practicing clinicians. Clearly, a great deal more work is needed in this area.

Evaluation of theories themselves. Theoretically-guided practice assumes the validity of the theory itself (where "validity" in this context refers both to a theory's internal consistency and coherence as well as its scientific support). Research is needed to evaluate the theories underlying psychotherapies, and to guide their ongoing development. This research can include studies of hypotheses derived from specific theories, as well as studies of competing hypotheses derived from different theories. As discussed above, in the case of CBS there is a rapidly developing literature evaluating hypotheses derived from RFT. Levin et al. (2012) conducted a meta-analysis of 66 laboratory-based component studies of

the ACT's psychological flexibility model and found greater effects for values, acceptance, present moment, mindfulness, and values components relative to comparison conditions.

In addition to empirical studies, conceptual analyses are also needed to evaluate various aspects of theories, including their internal consistency, explanatory power, parsimony, and degree of connection with actual intervention techniques. For instance, Hofmann and Asmundson (2008) used Gross' (2001) theory of emotion regulation in an attempt to explain the differences between characteristic CT and ACT interventions. They suggested that cognitive restructuring (characteristic of CT) and psychological acceptance (characteristic of ACT) could be considered as antecedent-focused versus response-focused emotion regulation strategies, respectively. However, as we have noted elsewhere (Gaudiano, 2011; Herbert & Forman, in press), this analysis fails on both conceptual and empirical grounds. Most centrally, the antecedent-response distinction does not map well onto the restructuring-acceptance distinction. Cognitive restructuring often takes place after the emotional response has been activated, and in this sense would be a form of response-focused emotion regulation. The ACT strategies aimed at developing nonjudgmental acceptance of distressing experience may lead over time to a change in the way events themselves are experienced and to decreased emotional arousal, so in that sense would be considered an antecedent-focused process. Thus, both CT and ACT interventions operate both before and following emotional activation. This example illustrates the important role of critical analyses of theoretical concepts, in this case with regard to the theory-technology link. Such analyses can help clarify the best targets for fruitful empirical research.

Experimental trials. Ultimately, the best way to resolve questions regarding the role of theory in clinical practice is through controlled research. Practicing clinicians could be randomized to one group in which training and supervision is limited to technical and practical aspects of the treatment versus a comparison condition in which a substantial portion of the training is devoted to building theoretical knowledge. Patient outcomes would then be assessed and compared across therapist groups. An aim of this type of study would be to determine whether training time is more productively spent on technique or on theory. Variations on this basic design could be envisioned, including comparisons of training in

different theories, parametric studies of varying amounts of theoretical training, and comparisons of different training modalities, among others. Moreover, cost-benefit analyses could be included in all of these studies. Of course, in order to draw firm conclusions it will be important to attend to methodological details, such as pre- and post-training tests of clinicians' theoretical knowledge, highly knowledgeable and competent trainers, etc., in the design and execution of such studies.

An early prototype of this kind of research was conducted by Strosahl, Hayes, Bergan, and Romano (1998). In that study, practicing Master's-level clinicians working in a community health maintenance organization were assigned to receive training in ACT theory and technique (n = 8) or no additional training (n = 10). At follow-up assessment, patients of the therapists who underwent training had significantly better outcomes on a number of measures relative to patients of therapists who did not receive the training. This study suffers from a number of methodological weaknesses, including the lack of random assignment of therapists to conditions and the absence of control conditions to rule out that receiving training in any CBT model would have resulted in better outcomes. Nevertheless, it represents an early version of the kind of study that can examine the practical impact of training in theory on clinical outcomes.

Examination of Mediators/Moderators. Researchers and clinicians are increasingly aware of the limitations in knowledge gained from so-called "horse race" trials in which two therapies are tested against each other and differences in outcomes alone are examined. First, many such trials have failed to show clear differences in outcomes among competing psychotherapies. Second, even when differences are found, these trials fail to provide clear evidence for which aspects of the treatments are responsible for those differences. It was over 50 years ago that Gordon Paul (1967) famously asked, "What treatment, by whom, is most effective for this individual with that specific problem, and under which set of circumstances?" (p. 111). In modern parlance, Paul is referring to questions related to moderation and mediation of treatment effects. Moderation refers to *who* is more likely to respond to treatment or *under what conditions* a treatment is likely to be effective. Mediation refers to *how* a treatment works or the *mechanisms through which* a treatment produces its response. Historically, it has been difficult to

examine systematically these types of empirical questions. Although procedures for exploring questions of moderation and mediation in psychotherapy trials were pioneered by Baron and Kenny (1986), many improvements have been made over recent years. The ease of use and power of these techniques, especially in smaller psychotherapy samples, have grown dramatically (Kramer et al., 2002, 2008; Preacher & Hayes, 2008).

A recent study of ACT versus traditional CBT for mixed anxiety disorders provides an example of the knowledge that can be gained from an examination of mediators and moderators. Although both treatments improved symptoms similarly (Arch et al., 2012), ACT produced somewhat greater improvements in cognitive defusion, which mediated outcomes in both treatments (Arch, Wolitzky-Taylor, Eifert, & Craske, 2012). Furthermore, in terms of moderation, CBT produced better outcomes in those with greater baseline anxiety sensitivity, whereas ACT produced greater improvements in those with comorbid depression (Wolitzky-Taylor, Arch, Rosenfiel, & Craske, 2012). Results such as these serve as tests of the theories underlying psychotherapy programs, and can lead to further developments of those theories.

Conclusion

Scholars of psychotherapy, and of CBTs in particular, have repeatedly called over the past three decades for renewed interest in theory, and there are signs that the field is beginning to heed such calls. This renewed appreciation of the role of theory is driven by the confluence of a number of factors, including the growth of "third generation" models of CBT that tend to emphasize linking technique to theory, and the development of refined statistical methods to study psychotherapy processes. Although the ideal role of theoretical knowledge in clinical practice is ultimately an empirical question, there are good reasons to hypothesize that a working knowledge of theory may lead to enhanced outcomes. Evaluating these questions will require a multi-faceted research program, which will in turn depend on first addressing a number of conceptual issues regarding the nature of theories to be examined.

The importance of examining the role of theory in clinical practice is underscored by recent initiatives to disseminate CBTs widely to front-line practitioners. Beginning in 2006 the UK

governments have been implementing the Improving Access to Psychological Therapies program (Department of Health, 2011), which has committed hundreds of millions of dollars to training thousands of therapists to provide CBT to over 600,000 people with disorders such as depression and anxiety. In the US, the VA is implementing a similar initiative to train clinicians in CBT to improve access to effective treatment among military veterans (Ruzek, Karlin, & Zeiss, in press). Taking full advantage of these efforts will require not only further theoretical developments, but also a better understanding of the role of theory in clinical practice.

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