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Science in Practice in Cognitive Behavior Therapy

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Abstract

In honor of the ABCT's 50th anniversary, I offer observations about the consumption and production of science in the clinical practice setting from the vantage point of my own professional development and the development of cognitive behavior therapy (CBT) more generally. I describe advances in the field that will promote clinicians' consumption and production of science. Two recent developments that promote practitioners' consumption of science are the field's shift from the study of disorders to the study of transdiagnostic mechanisms, and the advent of flexible modular protocols. Two advances that support practitioners' production of science include the overlapping interests of practitioners and scientists in understanding the mechanisms of action of our effective treatments, and the emergence of software and online tools that make it easy for clinicians to collect and organize the data they obtain during the course of their clinical work. Innovations that can strengthen the role of science in practice include the publication of more single case studies and increased access to evidence-based assessment tools; I describe ways the ABCT might contribute to both these initiatives.

Science in Practice in Cognitive Behavior Therapy

My title, *Science in Practice in Cognitive Behavior Therapy*, refers both to the *consumption* and the *production* of science in the clinical practice of cognitive behavior therapy. I am honored to have been invited to write this Commentary in honor of the ABCT's 50th anniversary. I am happy to have the opportunity to speak from the vantage point of the practitioner about science in practice in my own professional life and in cognitive behavior therapy more generally.

Consuming Science

I was trained at the beginning of what came to be called the EST (empirically-supported treatment) movement. I entered graduate school in 1975 (the ABCT was 9 years old). I was a student at the University of Pennsylvania, where I was fortunate enough to receive some practicum training at Aaron T. Beck's Mood Clinic in the Department of Psychiatry. I read Beck, Rush, Shaw, and Emery (1979), one of the first ESTs, in mimeographed form in 1978 before it was published in 1979, and I received some of the training given to the therapists who were participating in the first RCT of cognitive therapy for depression (Rush, Beck, Kovacs, & Hollon, 1977) that was published in the first issue of *Cognitive Therapy and Research*. The EST movement has given our clinical practice a huge and much-needed scientific foundation.

And yet when I finished my training and entered clinical practice in 1981, determined to work as an evidence-based practitioner, I struggled to use the ESTs (Persons, 2005). I struggled especially when I was supervising cases at Ricardo Munoz's Depression Clinic at San Francisco General Hospital. All the patients treated at the Depression Clinic were both depressed and medically ill, and in addition they had multiple other psychiatric, medical, and psychosocial

difficulties. How was I to use the EST manuals, which typically targeted a single problem or disorder, to guide treatment of these multiple-problem patients? Ought I provide multiple ESTs, one after the other? If so, in what order should I provide them? Wasn't there a more efficient strategy? I also confronted questions like, "Is it ethical for me to provide treatment to a patient who has a problem for which no EST is available? If so, how do I go about it?" And as the third wave of CBT crested, I confronted questions like, "Can I incorporate into a therapy that is guided primarily by Beck's model some interventions from Behavioral Activation or ACT or DBT or mindfulness-based CBT?" I confronted other questions on a daily basis that the EST manuals did not answer, including: What strategy is most likely to induce this patient to accept exposure-based treatment for his anxiety disorder?"

A key issue was that most EST protocols consist primarily of interventions. They don't give the clinician much guidance about how to select interventions or make any of the myriad of other decisions the clinician encounters. My experience as a practitioner is that implementing the intervention is the easy part. The hard part is deciding which intervention to deliver when, and how to think about and find the answer to the dozens of other questions I confront on a daily basis.

Again, my training helped me find a way forward. I was fortunate enough to have spent a year of postdoctoral study at the Behavior Therapy Unit at Temple University, where I was trained by Joseph Wolpe, Edna Foa, Ralph Turner, and Gail Steketee, among others. So I began reviewing what I had learned from Wolpe (1980) about the case formulation. I read a chapter by Ira Turkat and Stephen Maisto (Turkat & Maisto, 1985) that changed my life by describing the thoughtful application of the case formulation-driven empirical method of work to the treatment of the personality-disordered individual. I also drew on my graduate school work with Jonathan

Baron, a cognitive psychologist who helped me think about cognitive mechanisms that might underpin symptoms of formal thought disorder (Persons, 1986). [i]

A case formulation-driven approach to CBT

I began working to find a way to answer the questions I encountered in my clinical work that were not addressed by the ESTs. To do this, I imported from behavioral analysis (Meyer & Turkat, 1979) into cognitive therapy--and indeed into all of my clinical work--the notion of the functional analysis or case formulation. A case formulation is a hypothesis about transdiagnostic psychological mechanisms that cause and maintain all of the patient's symptoms and problems. (Of course the ESTs had formulations, but they were formulations of single disorders. To guide my work with my patients, I needed a formulation of the case.) In a case formulation approach to CBT, the clinician conducts an assessment to develop a hypothesis about the transdiagnostic mechanisms that cause and maintain all of the patient's problems and disorders, designs treatment that targets those mechanisms, monitors progress at every session, and uses the data to evaluate the effectiveness of the treatment and as an indirect test of the formulation hypothesis (Persons, 1989, 2008). The method gave me a strategy to select interventions and to guide my clinical decision-making. Most elegant of all, the strategy is essentially the scientific hypothesis-testing method, applied to the treatment of a single case; I could cite many behavior therapists here, and would also like to cite (Sackett, Richardson, Rosenberg, & Haynes, 1997) and the evidence-based medicine crowd.

