



Prioritizing Neuroscience in Clinical Psychology

A Review of

From Symptom to Synapse: A Neurocognitive Perspective on Clinical Psychology

by Jan Mohlman, Thilo Deckersbach, and Adam Weissman (Eds.)
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Reviewed by

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Imagine you are a professional psychologist treating patients with PTSD. You hear about a promising new intervention that uses neurobiological evidence to support its effectiveness. You decide to take a seminar on this therapy, and, as a result, you are convinced that this is the future of PTSD treatment. What convinced you that this treatment works? Was it the impressive-looking brain slides or the neuro-speak of the well-versed discussant that sold you? Despite the appeal of anything “neuro” attached to the label, there is legitimate concern that such information can be overemphasized and sometimes quasiscientific (for a great commentary on the dangers of “neuro-bunk,” see Molly Crockett’s TED talk [Beware Neuro-Bunk; Crockett, 2012]). Even well-meaning clinical psychologists can fall prey to alluring pseudoscience, especially if the subject matter is beyond their comfort level.

With this in mind, *From Symptom to Synapse: A Neurocognitive Perspective on Clinical Psychology*, edited by Jan Mohlman, Thilo Deckersbach, and Adam Weissman, is timely and much needed. Translating sound cognitive neuroscience research into applied psychological interventions for common psychiatric disorders will help the field of clinical psychology evolve in the current healthcare climate. In this sense, the editors’ mission—to bring a brain-based approach to the masses (of generalist psychologists, that is)—is admirable, albeit ambitious.

The goal outlined in the book is to promote a clinical perspective focused on mechanisms rather than symptoms, with a focus on a neurocognitive (i.e., relationships among cognitive domains and the underlying neural substrates) approach. Chapters draw from related fields and disciplines including neuroradiology, neuropsychology, cognitive and affective neuroscience, and cognitive-behavioral therapy. The impetus for the book comes from the Association for Behavioral and Cognitive Therapies (ABCT) special interest group (SIG) for neurocognitive therapies and translational research (see the SIG website for a review of their mission statement, which closely matches the book’s stated aims).

Readers may wonder why neurocognitive issues from the health, rehabilitation, and neuropsychology fields (e.g., TBI, sleep) were not included. However, as is addressed in the editors' introduction, this book is meant to fill a specific niche by covering neurocognitive applications to common psychiatric disorders (e.g., anxiety, depression, ADHD, schizophrenia, substance abuse). In short, we think this mission was accomplished. However, theirs is not the only source of such information (e.g., see Robinson, Watkins, & Harmon-Jones, 2013 and Lewis, Haviland-Jones, & Feldman Barrett, 2008, for a review of neurocognitive conceptualizations of the more prevalent disorders involving affective disturbance and the basic and nonpathological cognitive and emotional content they comprise).

Reading chapter by chapter, the book is somewhat lacking in cohesion, as the underlying theme of applying a neurocognitive perspective becomes diluted with piecemeal sections about disparate aspects of neuroscientific data. Nonetheless, the overall aim of providing research evidence on the neural correlates of certain psychiatric disorders is effective. Each chapter nicely summarizes multidisciplinary evidence that pertains to the assessment, treatment, and overall conceptualization of some of the more prevalent psychiatric disorders.

At several points, the description of the neurocognitive approach outlined in the book seemed to align with a neuropsychological framework (see Bilder, 2011 and Perry, 2009 for a review of the latter). This may be splitting hairs, but if the stated goal is for all clinical psychologists to be well-versed in neuroscience and neurocognition (rather than for all clinical psychologists to become neuropsychologists), a clearer distinction between *neurocognitive* and *neuropsychological* would be helpful for the reader. We would add that informed training in the area of neuropsychology can, in fact, advance the notion of a neurocognitive model of training, research, and practice, and dispel inaccurate notions of the field and add nuance to the understanding of neuropsychology. In essence, neuropsychology lies not in the test per se, but in the interpretation and integration of multifactorial sources of data and a solid understanding of pathological versus nonpathological functioning across brain-behavioral systems, cultures, and the lifespan. There are training programs at the graduate, internship, and postdoctoral level that promote routine exposure to neuropsychological training and applied neuroscience research for the generalist psychologist. Such programs are highly competitive and sought after, making this type of exposure limited. Given this, we support the editors' and authors' efforts in promoting training emphases in clinical neuropsychological assessment, cognitive-affective neuroscience coursework and research, and psychological interventions that are based on empirically developed models of social cognition that are culturally sensitive and have been shown to be reliable across research and clinical contexts.

