

WHY ARE CERTAIN INTRUSIVE THOUGHTS MORE UPSETTING THAN OTHERS?

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Abstract. Recent cognitive behavioural models of obsessive compulsive disorder (OCD) suggest that the misinterpretation of the meaning of intrusive thoughts plays a pivotal role in the escalation of these thoughts to clinical obsessions, but less attention has been paid to why only *certain* intrusive thoughts become the focus of these misappraisals. Theoretical speculation suggests that thoughts that have relevance for an individual's value system or sense of self may be particularly salient and upsetting for people. The role of thought appraisal and contradiction of valued aspects of self were examined in a nonclinical population. It was hypothesized that participants reporting on upsetting intrusive thoughts would appraise these thoughts negatively and would report that these thoughts contradict important aspects of self to a greater degree than participants reporting on less upsetting intrusive thoughts. Participants ($N = 64$) were randomly assigned to report on either the most or least upsetting intrusive thought they had experienced. They completed questionnaires on appraisals of these thoughts, valued aspects of self, and contradiction of self. Consistent with predictions, participants reporting on more upsetting thoughts appraised these thoughts in a more negative manner and reported that these thoughts contradicted valued aspects of self to a greater degree than participants in the least upsetting thought group. These results support Salkovskis' (1985) and Rachman's (1997, 1998) cognitive behavioural models of OCD, and suggest that the degree of contradiction of self may help us understand why some obsessional thoughts are much more upsetting than others.

Keywords: Obsessions, intrusive thoughts, cognitive behavioural models, anxiety.

Introduction

Obsessive compulsive disorder (OCD) is characterized by the occurrence of unwanted and intrusive thoughts, images, or impulses (e.g., thoughts of stabbing one's children or being "contaminated" by germs) (American Psychiatric Association, 1994). These thoughts or images are recurrent and cause significant distress for the afflicted individual. Research suggests that obsessional thoughts have the same content as "normal" intrusive thoughts, which are experienced by the majority of the general population (e.g., Purdon & Clark, 1993; Rachman & de Silva, 1978; Rachman & Hodgson, 1980). Intrusive thoughts are distinguishable from obsessions by such quantitative features as frequency and intensity. Cognitive theories propose that the way a thought is interpreted or appraised plays a pivotal

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role in the escalation of normal thoughts into clinical obsessions (Rachman, 1997, 1998; Salkovskis, 1985; Salkovskis, Richards, & Forrester, 1995). However, we know that individuals typically experience a number of different intrusive thoughts. For example, in a nonclinical study, Purdon and Clark (1993) found that men reported an average of eight intrusions while women endorsed a mean of seven. Yet very few of these intrusive thoughts were highly bothersome for participants. Clinical anecdotal evidence suggests that the same is true for clinical obsessions, where individuals may endorse multiple current obsessions but are mainly bothered by one or two target obsessions. Why do *certain* intrusive thoughts become very distressing for people, while other intrusive thoughts are experienced as much less distressing or are even readily dismissed? The purpose of the current study is to examine the role of appraisal in understanding the distress caused by intrusive thoughts, and to examine some of the reasons why *certain* intrusive thoughts may become highly disturbing obsessions for people with OCD.

Cognitive theories of obsessions and relevant research

Cognitive theories of the development and persistence of obsessive, intrusive thoughts point to the importance of how “normal” intrusive thoughts are appraised in understanding this process (Rachman, 1997, 1998; Salkovskis, 1985; Salkovskis et al., 1995). For example, thoughts that activate responsibility appraisals or ideas about the need to control thoughts are more likely to become distressing and yield thought control efforts than thoughts that are evaluated in a more benign manner. Preliminary research suggests that appraisal of an obsessional thought as portending harm is an important contributor to variables such as thought frequency and controllability (e.g., Clark, Purdon, & Byers, 2000; Freeston, Ladouceur, Thibodeau, & Gagnon, 1993; Purdon & Clark, 1994a, 1994b; Thordarson, 2000).

