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Avoidance and Decision Making in Anxiety: An Introduction to the Special Issue

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While the feeling of dread and apprehension that accompany clinically severe anxiety may be a cause of great personal suffering and discomfort, it is the often unwarranted avoidance displayed by anxious individuals that is the major root of impairment and disability, as it prevents them from engaging in social interactions, walking the streets, or attending to their feelings. Likewise, whereas obsessions can be a source of great concern to someone with obsessive-compulsive complaints, it is the avoidance behaviours performed to keep purported harm at bay, in the form of checking behaviours, rituals and compulsions, that prevent the individual from living a normal life. What's more, whereas fear typically is not fatal, avoidance can be, as when fear of flying leads to driving long distances by car instead of taking an (objectively safer) plane, or when the desire to avoid painful thoughts leads to drinking to dangerous levels.

Despite the central role of avoidance in anxiety and other clinical states, the study of avoidance behaviour has not received constant attention in the history of psychological science. Whereas avoidance learning was a topic of great scientific interest during the heydays of behaviourism, interest in the topic waned considerably with the rise of cognitive psychology, and little theoretical development in the understanding of avoidance occurred for decades, despite an enduring appreciation of the importance of avoidance in clinical psychology. The renaissance of the interest in avoidance (including avoidance learning) in basic science is of a relatively recent date, with an exponential growth of empirical and theoretical work on avoidance in the past decade (see Krypotos et al., 2015, Figure 1). This renewed interest has been accompanied by increased sophistication in the theoretical analysis of avoidance and enhanced understanding of not only the behavioural but also the neurobiological substrates of the acquisition and expression of avoidance in normal and clinical situations (see Krypotos et al., 2015, and LeDoux et al., 2017, for reviews).

Part of the reason for the fall of interest in the topic of avoidance may have been that the relation between fear and avoidance is rather complicated. While early theories of avoidance

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proposed a central role of fear in the emergence and maintenance of avoidance (e.g., Mowrer, 1951), the critical contribution of fear to sustained avoidance has since been questioned on conceptual and empirical grounds, from basic research findings as well as clinical studies. Fear and avoidance often go hand in hand, but fear can also be endured without avoidance, and avoidance can occur in the apparent absence of fear expression. As a result, studies of fear learning have tended to focus on aspects other than avoidance (e.g., Pavlovian learning). Still, given the critical role of avoidance in the burden imposed by clinically severe anxiety, and in light of the non-linear relation between avoidance and fear, a targeted understanding of the nature of avoidance and the decision-making processes that govern it is essential for a full understanding of anxious symptomatology and refinement of clinical interventions. We cannot simply suffice with understanding the fear that characterizes clinical anxiety. Fortunately, recent research and theorizing on avoidance has made great progress in enhancing our understanding of the avoidant decision making behaviour that individuals suffering from anxiety pathology display. Breaking with or adding to Mowrer's traditional two-factor theory of avoidance (Mowrer, 1951), theories have been developed in recent years that underline the important role of threat expectations (Lovibond et al., 2008, 2009), occasion setting (De Houwer, Baeyens, & Crombez, 2005), Pavlovian factors (Krypotos et al., 2014) and habit formation (LeDoux et al., 2017) in shaping avoidance behaviour and that help to understand the correlations and dissociations between fear, defensive mobilization and avoidance. Against this background, the nine articles that make up the present special issue of *Behaviour Research and Therapy* provide an overview of the state of the art of the empirical knowledge and conceptual understanding of avoidance, while at the same time providing critical pointers to avenues for further progress in basic science and clinical applications regarding avoidance behaviour and avoidant decision making in anxiety.

In the opening piece, Arnaudova et al. [this issue] provide an overview of different pathways through which avoidance can derail into excess, as is often observed in anxiety and related disorders. Inspired by basic findings in animal research and experimental cognitive psychology, they discuss a number of mechanisms that can give rise to excessive avoidance, along with potential clinical interventions that might be instrumental in reducing clinically excessive avoidance. In another review paper, Kirlic et al. [this issue] argue that, more than avoidance tendencies per se, it is the conflict between approach and avoidance drives, and dysregulated behavioural decision making in the face of such conflicts, that is critical for the understanding of human avoidance behaviour. They provide an overview of basic paradigms to study such conflicts in animals, as well as translational paradigms derived from those animal paradigms to study approach/avoidance decision making in humans (including in clinical samples) and probe its neurobiological substrates. In a thought-provoking theoretical piece, Treanor and Barry [this issue] provide a creative analysis of factors that may maintain avoidance behaviour according to a rigorous associative analysis of fear learning and extinction, with particular emphasis on the different functions that avoidance may serve according to such an analysis. This again provides for potential behavioural and pharmacological strategies to reduce avoidance in clinical anxiety, in particular as add-ons to exposure therapy, that should be evaluated in future research.

The remaining papers in the special issue are empirical in nature and shed further (and sometimes surprising) light on the relation between fear and avoidance. In line with the arguments of Kirlic et al. [this issue], the empirical reports by Rattel and colleagues [this issue] and Bublatzky et al. [this issue] demonstrate, using different procedures, how approach incentives can help to reduce avoidance behaviour in the lab, whether the avoidance is due to instructed threat (as in Bublatzky et al.'s [this issue] procedure) or to experientially acquired fear (as in Rattel et al. [this issue]). Approach incentives may thus serve to disrupt the protection-from-extinction of fear that is often produced by avoidance behaviour, breaking the vicious cycle where avoidance prevents the experiencing of corrective fear-reducing information, which in turns maintains the motivation for sustained avoidance. The protection-from-extinction that avoidance can produce is itself a central topic of the expectancy theory of avoidance (Lovibond et al., 2008, 2009). The report of Ng and Lovibond [this issue] underlines the important role that threat expectations play in the maintenance of avoidance behaviour, by demonstrating that the intention to avoid is as effective in downregulating anticipatory arousal as actual avoidance behaviour. This lends further support to the expectancy theory of avoidance, which may be regarded as one of the major new theoretical accounts of avoidance behaviour to emerge since the renaissance of interest in avoidance (Krypotos et al., 2015). In an effort to further refine theoretical conceptualizations of avoidance, Vervliet et al. [this issue] provide initial validation for the innovative proposal that subjective feelings of relief may play a critical role in reinforcing avoidance behaviour and the corresponding notion that dysregulated relief processing may be crucially involved in promoting excessive, habit-like avoidance. In understanding individual differences in the persistence of avoidant responding to threat cues in the absence of objective threat, Xiu et al.'s [this issue] empirical contribution points to an important role for differences in learning history between individuals. More specifically, they demonstrate that the endurance of avoidance in the face of Pavlovian threat extinction may critically depend on the initial reinforcement rate of avoidance behaviour. In a similar spirit, Hunt et al. [this issue] in the final contribution of the special issue provide seminal evidence for the particular role that trait differences in the willingness to endure distress and in the tendency to cope by means of suppression or distraction play in whether and when physiological fear responses give rise to deliberate avoidance, particular in response to generalized threat cues. In combination, the nine articles in the special issue provide a number of specific contributions to theoretical refinement of our understanding of avoidance in the context of anxiety and principled and testable suggestions for improvement in the clinical management of avoidance and anxiety.

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