

## Thought You Knew It All About Fear and Learning? Think Again

A review of



### **Fear and Learning: From Basic Processes to Clinical Implications**

by Michelle G. Craske, Dirk Hermans, and Debora Vansteenwegen (Eds.)

Washington, DC: American Psychological Association, 2006. 320 pp. ISBN 978-1-59147-414-2. \$69.95

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Michelle G. Craske, Dirk Hermans, and Debora Vansteenwegen's *Fear and Learning: From Basic Processes to Clinical Implications* is a superbly edited text that researchers and clinicians will find valuable. It assembles a cast of leading scholars in fear and learning to present a thorough and updated review of the literature and translate conceptual models into applied strategies for clinical treatment. From the outset, the editors emphasize a necessary fusion of classic and contemporary science to provide readers a rich historical context for the appreciation of fear and learning. The text succeeds in presenting conceptual models of fear and learning with broad implications insofar as explaining people's behaviors—models that are, one could argue, brushed over in many circles because it is distasteful to acknowledge fear as a motivating behavioral entity. This notwithstanding, the conceptual models presented fit, in many respects, with the conceptualization of psychiatric disorders such as posttraumatic stress disorder as well as more benign, subclinical avoidance behaviors that affect a great many of us (and may interfere with optimal social, occupational, or relational functioning). Overall, this text stands out as an excellent resource for students, teachers, researchers, and clinicians alike, but it is not geared toward the casual reader.

The book is divided into four distinct sections, each with its own strengths and weaknesses and each potentially appealing to a different segment of the

professional population. Basic issues on fear and learning are presented first in Section 1, followed by a review and critique in Section 2 of the literature on acquisition and maintenance of fear. Section 3 discusses research on extinction, renewal, and reinstatement of fear, and provides insights on the clinical applications of this research. The final section is devoted to thoughts about future research and clinical applications. This review examines the sections in the order they are presented in the book.

## Section 1: Basic Issues on Fear and Learning

▬ The first section of the book seems to lay the groundwork for understanding the later chapters. This section seems particularly suited for students and those who are new to the field. Experts in this area may find the first two chapters rudimentary.

▬ Chapter 1, by Eelen and Vervliet, provides a concise yet intriguing history of the behavior movement. The reader is reminded of the “big names” of early behavioral research, from Pavlov to Watson to Skinner, and is drawn into the stories of how they became the scientific legends they are today. This chapter also paints a good picture of how the behaviorist movement was started and how it evolved into what it is today, and attempts to draw lessons that are salient for our time and place in this movement. This chapter is well suited to anyone who needs to be reacquainted with psychological history.

▬ Chapter 2, by Lipp, is oriented toward those who either conduct research or read journal articles on fear and learning. Discussions in this chapter center on measurement issues involved in human and animal research and provide insight into how researchers understand the fear response. This is important information to know if one is to accurately read and critique research in this area. Likewise, this information can be helpful to the clinician who wants to understand how to measure the fear response during treatment. This chapter's placement in the book is excellent, as future chapters depend on the understanding of its content.

## Section 2: Acquisition and Maintenance of Fear

▬ This section includes the bulk of the text in this book, as many of the issues regarding the research and theories of how fears are acquired and maintained are debated. Chapter 3, by Quinn and Fanselow, provides very detailed information on the specific neuroanatomy of fear and offers a model of anxiety, fear, and panic that is based on a predatory imminence continuum. Although Quinn and

Fanselow do an excellent job explaining the neural circuitry of fear, those without at least a basic knowledge of neuroanatomy may find themselves lost, as many terms are introduced simultaneously. Still, this chapter fits in nicely with the overall aim of the volume.

Chapter 4, by Mineka and Sutton, discusses a contemporary learning theory perspective on the etiology of fears and phobias. Beginning with observational learning of fears and phobias and moving into individual differences and selective associations, the early part of this chapter lays out this theory in some detail. This portion of the chapter also provides a nice companion to another work by Mineka (Mineka & Zinbarg, 2006), which discussed how individual disorders may be acquired and maintained through learning principles. The next section of this chapter is spent critiquing the nonassociative account of fear acquisition, focusing mostly on the dubious reliability of recall data.

Chapter 5, by Davey, gives a cognitive account of the mechanisms involved in fear acquisition and maintenance. This chapter will satisfy the cognitive-behavioral scientists who argue that human cognitive factors are at play in the learning and maintaining of fear-based disorders. It highlights all of the major cognitive factors at work (e.g., attention, memory, interpretational and judgment biases) and discusses the role of beliefs and expectations. At each step along the way, the author backs claims by recent research, lending credence to the importance of cognitive factors in the development and maintenance of fear. The end of the chapter introduces a schematic representation of cognitive processes thought to be involved in fear acquisition and maintenance and is an effective way of tying the major points of the chapter together.

