

## THE OCCURRENCE OF INTRUSIVE THOUGHTS TRANSFORMS MEANING IN AMBIGUOUS SITUATIONS: AN EXPERIMENTAL STUDY

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**Abstract.** It has been noted that obsessional patients appear to be equally sensitive to ideas regarding the possibility that they may cause harm by both their *actions* and by their *failure to act* (i.e., omission). This observation is discrepant with findings in non-clinical populations. The cognitive theory of obsessive-compulsive disorder suggests that it is the very *occurrence* of intrusive thoughts about potential harm that mediates this effect. In this study, 22 obsessional patients and 30 non-clinical participants were provided with details of ambiguous situations and either a negative or neutral intrusive thought pertaining to this situation. Behavioural and emotional responses to these situations were rated using self-reported measures. It was found that situations including an intrusive thought about harm were associated with higher intensity behavioural and emotional responses compared with the same situation when the intrusion was neutral. Obsessional participants scored higher overall; only on the rating of perceived responsibility was there an interaction between group and item type. These results are consistent with the idea that the occurrence of an intrusion about harm modifies both obsessional and non-clinical participants' reactions in ways that suggest obsessional, and support cognitive theories that emphasize that obsessional experiences arise from normal processes.

**Keywords:** Obsessive-compulsive disorder, intrusive thoughts, responsibility, neutralizing, specificity.

### Introduction

Current cognitive theories make the assumption that people suffering from psychological problems are subject to the same motivational influences as those who do not. This has resulted in relatively low levels of interest in the investigation of specific motivational factors in cognitive theory. Some writers (O'Kearney, 1998) have suggested that the fact that "abnormal" or "disordered" motivation is not theoretically or empirically addressed is a major failing of cognitive theories of problems such as Obsessive-Compulsive Disorder (OCD). By contrast, others have suggested that this assumption is in fact a major strength of cognitive theories, as these make the explicit assumption that the motivation of patients can be understood from a "normal" psychological perspective (Salkovskis & Freeston, 2001).

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It has been suggested that judgements of responsibility are essential to understanding more complex “normal” social motivational processes (Weiner, 1995). Weiner specifically suggests that judgements of responsibility intervene between events and the behavioural reactions exhibited. This type of link between responsibility judgements and preventative action is central to recent cognitive theories of obsessional problems (Freeston, Ladouceur, Gagnon, & Thibodeau, 1993; Rachman, 1993; Salkovskis, 1985, 1996). A clearer understanding of the way in which responsibility judgements operate may also help clarify the mechanisms involved in the origins and maintenance of OCD. The cognitive theory of obsessional problems (Rachman, 1998; Salkovskis, 1999) proposes that both distress and the tendency to neutralize obsessional thoughts arise from the way in which such thoughts are interpreted. In particular, it is proposed that an inflated sense of responsibility plays a central role in these interpretations. Although it is quite clear that obsessionals do not have the monopoly on feelings of personal responsibility for bad things that might happen, measures of responsibility make a unique and substantial contribution to the prediction of obsessional problems compared to depression or anxiety (Salkovskis, Westbrook, Davis, Jeavons, & Gledhill, 1997). The key cognitive feature of OCD is therefore to be found in the way in which people suffering from this problem typically attach a sense of personal responsibility to the occurrence and content of intrusive cognitions.

It is important to note that, when used in the context of the cognitive theory of OCD, “responsibility” is defined as having a special meaning. This meaning focuses on the person’s belief that one may be (or come to be) the cause of harm (to self or others) unless some preventative or restorative action is taken. Responsibility appraisals characteristic of obsessional problems were recently defined as:

The belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes. These outcomes are perceived as essential to prevent. They may be actual, that is, having consequences in the real world, and/or at a moral level. (Salkovskis et al., 1996)

This definition is important because the appraisal of intrusive thoughts as having implications for responsibility for harm to self or others is regarded as linking the occurrence and content of intrusive thought with both distress and the urge to engage in neutralizing behaviour. The cognitive hypothesis goes on to predict that this development of neutralizing (intended by the person to reduce threat arising from the idea of being responsible for preventable harm) will increase both the frequency of intrusive thoughts and the associated discomfort. It is also predicted that, in the longer term, responsibility-driven neutralizing will tend to increase perceived responsibility connected with particular thoughts and situations. This occurs because seeking to prevent oneself from causing harm carries an implicit acceptance of a duty to prevent such harm in the first place (and hence further inflates the sense of responsibility). These factors will tend to result in progressive intensification of the effects of obsessional thinking and neutralizing on the sufferer.