Some theorists suggest that the appraisals described above derive from sets of general beliefs about thoughts (e.g., Purdon & Clark, 1999; Rachman, 1997, 1998; Salkovskis et al., 1995; Wells, 1997). These beliefs reflect an individual’s concern with the meaning of thoughts and thought processes (e.g., that thoughts can and should be controlled). It is suggested that individuals vulnerable to OCD may hold these views more rigidly than others, causing biased appraisals of the normal thoughts in one’s thought stream (Purdon & Clark, 1999). Some research suggests that beliefs such as “thinking of a negative event increases its likelihood” and “thought control is important and necessary” are linked with symptoms of OCD (e.g., Shafran, Thordarson, & Rachman, 1996; Steketee, Frost, & Cohen, 1998; Wells & Papageorgiou, 1998). This body of work supports the theoretical speculation that beliefs about thoughts may be a source of the biased appraisals seen in people with OCD. Although these findings suggest a relationship between beliefs and intrusive thoughts, they do not help us understand why appraisals are directed at *specific* thoughts. Why do some people find contamination thoughts highly distressing, but are not as bothered by aggressive impulses? If beliefs are a general vulnerability factor for the development of clinical obsessions and the driving force behind biased appraisals, why are all intrusive thoughts not appraised as meaningful or significant?

Perhaps one of the most intuitively obvious but understudied ideas on why certain intrusive thoughts become obsessions revolves around the importance of a particular thought to the individual and his or her sense of self. This point is alluded to by Rachman and Hodgson

(1980) and discussed more generally in elaborations of Rachman's cognitive theory of obsessions (Rachman, 1998). In this analysis Rachman notes that the thoughts that are most likely to become obsessions are those that have significance for the individual's value system. Salkovskis (1985) also argues that a defining feature of obsessions is that they are incongruent with an individual's belief system. Purdon and Clark (1999) further suggest that more upsetting intrusive thoughts are likely those that contradict any important aspect of self. For example, an intrusive thought of sex while in church will have a more negative impact on an individual for whom religiosity and morality are an integral part of his or her sense of self.

Although the previous observations are long-standing and make logical sense, there has been little research on the relationship between thought content and an individual's sense of self. Existing work has not found an association between personal religiosity or sexual background and obsessive compulsive symptoms in a heterogeneous group of individuals with different kinds of obsessions (e.g., Akhtar, Wig, Varma, Pershad, & Verma, 1975; Higgins, Pollard, & Merkel, 1992; Staebler, Pollard, & Merkel, 1993). However, specific personal values have been found to predict OCD symptoms for individuals with certain kinds of obsessions. For example, Steketee, Quay and White (1991) did find a relationship between levels of self-reported religiosity and OCD symptoms in participants who reported religious obsessions, but not for those who reported other kinds of obsessions. This suggests that the *content* of an obsession may not be arbitrary.

Other research suggests that thought content is important in other ways, lending further support to the notion that thought content may be an important variable to consider in some OCD research. For example, a study by Clark et al. (2000) found that sexual thoughts were appraised differently than nonsexual thoughts by a nonclinical sample, and Ladouceur et al. (2000) found a relationship between thought content and individuals' choices of strategies to deal with their thoughts. A study on worries and personal values suggested that although there was little relationship between specific values and specific worry topics, there were strikingly predictable relationships between personal values and more general worry indices (e.g., whether individuals worried about themselves and others in their lives or whether they worried about world issues) (Schwartz, Sagiv, & Boehnke, 2000). Finally, Purdon (2001) found that *in vivo* appraisal of thoughts as inconsistent with one's morals predicted greater distress over thought recurrences and more negative later mood state.

Taken together, these data suggest some link between personal values or sense of self and the content of obsessional thoughts. It seems reasonable that if values guide worry topics, the *contradiction* of values or important aspects of self may guide which intrusive thoughts receive the most attention and evaluation by individuals.