Chapter 6, by Lovibond, introduces an integrated expectancy model of fear and avoidance. Avoidance may be a significant risk factor in the development and maintenance of fear (Rapee, 2002), which makes this chapter extremely salient to clinicians as well as students and researchers. The author sets up a discussion of avoidance by presenting early findings and the two-factor theory, then proceeds to a surface-level discussion on informational factors in conditioning, associative learning, and cognitive models of anxiety and fear. These sections provide the relevant background for Lovibond to introduce his integrated expectancy model, which draws on the recent literature in a number of areas, including animal and human conditioning and clinical psychology. Readers will be impressed at the way the author clearly organizes and presents this model and will enjoy the way he self-critiques it and discusses opposing theories.

Chapter 7, by Forsyth, presents a topic that is not often discussed in the literature of anxiety disorders: emotion regulation. The authors subtitle their chapter "A Fresh Perspective on the Origins of Anxiety Disorders," which is exactly what it is. Although animal studies may elucidate the role of behavior and neural circuitry, the uniquely human abilities often become lost, including the role of language. Forsyth et al. adroitly discuss the role of emotion regulation in the development and maintenance of fear and fear-related disorders and provide thought-provoking discussion on the research and clinical implications of this role. Clinicians, researchers, and students alike will find this chapter intriguing, although perhaps for differing reasons.

### Section 3: Extinction, Renewal, and Reinstatement of Fear

The third section of this book focuses on the literature on extinction and fear renewal. It seems that this section is the one most focused on the clinical implications of the research presented within, and many new findings are discussed. Clinicians, students, and researchers will enjoy the last section because of its more pragmatic approach.

Chapter 8, by Barad, discusses the anatomical, molecular, and cellular substrates of fear extinction. This chapter, much like the third chapter, is very heavy in neuroanatomical language. Those readers without basic knowledge of neuroanatomy or neural circuitry may find this chapter difficult to grasp, as there are no diagrams to illustrate areas of the brain. Readers with knowledge in these domains will find this chapter extremely well-organized, as it discusses each brain area's role in extinction as well as relevant neurotransmitters involved. Perhaps the most exciting topic presented in this chapter is the discussion on the future of pharmacological substances that will enhance the effectiveness of psychotherapy (for a recent example of such research, see Davis, Ressler, Rothbaum, & Richardson, 2006). This discussion, however, is not very detailed, and a more in-depth presentation of this literature could have been given. Still, it motivates the reader to discover more about this topic.

Chapter 9, by Bouton, Woods, Moody, Sunsay, and García-Gutiérrez, discusses relapse and counteracting the context dependence of extinction. This chapter is perhaps more clinician oriented, presenting research on methods of preventing the relapse of extinction, but is focused almost solely on animal research. It reviews the evidence surrounding a number of methods, specifically focusing on bridging treatments wherein extinction sessions are

conducted in “the presence of contextual cues that will be encountered during relapse” (p. 196). Overall, people actually working with those who are experiencing fear and fear-based disorders will find this chapter very helpful.

☞ Chapter 10, by Vansteenwegen, Dirikx, Hermans, Vervliet, and Eelen, discusses relapse as well but is much more focused on human experiences. Indeed, the focus of the chapter is the clinical implications of mechanisms of extinction. The authors present several findings that clinicians may find extremely useful in their practices, including research on the effectiveness of the multiple context method. For researchers, the authors also lay out several areas in which further research may be fruitful. What is most appealing about this chapter is that the authors argue that an essential step between animal conditioning research and clinical findings is human conditioning research. They contend that findings in animal research do not always translate to human research, as the mechanisms in one may not be the mechanisms in the other. This discussion is often lacking in the fear and learning research, and seeing it included in this book is refreshing.

☞ Chapter 11, by Craske and Mystkowski, is the most clinically oriented of all chapters. The authors in this chapter summarize the ways basic research on exposure therapy and extinction have been translated to the clinical setting. They superbly cover a number of important topic areas, including renewal of fear, exposure duration and spacing, and excitation. Next, they deftly move into the clinical applications of the basic research. By providing a bridge between research and clinical applications, they also make clear that there are many areas that still need further research. The number of clinical recommendations based on this research that the authors can make seems small, but more work is currently being conducted. For instance, van Minnen and Foa (2006) recently published results suggesting that 30-minute imaginal exposure sessions are as effective as 60-minute imaginal exposure sessions in the treatment of posttraumatic stress disorder. One hopes that future research will offer more, and more explicit, recommendations for clinicians regarding optimal exposure methods.

#### Section 4: Final Thoughts

☞ The final section, written by the editors, attempts to tie together the previous chapters and discuss the future research and clinical issues that are expected to draw attention in fear and learning over the coming years. This last section is extremely brief, mainly because many of the topics discussed within have already been presented

in earlier chapters. The editors conclude by stating that they hope their volume “both updates the clinical field and stimulates basic scientists to address the questions of the most importance to clinical practice” (p. 244). By pulling together some of the leading authors in the field to synthesize the best research available, this book definitely achieves that goal.

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