Although the case formulation-driven approach to CBT is elegant and intellectually satisfying and solves a lot of the problems I had encountered in my efforts to use the ESTs, it is also problematic. A key problem is that the strategy involves dismantling the ESTs, taking interventions from this one and bits from other others to make a treatment plan for each patient.

After I've taken the ESTs apart, it is unclear that the treatment I am providing is evidence-based. My goal, after all, is to provide evidence-based treatment.

Several types of data provide some support for the case formulation driven approach to CBT, including data from single case series, from uncontrolled and randomized trials, and the fact that the templates used to develop the individualized formulations and the interventions used in the treatment are usually drawn from the ESTs (Persons & Hong, 2016). However, some of the key evidence supporting a case formulation-driven approach to treatment is provided by the progress monitoring data the clinician collects as part of the method. The RCT is a wonderful methodology but it does not answer all questions (Howard, Moras, Brill, Martinovich, & Lutz, 1996). In particular, it does not answer the clinician's question, namely: Is the treatment I am providing to this patient helping him or her accomplish his or her goals? To answer this question, we collect data to evaluate each treatment. This is the best answer I have to the question of whether case formulation-driven CBT is evidence-based. And it's not a bad answer. But speaking as a clinician who is striving to provide evidence-based care, it's not as good an answer as I'd like. I'd like to get more help from science. I'd like clinical researchers and treatment developers to give me more knowledge that I can easily use in my clinical practice, rather than ESTs that I have to take apart and put back together for my patient while collecting data to see if the patient benefits from the treatment I've patched together in this way.

Helpful recent developments

The good news is that several recent lines of research make it easier for clinicians to consume scientific findings and methods in their clinical work. I'll briefly discuss two of these contributions: the study of transdiagnostic mechanisms, and the advent of flexible modular treatments.

Researchers who study psychopathology are shifting their focus from disorders to transdiagnostic mechanisms. Allison Harvey and her colleagues (Harvey, Watkins, Mansell, & Shafran, 2004) were an early contributor to this thinking. The NIMH Research Domain Criteria (RDoC) project calls for investigators to focus on transdiagnostic mechanisms rather than disorders (Insel et al., 2010). And treatment developers are beginning to develop treatments that target transdiagnostic mechanisms, including work by (Dugas & Ladouceur, 2000) on intolerance of uncertainty, Egan and colleagues (Egan, Wade, Shafran, & Antony, 2014) and Fairburn, Cooper, and Shafran (2003) and others who study perfectionism, Lynch's (Lynch et al., 2013) transdiagnostic treatment for emotionally constricted individuals, including those with chronic depression, eating disorders, and some personality disorders; and ACT, a transdiagnostic treatment that targets experiential avoidance (Hayes, Strosahl, & Wilson, 1999). This shift to focus on transdiagnostic mechanisms is hugely helpful to the clinician, who needs help thinking about the entire case, not single disorders, and wants help identifying and intervening to treat mechanisms that underly multiple comorbidities.

The advent of flexible modular treatments also makes it easier for clinicians to consume science. In a flexible modular treatment, the therapist develops a formulation of the case, uses the formulation to guide intervention selection and other decision-making, and monitors progress as the treatment proceeds. Thus, the treatment manual consists of a series of intervention modules, an algorithm or profile (a sort of a case formulation) that helps the clinician identify which modules to deliver when and make other decisions, and a method for monitoring progress and obtaining feedback that is used to guide decision-making. Thus, the flexible modular treatment includes all the essential elements of a case formulation-driven approach to treatment, and allows

the therapist to carry out a formulation-driven treatment while remaining true to the EST protocol rather than by dismantling it.

Several flexible modular treatments have been developed, including the modular treatment for youths with depression, anxiety, and/or conduct problems developed by Weisz and Chorpita and colleagues (Weisz et al., 2012), the Unified Protocol for the Emotional Disorders developed by Barlow and colleagues (David. H. Barlow et al. (2011); (Thompson-Hollands, Sauer-Zavala, & Barlow, 2014)), and the Coordinated Anxiety Learning and Management (CALM) Tools for Living program, a transdiagnostic CBT applicable to multiple anxiety disorders described by (Craske, 2012), in which personalized medicine is used to select strategies in the CALM package that match the patient's profile of dysregulation. In addition, the tools developed by Michael Lambert and his colleagues (Lambert, 2010), including an outcome monitoring tool the therapist can use to monitor the patient's progress at every session, and clinical support tools that the clinician can consult to guide decision-making when the patient is not responding, can be seen as a sort of a minimalistic flexible modular treatment.