Current study

The purpose of the current study was twofold. The first goal was to examine the relationship between appraisal and distress caused by intrusive thoughts. The second goal was to investigate the extent to which contradiction of valued aspects of self by an intrusive thought may be important in understanding why certain thoughts are more upsetting than others for individuals. Nonclinical participants were randomly assigned to think of either the "most upsetting" intrusive thought they had experienced, or the "least upsetting" one they had experienced. Keeping this thought example in mind, participants then completed a series of

questionnaires assessing how they appraise these thoughts and how much these thoughts contradict valued aspects of self. Participants also completed a self-report measure of obsessive compulsive symptomatology.

It was hypothesized that thoughts rated as highly distressing would also be appraised as more meaningful and would activate stronger responsibility appraisals, while those experienced as only minimally distressing would be appraised as less important or meaningful. We also predicted that the more a thought contradicts a valued or important aspect of self, the more upsetting that particular thought would be for the individual.

Method

Participants

Participants were 84 undergraduate students from various disciplines at the University of Waterloo. Names of potential participants were recruited from a paid subject pool, and participants were contacted either by e-mail or by telephone. They received \$6 for completing the study. After exclusion criteria were employed (see Procedure section), data from 64 undergraduate students were retained for analyses. Mean age of participants was 20 and 72% were female.

Measures

Interpretation of Intrusions Inventory (III; Obsessive Compulsive Cognitions Working Group, 1997, 2001). This self-report measure contains 31 items reflecting interpretations or appraisals that could be made of obsessive, intrusive thoughts. Participants rate their belief in these appraisals using a scale from 0 (did not believe this idea at all) to 100 (completely convinced this idea was true). Before participants are asked to rate these items they are provided with a definition and examples of intrusive thoughts. After providing two personal examples of recent intrusive thoughts, participants are asked to rate their thoughts' frequency, recency, and the distress associated with the thought. For the purpose of this study, only one example of an intrusive thought was necessary and thus participants completed the III based on their experience of one particular intrusive thought. The 31 items of the III are divided into three subscales including *Control of thoughts* (e.g., "I must regain control of this thought"), *Importance of thoughts* (e.g., "This intrusive thought could be an omen") and *Responsibility* (e.g., "If I don't do something about this intrusive thought, it will be my fault if something terrible happens"). The III has shown good test-retest reliability and convergent validity (Obsessive Compulsive Cognitions Working Group, 2001).

Situation and Self Questionnaire (Rowa & Purdon, 2000). This questionnaire was designed specifically for the purpose of this study. It contains questions that assess the degree to which a thought is distressing because it contradicts an important or valued aspect of self. Participants were first asked to list all the attributes or characteristics that are important in how they understand themselves (e.g., being kind, smart, organized, etc.). Next, participants were asked to star the essential or central attributes from their list (i.e., the attributes they felt were centrally important to them). Finally, participants were asked to rate the degree to which the particular intrusive thought cited on the III

is upsetting because it contradicts any of these valued aspects of self (1 = not at all, 5 = extremely), and to list the attributes they felt the thought contradicted. Although no test–retest reliability data are available for this questionnaire, a similar questionnaire designed for a follow-up study has been shown to be very stable across time both in clinical (OCD) and nonclinical samples (Rowa, 2002).

Padua Inventory – Washington State University Revision (PI-WSUR; Burns, Keortge, Formea, & Sternberger, 1996). This is a 39-item self-report inventory of obsessive compulsive symptoms. The total score of this measure was used in the current research as an index of obsessive compulsive symptomatology. Research suggests that this measure has strong psychometric properties (Burns et al., 1996).

