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The nature and assessment of mental contamination: A psychometric analysis

Adam S. Radomsky [a,*], S. Rachman [b], Roz Shafran [c], Anna E. Coughtrey [c], Kevin C. Barber [a]

[a] Department of Psychology, Concordia University, Montreal, QC, Canada H4B 1R6
[b] Department of Psychology, University of British Columbia, Vancouver, BC, Canada
[c] School of Psychology and Clinical Language Sciences, Reading University, Reading, West Berkshire, UK

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ABSTRACT

There has been a recent expansion of interest in the concept of mental contamination. Despite a growing number of experiments and interview-based studies of mental contamination, there is a need for questionnaire-based assessment measures, and for a further understanding of the degree to which mental contamination is related to other aspects of OCD symptomatology and/or to established cognitive constructs relevant to OCD. We assessed the psychometric properties of three new measures of mental contamination (the Vancouver Obsessional Compulsive Inventory—Mental Contamination Scale, the Contamination Sensitivity Scale, and the Contamination Thought-Action Fusion Scale) in participants diagnosed with OCD ($n=57$), participants diagnosed with an anxiety disorder other than OCD ($n=24$) and in undergraduate student controls ($n=410$). For some of these analyses, our OCD sample was subdivided into those with contamination-related symptoms and concerns ($n=30$) and those whose OCD excluded concerns related to contamination fear ($n=27$). Results showed that the three new scales had excellent psychometric properties, including internal consistency, convergent and divergent validity, and discriminant validity. Further, the new measures accounted for significant unique variance in OCD symptoms over and above that accounted for by depression, anxiety, traditional contact-based contamination, and OCD beliefs. Results are discussed in terms of the clinical utility of the scales, and of the nature of contamination fears in OCD.

1. Introduction

Until recently, our understanding of contamination fear in association with obsessive–compulsive disorder (OCD) was focused on contaminants which were physical in nature and which were perceived to be threatening as a result of direct contact. As a result of these general assumptions about feared contaminants, laboratory-based studies and treatments carried out in the clinic for contamination-related OCD have tended to rely upon exposure to real or perceived contaminants. With the description and recent phenomenological and experimental work on *mental contamination*, the construct of contamination has been greatly expanded, with important implications for treatment. This manuscript presents first a review of the theory and findings relating to mental contamination, and then a psychometric analysis of the construct of mental contamination stemming from the development of three new measures: the Vancouver Obsessional Compulsive Inventory—Mental Contamination Scale (VOCI-MC), the Contamination Sensitivity Scale (CSS), and the Contamination Thought-Action Fusion Scale (CTAF).

Since the advent of behaviour therapy for OCD (which began with a then-novel approach to treating contamination-related OCD; Meyer, 1966), CBT for contamination-related problems has remained largely unchanged. Clients/patients are engaged in the process of building a hierarchy and are then encouraged to gradually and systematically expose themselves for long periods of time to an increasingly-challenging array of contaminants in an increasingly-challenging array of situations. Indeed, the fear of contamination is typically treated in a similar way to specific phobias. Although some therapists work to incorporate cognitive elements (see Obsessive Compulsive Cognitions Working Group, 1997, 2001), the treatment of contamination fear is largely behavioural in nature (although see Jones & Menzies, 1997, 1998 for one exception). This continued behavioural prominence in the treatment of contamination fear is at odds with the increasing cognitive emphasis within CBT for OCD and other anxiety disorders growing from cognitively-based theories (e.g., Clark, 1986; Clark & Wells, 1995; Ehlers & Clark, 2000; Rachman, 1997, 1998, 2002; Salkovskis, 1985; etc.), and resultant efficacious interventions.

In addition, concerns have been raised about the degree to which the prevailing behavioural approach, exposure with response prevention (ERP) is effective; "Of 118 subjects with OCD treated with 12 weeks of ERP, 48 appeared to be nonresponders" (van Balkom

* Corresponding author. Tel.: +1 514 848 2424; fax: +1 514 848 4523.
E-mail address: adam.radomsky@concordia.ca (A.S. Radomsky).

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et al., 2012, p. 366; although see Rosa-Alcázar, Sánchez-Meca, Gómez-Conesa, & Marín-Martínez, 2008 for an interesting review in which the addition of imaginal exposure to ERP for OCD was better than exposure alone). The continued focus on behavioural methods is also of concern given the high number of drop-outs and refusals associated with traditional exposure-based interventions for OCD and other anxiety disorders (e.g., Foa et al., 2005; Bados, Balaguer, & Saldaña, 2007). Our own recent work on this subject has revealed that certain cognitively-based approaches to the treatment of anxiety disorders (Milosevic & Radomsky, 2013) and of contamination-related OCD (Levy & Radomsky, in press) may indeed be more acceptable to potential clients/patients than traditional behaviour therapy (see also Parrish, Radomsky, & Dugas, 2008; Rachman, Radomsky, & Shafran, 2008; Rachman, Shafran, Radomsky, & Zysk, 2011; van den Hout, Engelhard, Toffolo, & van Uijen, 2011).

The concept of mental contamination was first described by Rachman (2004), who distinguished it from contact contamination (in which feelings of contamination arise from direct physical contact with a contaminant) by defining it as feelings of contamination that arise in the absence of direct contact with a contaminant. Indeed, this definition highlights the broad range of situations and (non-external) stimuli which can lead to mental contamination, and the ways in which elements of mental contamination may maintain, or even exacerbate instances of contact contamination and/or doubts about contamination-related situations and stimuli.