The flexible modular treatment is closer to how clinicians actually work than are the EST protocols that target a single disorder with an inflexible series of interventions. Clinicians want flexible treatments that provide decision-making assistance and that allow the clinician to respond flexibly to the patient's progress (or lack of progress) as treatment proceeds. The flexible modular treatments provide all these things. Even better, quite a bit of data support the notion that therapist responsiveness to the patient's progress in treatment produces better outcomes (Lambert & Shimokawa, 2011; Persons & Thomas, 2015).

One final and more general point: The divergence between what the disorder-focused EST offers the clinician and what the clinician needs in order to provide evidence-based

treatment points to the importance of the recommendation by Weisz (2014) that treatment developers develop their treatments in the clinical settings in which they will be used.

Producing Science

The divergence between what most of the EST literature to date provides the clinician and what the clinician wants and needs, described above, highlights the important role that clinicians can play in treatment development and the progress of knowledge in the field more generally. And integrating science and practice by conducting research in a clinical practice setting is an ideal of cognitive behavior therapists, the ABCT, and the Boulder model (Raimy, 1950). And yet it does not much happen.

Helpful recent developments

I briefly describe two recent developments that have the potential to make it easier for clinicians to make research contributions: increased interest in understanding mechanisms of change of our effective therapies, and the emergence of online and software solutions that make it easier for clinicians to collect assessment data and put it in a research database.

Although we have shown that the ESTs are efficacious, we have surprisingly limited understanding of how they work. Both researchers and clinicians are vitally interested in understanding mechanisms of change (Persons, 2007). Clinicians think about the change process for their patients on a daily basis. Clinicians who use a case formulation-driven approach to treatment and are developing and testing mechanism hypotheses and monitoring process and outcome at multiple time points during treatment, can, if they collect data on symptoms and mechanisms at multiple time points, obtain data that answer important scientific questions about the change process.

A key development that makes it easier for CB therapists to conduct research is one that is outside of CBT, and that is the exploding growth of technology that provides the clinician – and the patient -- with online and software tools that permit the collection of all sorts of data and also make it easy to store the data in databases that the clinician can use for research purposes[ii]. Of course, these tools also promote evidence-based practice.

The way forward

I offer two ideas about how to increase the numbers of clinicians who conduct and consume research: encourage single case studies, and increase access to evidence-based assessment tools.

The single case study is a research design that is eminently suited to the practitioner, whose main unit of analysis and study is the single case, and who (if he or she is providing evidence-based treatment), is routinely collecting data as part of his or her clinical practice. Single case studies can make many types of contribution. Hypotheses about symptom-mechanism relationships and the psychotherapy change process can be tested in a single case design. Single case designs can also contribute to treatment development. I find, and I am sure I am not alone, that I encounter on a daily basis symptoms of psychopathology that I find to be mysterious and incomprehensible. I also encounter many patients who have problems for which we have no ESTs, and who fail to benefit from the currently-available ESTs (Loerinc et al., 2015). Many talented clinicians have many useful and novel hypotheses about psychopathology and its treatment. Single case studies that report tests of these hypotheses can help not only these clinicians' patients, but can contribute knowledge that has the potential to lead to advances that help large numbers of patients.

And yet single case studies remain an under-appreciated research design (D. H. Barlow & Nock, 2009). The ABCT can make a contribution here in many ways. One or both of our journals could establish a section of the journal for single cases studies, appoint a single case editor, or produce a special issue devoted to single case studies. The ABCT could establish an annual award for the best single case study of the year. In view of the observation by Barlow and Nock (2009) that most graduate training programs do not train students to carry out single case studies, the ABCT could provide this training at the conference. Any or all of these steps could increase the contributions clinicians make to our research literature.

Increased access to evidence-based assessment tools would also make it easier for clinicians to contribute to the research literature. In my own clinical and research work I find a troublingly large number of impediments to the use of evidence-based assessment tools, including that many are copyright-protected, many are expensive, and some ask the clinician to submit evidence of expertise in testing that is purportedly needed to administer and interpret the measure. Current test provision strategies frequently undermine the use of empirically-supported assessment tools and harm clinicians, patients, and science. I have not been able to find this topic discussed in the literature. It merits attention. This is a complex and delicate problem, and multiple solutions are likely needed. One element of a solution might include the requirement that researchers who develop an assessment tool using federal funding be asked to post it on an easily accessible website, in the same way that data and manuscripts produced by federally-funded grants are made available. Increased access to evidence-based assessment tools will strengthen both the consumption and the production of science in practice.

I thank the reader for indulging this personal (and, given space limitations, quite selective) review of my own and CBT's intellectual journeys related to the consumption and

production of science in clinical practice. I'd like to conclude by thanking the ABCT for its support to me and all of its science-practitioner members. Thank you, ABCT and ABCT members, for all you've done to promote science in practice, and happy 50th birthday!

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Footnotes

[i] I hope the reader will indulge me for taking the opportunity in this Commentary to thank some of the people who trained and influenced me, and that readers whose contributions I do not acknowledge will forgive me. I am indebted to too many people who contributed to my learning to be able acknowledge them all.

[ii] I collect royalties from the sale of a progress monitoring tool named Willow that I worked with Kelly Koerner on in its early stages.