Overall, the assertion within *From Symptom to Synapse*—that clinical psychologists should embrace current neuroscience findings and incorporate considerations of neurocognition and the brain-behavior relationship into their clinical work—is a worthwhile message. The understated mission, perhaps, is to continue to gently nudge the field of clinical psychology away from theoretically based practice and toward an empirically informed practice reflective of current knowledge in neuroscience. For example, if we have the tools to be able to demonstrate neurophysiological change resulting from psychological intervention, we should use these tools. This message may be preaching to the choir, so to speak, for those who have already made this shift or have already been trained in this perspective; but, it is important nonetheless.

As such, a remaining question is how receptive the intended audience (i.e., generalist clinical psychologists) will be to the neurocognitive perspective outlined in the book. It could be assumed that those who are already well trained in neuroscience (e.g., clinical neuropsychologists) or are working in a setting conducive to a neurocognitive approach (e.g., rehabilitation psychology) are already on board with this perspective and, in fact, tout it themselves. It seems that the intent of the book is to capture a wider audience (especially those engaged in therapeutic or intervention services); it is unclear how feasible this is. It is fairly safe to assume that the average generalist clinical psychologist, and perhaps even more so the average mental health clinician, does not have the requisite training or interest to maintain a truly neurocognitive perspective. Is it really feasible to expect that psychologists without formal neuropsychological training or a strong background in neuroscience would be able to approach treatment in the manner outlined (e.g., incorporating neuroimaging findings into clinical practice)? Although each component of the book has important, up-to-date information, one text cannot a well-trained clinician make. For a generalist to truly incorporate the approach being suggested, they would need additional training.

Nonetheless, the information provided in each chapter would make a worthy addition to any doctoral level clinical intervention course. Perhaps, in fact, capturing psychologists early on in their training is the preferred way to encourage more of a shift toward the neurocognitive perspective. The book is a great reference for graduate students who are progressing through their training and need a text to supplement their understanding of the neural correlates associated with the onset, maintenance, and treatment of some of the more prevalent psychiatric disorders, as well as for practicing clinical psychologists who need to reorient their working treatment perspective toward a neurocognitive framework. There are excellent, easily understood reference tables throughout the book that help clarify the utility of the neurocognitive approach (e.g., *Cognitive and Neurobiological Symptoms and Associated DSM-IV Disorders* in the introduction chapter). The recommended readings and resources listed in the second chapter are especially helpful for students seeking additional information and training. The final chapter provides excellent conceptualizations on how to shape the clinic of tomorrow using cornerstones of an empirically sound practice, including standards, norms, reliability, and validity.

The organization of the text lends itself best to targeted information seeking rather than sequential reading; although, we recommend reading the introduction chapter, the second chapter on neurocognitive tools, and the last chapter on paving the road to the neurocognitive clinic of tomorrow before reading the chapters on specific disorders. Some chapters focused more on research and some on treatment, which may be more pertinent to clinical trainees. On this note, one of the book's primary aims is to bridge the research-practice gap, and it is questionable how well this was achieved. Many clinicians, especially clinicians in training, want to know specifically how to apply a perspective or approach. A more extensive overview of how to apply specific neurocognitive interventions would have been helpful. It is, however, understandable why some application specifics were left out, as many of the neurocognitive-based treatments discussed in the book are still in incipient stages. For example, as mentioned in the chapter on ADHD, neurofeedback, an ostensibly bona fide neurocognitive intervention showing some efficacy in controlled trials (Toplak, Connors, Shuster, Knezevic, & Parks, 2008), to date offers no practice guidelines.

All in all, *From Symptom to Synapse* contains very approachable background information for those without a solid grounding in neuroscience (although we agree with the editors that

good clinical psychologists should always have a solid grounding in neuroscience). We would recommend using the book as a reference for doctoral level clinical psychology courses. Moreover, for promoting clinical psychologists' focus on grounded neuroscience rather than pseudoscientific "neuro-bunk," *From Symptom to Synapse* is an excellent start in the right direction.

Resources

Association for Behavioral and Cognitive Therapies website: www.abct.org

Neurocognitive Therapies/Translational Research Special Interest Group website: www.neurocognitive-therapies.com

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