Procedure

During the testing session, participants first completed the Padua Inventory, then read a definition and examples of intrusive thoughts from the III. After reading this definition, participants were randomly assigned to think of either their (1) most upsetting intrusive thought or their (2) least upsetting intrusive thought. Instructions provided to participants were as follows:

When we think of intrusive thoughts we can often make a distinction between those that are more and less upsetting or distressing for us. For example, a person may have intrusive thoughts or urges to yell out in a quiet room, and that may not bother them. On the other hand, that person may have intrusive thoughts about whether they locked the door of their house, and that may bother them a lot, for whatever reason (and vice versa). What I'd like you to do, to the best of your ability, is think of an intrusive thought that you've had that falls more on the *more upsetting/less upsetting* end of the continuum. In other words, please think of an intrusive thought you've had that has been *very upsetting, the most upsetting you can think of/not very upsetting, if at all*. Once you have come up with an example, please write it down on the questionnaire and then answer the rest of the questions based on your experience of having that particular thought.

After thinking of an appropriate intrusive thought example, participants completed the III and the Situation and Self Questionnaire in reference to their thought example. Any confusion or questions about intrusive thought examples were clarified by the first author who was present at all testing sessions.

As a result of the inherent variability of distress caused by intrusive thoughts in a nonclinical population, some individuals who were asked to report on their most upsetting thought could not think of a highly distressing intrusive thought and vice versa. Therefore, a decision was made to only use data from participants who met the following criteria: (1) for the most upsetting thought group, data were only included if the participant also rated their thought example as causing “moderate,” “great,” or “extreme” distress (a score of 3, 4, or 5 on the III distress item) and (2) for the least distressing thought group, data were only included if the participant rated their thought example as causing “no,” “minimal,” or “a little” distress (a score of 0, 1, or 2 on the III distress item). As a result of these exclusion criteria, data from 19 participants were excluded from the original group of 84 participants ($n = 9$ from the most upsetting thought group, $n = 10$ from the least upsetting thought group). One participant's data

could not be used as he could not think of a recent example of an intrusive thought. Thus, the final sample included 64 individuals ($n = 33$ in the most upsetting thought group and $n = 31$ in the least upsetting thought group). Excluded participants did not differ from included participants on any of the variables of interest.¹

Results

Equivalence of groups

Chi-squared analyses indicated that there was an equal gender distribution in each group ($\chi^2 = .51, p = .48$), and there were no age differences across groups ($t(62) = -.64, p = .53$). Participants in the most and least upsetting thought groups were also not significantly different on total Padua Inventory scores ($t(62) = .17, p = .87$), suggesting that any differences found on variables of interest cannot be explained by differences in obsessive compulsive symptoms between the groups. Similarly, groups did not differ on the frequency ($t(62) = .29, p = .77$) or recency ($t(61) = .01, p = .99$) of their intrusive thought examples. As expected by the design of the study, participants in the most distressing thought group reported that their thought was significantly more upsetting or distressing than those in the least upsetting thought group (means = 3.9 versus 1.0; $t(62) = 15.7, p < .01$).

Thought content

Most thoughts generated by participants were classified as harm or sexual thoughts/urges (75%). Other thought examples included doubts about whether one had done something (e.g., locked the door) (17.2%), religious intrusive thoughts (1.6%), contamination intrusions (1.6%), or “other” intrusive thoughts (4.7%). There were no differences across groups in thought content.

Interpretations of intrusive thoughts

Means and standard deviations of the III subscale scores for each group can be found in Table 1. The data were screened for univariate and multivariate outliers. A MANOVA with the three III subscales as dependent variables was conducted, and the overall analysis was significant using Wilks' Lambda as the criterion ($F(3, 60) = 9.9, p < .01$). Specifically, participants reporting on their most upsetting intrusive thought had higher scores on the *Control of thoughts* subscale ($F(1, 62) = 18.1, p < .01$) and the *Responsibility* subscale ($F(1, 62) = 22.4, p < .01$) than did participants reporting on their least upsetting intrusive

¹ All analyses were re-conducted with excluded participants' data involved (total sample $n = 83$). Results followed the same general pattern as the smaller, cleaned data set, with analyses continuing to show significant differences between groups, but the means of the two groups moving slightly closer together. The ANOVA on the Importance of Thoughts subscale of the III yielded the one difference between the total and cleaned sample, with the F value falling from 3.8 to 1.8 and the trend for group differences on this subscale disappearing. This general pattern of results is what we would expect given that excluded participants were removed because the distress of their thought example too closely resembled that of the other group. Thus, we would expect that the inclusion of these participants would not dramatically change results, but would make group differences on measures of interest less discrepant.