Although differences between contact and mental contamination have been well described (see Rachman, 2004, 2006), key proposed theoretical differences include the nature of contaminants (i.e., resulting from direct contact vs. resulting in the absence of direct contact), the proposed effectiveness of washing (i.e., washing is proposed to be helpful – in removing the contaminant – when the contaminant is physical, but unhelpful when it is not), the proposed source of the contaminant (i.e., an external source in contact contamination vs. a human source in mental contamination) and the proposed range of contaminants or contamination provocations (dirt, germs and/or harmful substances vs. thoughts, memories, betrayal, etc.). A preliminary study of the presence of mental contamination in a sample of 177 people with obsessive–compulsive symptoms found that 10% reported mental contamination in the absence of contact contamination, 15% reported contact contamination in the absence of mental contamination and 36% people experienced clinically relevant symptoms of both mental and contact contamination. These findings demonstrated that mental contamination is a construct that overlaps with, but is distinct from contact contamination (Coughtrey, Shafran, Knibbs, & Rachman, 2012). It became apparent through this study, and following many of those reported below, that there was a need for easy-to-use self-report measures of mental contamination and related phenomena.

In one of the initial provocation studies of mental contamination, Fairbrother and Rachman (2004) asked 50 female participants to recall and discuss an experience of sexual assault. Following the recall exercise, a surprising proportion of participants reported not only feelings of dirtiness and urges to wash, but also engaged in washing behaviour. This study was followed by a series of 'dirty kiss' experiments, which were designed to examine causal factors and mechanisms underlying mental contamination. The first of these was conducted by Fairbrother, Newth and Rachman (2005) and demonstrated that simply by listening to an audio recording of a non-consensual kiss, female undergraduate students could also be made to feel 'dirty' and engage in washing behaviour—in the absence of direct contact with a contaminant. Additional dirty kiss experiments examined the role of attractiveness (Herba & Rachman, 2007), immoral behaviour (Elliott & Radomsky, 2009), imagined physical dirt (Elliott & Radomsky, 2012), and betrayal (importantly, this study differed from the others as it involved male participants; Rachman, Radomsky, Elliott, & Zysk, 2012); all of these factors were shown to exacerbate and amplify feelings of contamination. In all of the above experiments, a number of participants engaged in actual rinsing or washing behaviour following listening to a recording. In all cases, instances of washing behaviour were associated with factors linked to mental contamination experiences, and occurred in the absence of direct contact with a contaminant (although note that mental contaminants can often also be spread via physical means; Coughtrey, Shafran, & Rachman, 2013). Furthermore, an additional experiment has demonstrated that mental contamination can be evoked following the recall of unwanted memories associated with betrayal and immorality that do not involve physical violation (Lee et al., 2013). Similarly, imagining wearing clothing belonging to undesirable and immoral people leads to feelings of contamination and urges to wash (Coughtrey, Shafran, & Rachman, under review). Though the above experiments and other studies were able to provide much information about the evocation and spread of mental contamination, none of them employed standardized self-report measures of mental contamination.

Mental contamination is postulated to occur because of the ways that individuals interpret various thoughts, images and experiences (Rachman, 2004, 2006). In an attempt to assess the degree to which appraisals/interpretations can predict mental contamination phenomenology, two studies have been conducted. The first (Radomsky & Elliott, 2009) showed that appraisals of responsibility (for the non-consensual kiss), personal violation and immorality (of the man who was described in the recording) significantly predicted unique variance in feelings of dirtiness, urges to wash and negative emotions over and above symptoms of traditional (contact) contamination, disgust, anxiety sensitivity, fear of negative evaluation and neuroticism, following a recording that portrayed a non-consensual kiss from a man who was described as engaging in a series of other immoral acts (i.e., lying, stealing, etc.). A similar study (Elliott & Radomsky, 2013) also showed that appraisals were unique predictors of mental contamination indices following a recording in which the non-consensual kiss was given by a man described as physically dirty (i.e., imagined physical dirt; beer breath, crumbs on face, etc.). Together, these studies highlight not only some of the cognitive underpinnings of mental contamination, but also some of the potential targets of treatment.

In order to build upon the above advances in our understanding of the nature and cognitive underpinnings of mental contamination, three new measures were developed to help assess and understand mental contamination. The items were based on the theory of mental contamination (Rachman, 2004) and on client descriptions of the nature of their perceived 'contaminants' as well as clinical observations. The first of these new measures, the Vancouver Obsessional Compulsive Inventory—Mental Contamination Scale (VOCI-MC) was designed to capture 'symptoms' of mental contamination. Sample items include "Some people look clean, but feel dirty" and "Having an unpleasant image or memory can make me feel dirty inside". The Contamination Sensitivity Scale (CSS) was inspired in some ways by the highly successful Anxiety Sensitivity Index (ASI; Reiss, Peterson, Gursky, & McNally, 1986), and was designed to assess the degree to which an individual may become distressed by feelings of contamination. Sample items include "It scares me when I feel dirty *inside* my body" and "If I cannot get rid of worries about contamination, I am nervous that I might be going crazy". Finally, the Contamination Thought-Action Fusion Scale (CTAF) was developed to assess a proposed fusion between thoughts about contamination and feelings and behaviour associated with contamination, building further on the construct of Thought-Action Fusion (TAF; Shafran, Thordarson, & Rachman, 1996).