Chapter 4

BEHAVIORAL AND FUNCTIONAL ANIMAL MODELS OF OCD

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A number of different animal models of obsessive-compulsive behavior have been proposed over the past half century, and recent veterinary models are reviewed in Chapter 3 of this volume. The current chapter focuses on a particular set of experiments conducted with mongrel dogs almost half a century ago. Those experiments, led by Richard L. Solomon and his colleagues and students, were among the most important studies ever conducted on behavioral theory of avoidance learning. Unfortunately, much of that work has been forgotten, and its relevance to understanding obsessive-compulsive disorder (OCD) has not been fully appreciated. At the time these investigations were conducted and published, neither their authors nor clinicians of the period saw the full relevance of their work to OCD as it has come to be conceptualized over the ensuing years. Solomon and his colleagues did indeed see their work and results as possibly having some relevance to human obsessions and compulsions, and a few clinicians also made connections to the human malady. Today, we have the benefit of hindsight wherein we can look again at this classic series of studies and view them from our current perspective on how to think about obsessions and compulsions and their interaction within an avoidance learning formulation.

This chapter contains four sections. First, to set the stage for understanding the relevance of the Solomon work, it is important to review formulations of OCD in an historical context. Second, the Solomon work is summarized with particular emphasis on how it relates to some current conceptions of obsessive-compulsive behavior and behavior therapy for OCD. Third, some limitations of the Solomon work for understanding obsessive-compulsive behavior are noted, and the relative utility of this work as compared with other animal models is examined. Finally and based on the Solomon work, some indications for future research in animal analogues of obsessive-compulsive behavior are presented.
Current behavioral conceptualizations of OCD presume that the complex of behavior we refer to as OCD contains two components, the obsessive or anxiety provoking component and the compulsive or anxiety reducing component. Variations of this formulation have been incorporated into the various editions of the DSM since 1980 (American Psychiatric Association, 1980, 1987, 1994, 2001) even though the DSM formulations allow for a much broader formulation as well. This two-part formulation based on the anxiety reduction function of the compulsive behavior was not always widely accepted or taken for granted. To appreciate the significance of the Solomon work on avoidance learning, it is worth noting briefly the history of how this current formulation came about within clinical circles.

**History of OCD Conceptualization in Behavior Therapy**

Early behavior therapists emerged from multiple streams of investigators who came to behavior therapy from different vantage points (Krasner, 1971; Krasner & Houts, 1984). What ended up as a recognizable band of followers under the banner of behavior therapy actually began as a number of small groups and even individual clinicians who were drawn to a behavioral approach to clinical problems as distinct from the then dominant psychoanalytic view of the 1950s in the United States and the United Kingdom. Some of the earliest efforts to treat obsessions and compulsions, mostly obsessions, came from investigators in South Africa, many of whom eventually made their way to England and the Maudsley hospital training program headed by Hans Eysenck.

As a psychiatrist with a keen interest in learning theory and experimental psychology, Joe Wolpe had to turn to his psychology colleagues to find kindred spirits in terms of thinking about clinical problems from a behavioral point of view. Among those he consulted was James G. Taylor (1897–1973) who was a Senior Lecturer in the Psychology Department of the University of Capetown from 1924 to 1962. Trained at Aberdeen University in the United Kingdom, Taylor subsequently visited the United States and eventually retired to the United Kingdom where he was for a time affiliated with the Maudsley hospital group that developed behavior therapy in the United Kingdom. Taylor subsequently published his study of perception as a behavioral process (Taylor, 1962). In the 1950s, Taylor “experimented” with various behavioral procedures for the treatment of anxiety problems. Those case studies were rarely published, so a full description of his procedures and their outcomes has not been publicly presented. In an interview with Leonard Krasner in 1969 in London, Taylor described several cases of multiple phobia and obsessions with compulsions (Krasner, L., personal communication [audiotaped interview], 1969). He utilized what we would today call graduated in vivo exposure with response prevention. For example, in a case of anxiety attacks during driving, he accompanied the patient on drives designed to evoke the anxiety reactions. He also exposed compulsive hand washers to more and more anxiety provoking circumstances and blocked the washing behavior. Only hints of this work survive in published form. In his *Psychotherapy by Reciprocal Inhibition*, Wolpe cited a conversation with Taylor that described Taylor’s treatment of obsessions, where Taylor used thought stopping to reduce the occurrence of obsessive ruminations and