Table 1. Means, standard deviations, and F values for the Interpretation of Intrusions Inventory (III)

III Subscales:	Most distressing thought group (<i>n</i> = 33)		Least distressing thought group (<i>n</i> = 31)		<i>F</i> values
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Control over thoughts	43.58	23.89	21.84	15.92	18.11***
Importance of thoughts	27.12	19.54	18.45	15.56	3.82 ^a
Responsibility	50.21	22.93	23.84	21.59	22.38***

****p* < .001; ^a*p* < .06.

thought. Differences between groups on the *Importance of thoughts* subscale approached significance, with individuals in the most upsetting thought group once again reporting higher scores on this subscale ($F(1, 62) = 3.8, p = .06$).

Contradiction of self ratings

Participants reported a number of important and valued self-attributes. Examples include themes of responsibility (e.g., reliable, conscientious), morality (e.g., honest, trustworthy, spiritual), being caring toward others (e.g., kind, being a good listener, compassionate), intelligence (e.g., being intelligent or rational), and others (e.g., independent, clean, stubborn, hardworking, etc.).

On the self attribute listing procedure, groups did not differ on the total number of attributes listed or on the number of starred attributes (to indicate central or essential importance of that attribute to the person) ($t(62) = .55, p < .58$; $t(62) = 1.5, p < .13$). Both groups listed a moderate number of attributes (5.7 and 5.4, respectively) and endorsed about half of these attributes (2.8 and 2.3, respectively) as being of central importance. However, in the test of our hypothesis, the most upsetting thought group endorsed that the thought was upsetting because it contradicted important and valued aspects of self to a greater degree than did the least upsetting thought group ($t(62) = 3.7, p < .01$). In other words, more upsetting thoughts were rated as going against valued aspects of self to a greater degree than less upsetting thoughts, consistent with our hypotheses. The most upsetting thought group also reported that their upsetting thought examples contradicted a greater *number* of valued attributes than did the least upsetting group (1.9 versus 1.2 attributes; $t(61) = 2.7, p < .01$) (see Table 2).

When examining simply whether the thought example contradicted any of the attributes identified as important by participants (i.e., yes/no), there were no differences between groups ($\chi^2 = 1.9, p = .17$). Further, most participants in the least upsetting thought group did endorse that the thought contradicted some valued aspect of self (23 of 31 participants) and almost half (15 of 31) reported that the thought contradicted one of the starred or central attributes. These results suggest that it is the *degree* to which the thought contradicts self attributes that is important to study in order to understand distress evoked by thoughts.

Table 2. Contradiction of self ratings between groups

	Most upsetting thought group (<i>n</i> = 33)		Least upsetting thought group (<i>n</i> = 33)		<i>T</i> values
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Number of self-attributes listed	5.73	2.02	5.45	1.96	0.55
Degree to which thought contradicted self-attributes	3.61	1.19	2.45	1.28	3.72***
Number of thoughts contradicted	1.91	1.20	1.16	0.93	2.74**

p* < .01; *p* < .001.

Discussion

The current study provides further support for the role that appraisals of intrusive thoughts play in understanding the distress associated with these thoughts. Individuals appraised their most upsetting intrusive thoughts in a more negative manner than their least upsetting intrusive thoughts, indicating that they believed that the highly upsetting thoughts needed to be controlled more and that these thoughts evoked stronger responsibility concerns. Thus, these results extend previous work (e.g., Clark et al., 2000; Freeston et al., 1992; Purdon & Clark, 1994a,b) by demonstrating that appraisals vary in a predictable way with the distress associated with intrusive thoughts.

