



Replacing intrusive thoughts: Investigating thought control in relation to OCD symptoms



Ragnar P. Ólafsson^{a, b, *}, Ívar Snorrason^c, Reynar K. Bjarnason^a,
Paul M.G. Emmelkamp^{d, e}, Daníel Þ. Ólason^a, Árni Kristjánsson^{a, f}

^a University of Iceland, Reykjavík, Iceland

^b Landspítali-University Hospital, Reykjavík, Iceland

^c University of Wisconsin-Milwaukee, Wisconsin, USA

^d University of Amsterdam, Amsterdam, The Netherlands

^e King Abdulaziz University, Jeddah, Saudi Arabia

^f Institute of Cognitive Neuroscience, University College London, UK

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ABSTRACT

Background and objectives: Control of obsessive thoughts in Obsessive Compulsive Disorder (OCD) involves both avoidance and removal of undesirable intrusive thoughts. Thought suppression tasks tap both of these processes but experimental results have been inconsistent. Experimental tasks allowing more focused study of the processes involved in controlling intrusive thoughts may be needed. In two experiments, control over neutral, standardized intrusive and personal intrusive thoughts was investigated as participants attempted to replace them with neutral thoughts.

Methods: Non-selected university students (Experiment 1: $N = 61$) and university students scoring high and low on self-report measure of OC symptoms (Experiment 2: $N = 40$) performed a computerized thought replacement task.

Results: In experiment 1 replacing personal intrusive thoughts took longer than replacing neutral thoughts. Self-reports showed that intrusive thoughts were rated more difficult to replace and were associated with greater thought reoccurrence during replacement, larger emotional reaction and more discomfort. These results were largely replicated in experiment 2. Furthermore, the high OC symptom group experienced greater overall difficulty controlling thoughts on the replacement task, experienced more recurrences of personal intrusive thoughts, larger emotional reactions and discomfort associated with them, and felt a greater urge to remove them.

Limitations: All participants were non-clinical university students, and older adults with OCD should be tested.

Conclusions: The findings are in line with cognitive behavioural theories of OCD. They support the usefulness of thought replacement as a research paradigm to study thought control in OCD and possibly other psychological conditions characterized by repetitive thoughts.

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1. Introduction

A central assumption in contemporary cognitive behavioural theories of obsessive-compulsive disorder (OCD) is that intrusive thoughts can develop into clinical obsessions if they are appraised as being personally meaningful or significant (Shafran, 2005). Dysfunctional appraisals of intrusions are more likely if people believe that they are responsible for preventing bad things from

happening (i.e., inflated responsibility; Salkovskis, 1985, 1998), tend to fuse thoughts with actual actions (i.e., thought-action fusion beliefs) or hold high moral standards (Rachman, 1997, 1998). This will invoke distress, making the thoughts a focus of subsequent control attempts to reduce discomfort and prevent negative outcomes (Rachman, 1997, 1998). The efficiency of such thought control strategies can therefore play a role in the development of obsessions.

Thought suppression (Wegner, 1994; Wegner, Schneider, Carter, & White, 1987; Wenzlaff & Wegner, 2000) is frequently used by OCD patients to try to control obsessive thoughts (Freeston & Ladouceur, 1997; Ladouceur et al., 2000; Purdon, 1999; Purdon,

* Corresponding author. Faculty of Psychology, University of Iceland, Oddi v. Sturlugötu, 101 Reykjavík, Iceland. Tel.: +354 525 4000; fax: +354 525 6806.

E-mail address: ragnarpo@hi.is (R.P. Ólafsson).

Rowa, & Antony, 2007). However, clear empirical support for hypothesized paradoxical effects of suppression on frequency of intrusive thoughts is lacking (Abramowitz, Tolin, & Street, 2001; Magee, Harden, & Teachman, 2012). During thought suppression, participants typically need to keep target thoughts at bay by suppressing them, but also remove the ones that have occurred, without any specific instructions for how to do so. The frequency of thought intrusions may therefore reflect poor suppression abilities, poor removal abilities, problems with selecting appropriate strategies or all three. Experimental tasks allowing for more focused study of processes involved in controlling intrusive thoughts are needed to gain insight into the nature of thought control problems in OCD. Clark (2004) and Purdon, Gifford, McCabe, and Antony (2011) have pointed out that *thought removal* may provide an alternative way of investigating dysfunctional thought control in OCD. In a thought removal task, participants are asked to form a target thought, keep it in mind for a short while and to indicate when they have either dismissed it from their mind (thought dismissal) or replaced it with another thought (thought replacement). Longer dismissal or replacement times are indicative of difficulty with controlling the thought.

