

Psychobiological Mechanisms of Costly Avoidance Behaviour

Anneloes Hulsman

Radboud University Nijmegen

Supervised by: Dr. Floris Klumpers

Abstract

Excessive avoidance behaviour is a cardinal symptom of anxiety and depressive disorders. Recent findings show that excessive avoidance is a better predictor of poor disease outcome than current levels of anxiety and depression. Even though avoidance plays an important role in anxiety and depression, little is known about the underlying psychobiological mechanisms. Moreover, there is a lack of previous studies that assess approach-avoidance behaviour with ecologically-valid paradigms. Therefore, we developed a novel fearful avoidance task (FAT) in which multiple reward and threat levels are integrated under high arousal. Concomitantly, we measured startle responses (study 1, N=343) and neural responses (fMRI, study 2, N=29) to identify the psychobiological mechanisms that are involved in approach-avoidance decisions. In both studies, our task was successful in creating an approach avoidance conflict. In the first study we did not find a strong link between avoidance behaviour and defensive responses, suggesting that there are also other mechanisms involved in avoidance. Behavioural results suggested a role for appetitive processing, which is further investigated the second study. In the second study we found that both appetitive and defensive processes are present during presentation of the offer and anticipation of the outcome. Taken together, our results suggest that avoidance behaviour is likely driven by a combination of appetitive and defensive mechanisms. Future analyses will have to demonstrate whether the found activity in appetitive and defensive regions is indeed related to avoidance behaviour.

Keywords: avoidance, decision making, threat, reward, anxiety, depression