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## The effects of psychoeducation on thought-action fusion, thought suppression, and responsibility

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### ABSTRACT

The current study examined the effects of a psychoeducational intervention designed to target thought-action fusion (TAF) on TAF, thought suppression, and responsibility cognitions. 139 undergraduate students (25 male; 114 female) who were relatively high in TAF with respect to their peers served as participants. Immediately following intervention, individuals who had received psychoeducation regarding TAF reported significantly lower morality TAF scores than individuals who had received psychoeducation regarding thoughts in general and individuals in the control group. At the two-week follow-up assessment, the likelihood TAF scores of those who had received psychoeducation regarding TAF were significantly lower than those of the control group. In addition, the group that received psychoeducation regarding TAF was the only group that did not experience a significant increase in thought suppression from baseline to post-intervention, and was also the only group to experience an increase in both frequency of and belief in low-responsibility thoughts from baseline to follow-up. Implications are discussed.

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### 1. Introduction

The tendency to fuse one's thoughts with overt behaviors is a cognitive bias thought to underlie a variety of psychopathologies (Berle & Starcevic, 2005; Rassin, Diepstraten, Merckelbach, & Muris, 2001; Shafraan & Rachman, 2004; Shafraan, Teachman, Kerry, & Rachman, 1999). This bias, referred to as *thought-action fusion* (TAF), is believed to be comprised of two distinct elements (Shafraan, Thordarson, & Rachman, 1996). The *likelihood* component of TAF refers to the belief that experiencing an intrusive and distressing thought can increase the probability that the event will actually occur, causing harm to oneself or others. The second component, *morality*, refers to the belief that thinking about an action is ethically equivalent to actually performing the action.

Rachman (1993) first introduced the concept of TAF in the context of its occurrence in obsessive-compulsive disorder (OCD), and later concluded that TAF increases one's susceptibility for developing OCD (Rachman & Shafraan, 1999). Subsequent literature has collectively suggested that TAF is a fairly extensive construct that may be present in myriad disturbances, including Generalized Anxiety Disorder, Post-Traumatic Stress Disorder, Panic Disorder, Social Phobia, eating disorders, and depression (Berle & Starcevic,

2005; Rassin, Diepstraten et al., 2001; Shafraan & Rachman, 2004; Shafraan et al., 1999). However, TAF is not exclusive to people with mental health problems, and is prevalent in non-clinical populations as well (Zucker, Craske, Barrios, & Holguin, 2002).

An inflated sense of personal responsibility has long been thought to play an important role in the onset and maintenance of OCD (Salkovskis & Kirk, 1989). In order to operationalize the construct of dysfunctional responsibility and clarify its role in obsessional thoughts, Rachman et al. (1995) developed the Responsibility Appraisal Questionnaire (RAQ), a 36-item measure designed to assess responsibility outside of the OCD realm. Using a sample of undergraduate students, the authors found a four-factor solution for the RAQ, suggesting the existence of four discrete components of responsibility: responsibility for harm, social responsibility, a positive attitude towards responsibility, and TAF. The authors then administered the RAQ and measures of obsessive-compulsive symptoms, depression, guilt, and obsessional beliefs to a different sample of undergraduate students. The results of this second analysis corroborated the four-factor solution, suggesting that TAF is a component of exaggerated responsibility. Additionally, TAF was found to be significantly related to obsessive-compulsive symptoms, symptoms of depression, guilt, and obsessional beliefs. These correlations remained significant even after controlling for the effects of depression symptoms.

Smári and Hólmsteinnsson investigated the relationships among TAF, responsibility, intrusive thoughts, thought suppression, and

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obsessive-compulsive symptoms among undergraduate students. The results indicated that both responsibility attitudes and thought suppression mediated the relationship between intrusive thoughts and obsessive-compulsive symptoms. Interestingly, the researchers also found that controlling for TAF in the mediation analyses led to strikingly similar results to those obtained when controlling for responsibility, suggesting that TAF is highly related to responsibility. These results are consistent with those obtained by Marino, Lunt, and Negy (2008), who, using a structural equation model, found that an inflated sense of responsibility significantly predicted TAF.

Individuals often engage in cognitive avoidance to cope with the distress of an intrusive thought (Rassin, 2001). Rassin, Muris, Schmidt, and Merckelbach (2000) attempted to determine directionality in the relationship among TAF, thought suppression, and obsessive-compulsive symptoms using structural equation modeling with a sample of undergraduate students. The results indicated a model in which TAF leads to attempts at thought suppression, which in turn, predicts more obsessive-compulsive symptoms. These results support those found by Rassin, Merckelbach, Muris, and Spaan (1999) that suggested TAF may play a causal role in the development of intrusive thoughts.