This relatively simple task has only been used in three studies to date, but has yielded interesting results. Sutherland, Newman, and Rachman (1982) compared thought dismissal times of personal intrusive and neutral thoughts under both happy and sad mood-induction conditions, in two non-clinical samples of 32 and 16 participants. Thought dismissal times were significantly longer for intrusive compared to neutral thoughts, particularly following sad compared to happy mood-induction. Edwards and Dickerson (1987) found for 43 non-clinical participants, that neutral thoughts were more difficult to form following intrusive compared to neutral thoughts, indicating that people may find disengaging attention from intrusive thought material more difficult. Finally, Purdon et al. (2011) investigated replacement of intrusive thoughts in a sample of 25 OCD patients and 25 Panic Disorder patients, using a modified computerized version of the Edwards and Dickerson (1987) task. The task consisted of two 8 min intervals where participants could think what they liked, but had to signal by key-press when a target thought came to mind, and when it had been replaced with a neutral thought. Purdon et al. (2011) measured the frequency of target-thought occurrences, target-thought replacement time, time between occurrences of the target thought and the total thought duration. They found that although OCD patients did not show significantly longer thought replacement times, their thought occurrences were more frequent and target thought duration was longer.

Thus, preliminary evidence supports the usefulness of experimental paradigms involving thought replacement but only three studies have been conducted to date with varied methodology. More studies are needed to both address methodological limitations of previous studies and to strengthen the relevance of the thought replacement paradigm for OCD. For example, subjects in the Sutherland et al. (1982) study were acquaintances, friends and colleagues that were tested face-to-face and a hand held stopwatch was used to measure thought dismissal times. Whereas Edwards and Dickerson (1987) measured thought formation and replacement times in a more accurate way in a university student sample, they did so in a face-to-face testing session. Although the findings from these two studies support the notion that personal intrusive thoughts are more difficult to remove than neutral ones, this needs to be replicated in independent samples using experimental setups reducing the risk of demand characteristics that may be elevated during face-to-face testing. It also remains to be seen whether observed differences in control of intrusive compared to neutral thoughts are related to measures of OCD

pathology. Although Purdon's et al. (2011) study counters some of these limitations, replacement of intrusive and neutral thoughts was not compared. Cognitive theories of OCD (e.g., Rachman, 1998; Salkovskis, 1998) predict that the transition from normal intrusive thought to obsession can be explained by dysfunctional appraisals of the nature and meaning of the intrusive thought resulting in greater emotional reactions and thought control difficulties. A critical step in testing these predictions may be to compare removal of neutral and intrusive thoughts, both in non-clinical subjects and in subjects differing in levels of OCD psychopathology.

The present set of experiments was designed to do this by using both non-selected and an analogue sample of students having high or low OC symptom scores. We used the thought replacement paradigm to test predictions drawn from contemporary cognitive behavioural theories on control of intrusive thoughts. A thought replacement rather than a thought dismissal task was chosen, because signalling when a thought has been dismissed can lead to the reactivation of the thought (Clark, 2004). A critical test was to compare personal intrusive thoughts to neutral thoughts to see if control over personal intrusive thoughts would be more difficult as indexed by replacement times. We also included a standardized intrusive thought with an OCD relevant theme (hitting a young girl with your car and causing minor injury) to test whether expected differences between intrusive and neutral thoughts would depend on the fact that personal intrusive thoughts are idiosyncratic in nature and participants may differ in their prior experiences with the thoughts. Multiple indicators of replacement difficulty (i.e., replacement times, estimated replacement difficulty and reoccurrence of thoughts) were used to obtain varied assessment of thought control. These methodological changes were made to further strengthen the methodological basis of the thought replacement research paradigm as a tool to study thought control in OCD.

2. Experiment 1

Based on the evidence reviewed above we predicted that both personal intrusive and standardized intrusive thoughts would be more difficult to control than a neutral thought and that this would be evident in longer thought replacement times and greater subjective estimates of replacement difficulty. Based on studies of intrusive thoughts in the general population (Freeston, Ladouceur, Thibodeau, & Gagnon, 1991; Rachman & de Silva, 1978; Salkovskis & Harrison, 1984), it was also expected that personal and standardized intrusive thoughts would invoke stronger subjective emotional reactions and discomfort compared to neutral thoughts (see also Rowa & Purdon, 2003). Finally, because emotional thought material is more likely to intrude into awareness than neutral material, personal and standardized intrusive thoughts were expected to intrude or reoccur more often than neutral thoughts after being replaced.

There is some evidence of gender differences in thought control studies (e.g., Rutledge, 1998) and we therefore recruited only females for experiment 1 because analyses by gender would require larger samples.

2.1. Method

2.1.1. Participants

Participants were students that responded to an advertisement sent via email to all female students at the University of Iceland. In total, 61 females participated. Their mean age was 32.44 years ($SD = 11.54$; ranging from 20 to 61) year. Participants were paid 1000 ISK (approx. €7).

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