Further, individuals reporting on their most upsetting intrusive thought rated it as contradicting valued aspects of self to a greater degree than individuals reporting on their least upsetting intrusive thought, and they indicated that the thought contradicted a greater number of self attributes. Thus, a thought's inconsistency with valued aspects of self may be an important factor in the escalation of *certain* intrusive thoughts into obsessions, as argued by Salkovskis (1985), Rachman (1998), and Purdon and Clark (1999).

Although individuals reporting on their most upsetting thought reported that these thoughts contradicted valued aspects of self to a greater *degree* than individuals reporting on their least upsetting intrusive thought, it is important to note that the majority of individuals in the least upsetting thought group still indicated that their thought example contradicted valued aspects of self to a smaller degree. These results are consistent with our basic understanding of intrusive thoughts as unwanted and inappropriate. For a thought to be considered intrusive and to be salient enough to pick out of one's stream of consciousness, this thought must violate aspects of self to some degree, which is what these data show.

After a thought becomes the focus of one's attention, it may either be laughed off or ignored, or it may become the focus of biased appraisals (Purdon & Clark, 1999). It seems likely that people who cannot ignore these thoughts are those who are less confident in their sense of self to begin with or who do not have a broadly developed sense of self. In other words, if a person's sense of self is reliant on only one or two self attributes and the thought contradicts one of these attributes, it is likely harder for the person to ignore or dismiss the thought than if their self-concept was broadly defined. This idea is similar to work by Hermans who argues that valuations (i.e., the ways in which people's self understanding is

organized) are not equally influential, with some having a stronger influence on one's sense of self than others and creating stronger affective reactions (e.g., Hermans & Oles, 1996). Further, the presence of strong beliefs about responsibility, the need to control thoughts, etc. may also make it hard for people to ignore these thoughts once they have been picked out of one's stream of consciousness. It would be interesting to test some of these ideas in future research.

This study was correlational in nature and therefore we cannot determine the direction of causality of the results. It is possible that the repetitive occurrence of distressing thoughts causes an individual to focus on the relevant dimensions of self that are activated by the thoughts (e.g., to focus on one's morality, kindness, conscientiousness, etc.). Although this explanation seems unlikely in this nonclinical population given that these thoughts are not as frequent as most obsessional thoughts, it is a concern that will need to be considered when studying a group of individuals with OCD who have obsessional thoughts multiple times a day, sometimes for many years.

It is also important to note that most of the thoughts provided by participants were aggressive, sexual, or doubt intrusions, with only a few examples of contamination, religious, or other intrusions. Thus, we cannot be sure whether the current results would extend to all types of intrusive thoughts. Also, our measure of valued self-attributes was designed for the purpose of this study, and therefore thorough psychometric data on it are not available. However, a similar measure of self-attributes we have used in subsequent studies has demonstrated good stability across administrations, lending support to the idea that patterns of valued self-attributes are stable across time. This work needs to be replicated in a clinical population of people with obsessive compulsive disorder, a task our group is currently undertaking. We are hypothesizing that the contradiction of valued and important self-attributes may help explain the pattern of obsessions seen in people with OCD.

In conclusion, the results of the current study support and extend previous research and theorizing on the development of obsessional thoughts. Although our work suggests that the contradiction of important aspects of self may be helpful in understanding why only some intrusive thoughts escalate into obsessions, there are likely other contributing factors that also need investigation (e.g., "bad luck" events; Rhéaume, Freeston, Léger, & Ladouceur, 1998). However, this study is the first to provide empirical evidence for a proposition that has long been assumed but not tested by OCD researchers, and provides a first step towards understanding why individuals with OCD end up with the symptoms that they do. With a better understanding of why some thoughts become the focus of attention, biased appraisals, and neutralizing strategies, we are in a better position to help clients with obsessional thoughts discover that their thoughts are not necessarily as arbitrary as they seem, and we can be in a better position to provide relapse prevention strategies that make use of patients' personal topics of vulnerability.

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