Rassin (2001) empirically examined the influence of TAF and thought suppression on the development of obsession-like intrusions in undergraduate students. TAF was experimentally induced for each individual via the Sentence Completion Task (Rachman, Shafran, Mitchell, Trant, & Teachman, 1996). The Sentence Completion Task involves asking the participant to identify a loved one, subsequently presenting the participant with a form on which the sentence “I hope \_\_\_\_\_ is in a car accident” is typed, and then asking the individual to rewrite the sentence with their loved one’s name in the blank. Afterwards, the participant is asked to visualize the event occurring. Half the participants in Rassin’s study were asked to suppress thoughts of the accident while sitting quietly for five minutes, whereas the other half were explicitly told not to try to suppress any thoughts of the accident during this time. Contrary to prediction, those who were instructed to suppress did not have significantly higher anxiety scores or report an increased number of intrusive thoughts. Moreover, they spent less time thinking about the accident and rated the writing of the sentences as less morally wrong than did participants in the non-suppression group. These findings are discordant with the ‘white bear effect’ found by Wegner et al. (1987) that states that attempts at thought suppression are counterproductive insofar as they tend to result in a greater number of intrusions. Rassin attempted to reconcile this discrepancy by arguing that the paradoxical effects of thought suppression may not surpass the effects of TAF. The author further noted that even those in the non-suppression group reported having attempted to suppress their thoughts, suggesting that TAF may inevitably induce thought suppression.

Rassin, Diepstraten et al. (2001) found that cognitive-behavioral interventions significantly reduced TAF in inpatients diagnosed with anxiety disorders. This demonstration that TAF is amenable to change sparked an interest in therapeutic interventions for TAF. The effectiveness of a psychoeducational intervention aimed at minimizing the endorsement of TAF was first examined by Zucker et al. (2002). Undergraduates who scored relatively high on the Thought Action Fusion – Revised scale (Shafran et al., 1996) were randomly assigned to be in an experimental group or a control group. All participants were given measures to assess TAF and current anxiety. The experimental group heard a psychoeducational message regarding TAF that emphasized the normality and irrelevance of intrusive thoughts. Those in the control group heard a message regarding stress, its consequences, and techniques to alleviate it. After the manipulation, participants again completed the measure

assessing TAF to assess for change in endorsement. Next, the participants completed the aforementioned Sentence Completion Task used by Rassin (2001) to induce TAF, and subsequently rated their current levels of anxiety. The researchers found a significant interaction effect between group and point of assessment. Analyses of the simple main effects showed that TAF endorsement significantly decreased from pre-task to post-task in the experimental group, but not in the control group. For anxiety that was assessed by a visual analogue scale, there was also a significant interaction effect between group and time, suggesting that although both groups experienced an increase in anxiety from pre-task to post-task, the control group experienced a significantly higher increase in anxiety than the experimental group. An analysis of simple effects for this interaction revealed no significant differences between the two groups in anxiety at baseline, but there was a trend towards significance for the control group to have higher anxiety than the experimental group at post-task. For anxiety that was assessed by a state anxiety measure, there was no significant interaction effect between group and time. There was, however, a significant effect of time, meaning that the anxiety levels of both groups significantly increased from pre-task to post-task. Zucker et al. concluded that these results suggest that mere psycho-education can impact individuals’ appraisals of a disturbing, intrusive thought. Zucker, Craske, Blackmore, and Nitz (2006) followed this work by investigating the effects of a cognitive-behavioral workshop in individuals with subclinical OCD. The findings suggested that those who attended the workshop had lower average TAF scores both one month and five months after the intervention, suggesting that the effects of the intervention demonstrated longevity.

Despite the growing body of evidence suggesting that TAF underlies myriad psychological disorders, there is a paucity of research into effective methods for targeting this cognitive bias. In addition, given that thought suppression and inflated responsibility are thought to contribute to the maintenance of TAF, it is important to determine the extent to which a TAF intervention will also decrease these influencing constructs. As such, the purpose of this study was to extend Zucker et al.’s (2002) work by examining the relative effects of a brief intervention designed to specifically target TAF on not only TAF itself, but also the closely related phenomena of thought suppression and responsibility. In addition, the current study aimed to examine the stability of these effects by assessing the outcome variables both immediately following the intervention and after a period of two weeks. The interventions were in the form of a psychoeducational message that referred to either TAF, intrusive thoughts alone, or general stress. The messages regarding TAF and general stress were taken directly from Zucker et al.’s investigation. The intervention novel to the current study was the psychoeducation that discussed the presence of intrusive thoughts in a non-evaluative manner, and was included to help dismantle Zucker et al.’s findings that the invention explicitly targeting TAF lowered TAF endorsement. By including a condition that discussed the presence of intrusive thoughts more generally, our goal was to ascertain if merely attending to and being more aware of one’s thoughts could lower endorsements of the dependent variables, or if it is the information regarding the irrationality of the thoughts that is the critical component.

The current study was designed to add to the literature in several ways. First, given that TAF is prevalent in myriad psychopathologies, it is important to examine the extent to which the effects of a TAF intervention are stable in individuals with high levels of TAF in general, as opposed to only within the context of subclinical OCD. Secondly, by including a condition in which participants receive psychoeducation about intrusive thoughts in a non-evaluative manner, the current study might elucidate the

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