An implication of this view of responsibility in obsessionals is that it should be possible to adapt findings from non-clinical theory and research. For example, Spranca, Minsk, and Barron (1991) found that normal subjects made a clear moral distinction between commission and omission. That is, they found that people differentiated between *doing* something that might *cause* harm, and *not* doing something that could *prevent* harm. This is described as “omission bias”. Interestingly, clinical experience suggests that OCD patients may not

exhibit such a bias. For example, a patient asserted that they considered it *worse* to accidentally knock into someone on stairs and thereby risk knocking them over than turning round and pushing the person down the stairs! This type of observation suggests that some obsessional patients may regard harm caused by omission to be morally equivalent to harm caused by deliberate acts (commission). Salkovskis (1985) proposed that such omission type beliefs and other pre-morbid attitudes concerning responsibility may be important in the development of OCD (Salkovskis et al., 2000). Recent studies support this idea, indicating that such beliefs are more strongly held by OCD patients than other anxious patients (Salkovskis et al., 2000). A clearer understanding of the factors that influence omission bias may lead to a better understanding of the mechanisms involved in obsessional problems.

Weiner (1995) suggests that the normal process of inference of responsibility requires a series of steps: (i) judgement of personal causality (agency); (ii) the belief that the cause is controllable; (iii) the perception that there are insufficient mitigating circumstances and factors. Another key factor appears to be the extent to which it is possible to foresee potential consequences. Salkovskis (1996) suggested that current philosophical understanding of responsibility could be used to clarify this factor. For example:

Responsible means “to some extent culpable (either morally or in law according to the context) for *one’s own* acts or omissions”. The ascription of responsibility depends in this sense on what we believe to have been the person’s mental state at or before the time of the act or omission. “Premeditation” usually makes an objectionable act seem more culpable. *If the actor foresaw a real possibility of his causing harm* – for example by his way of driving – his act or omission will be called “reckless” and blamed accordingly. (Gregory & Zangwill, 1987, p. 681; emphasis added)

And:

More often it is the actor’s state of mind at the time of the act . . . that determines the degree to which he is regarded as blameworthy. If the act seems to have been quite accidental – if for instance he knocks over a child whom he did not see in his path – he is not blamed, unless we think he should have been aware of this as a real possibility. (Gregory & Zangwill, 1987, p. 681)

Obsessional patients by definition frequently foresee a wide range of possible negative outcomes in the form of intrusive cognitions. Their intrusions often concern things that could go wrong unless dealt with (such as passing on contamination, having hurt someone accidentally, having left the door unlocked or the gas turned on). Many obsessionals regard deliberately failing to foresee possible negative consequences of even very small actions as irresponsible. They believe that this would mean that he or she had actively chosen to allow these consequences to occur. This results in the perception that they have a duty to try to foresee negative outcomes. Unfortunately, even foreseeing a negative outcome as an intrusive thought establishes the person’s responsibility. That is, deciding *not* to act despite being aware of possible disastrous consequences becomes an active decision, making the person a potential causal agent in relation to those disastrous consequences. Thus, the occurrence of intrusive/obsessional thoughts transforms a situation where harm can only occur by omission into a situation where the person regards themselves as having “actively” chosen to allow the harm to take place. The occurrence of intrusive thoughts about negative consequences should therefore have the effect of increasing perceived responsibility, perhaps even to the point of abolishing omission bias. There is no reason to believe that this effect would be specific to people suffering from

obsessive-compulsive disorder; indeed, it would be expected to occur in anyone. However, by definition, OCD patients are more likely to experience intrusions of harm and therefore more frequently to experience the heightened sense of responsibility should such thoughts occur. They may also be more likely actively to seek to predict the range of possible negative consequences, even in innocuous or positively toned situations.

Closely linked to this ‘‘foresight’’ phenomenon, the active decision *not* to act can result in a sense of ‘‘agency’’. A person will not be concerned about sharp objects he or she has not noticed or thought about. However, if something is both noticed *and* it occurs to them (at the time or later) that harm was both possible and potentially preventable, the situation changes because NOT acting becomes an active decision rather than an omission. The occurrence of intrusive thoughts of harm and/or responsibility can thus result in the perception of responsibility for ‘‘omissions’’. The notion of a foresight phenomenon leads to a clearer understanding of the link between the occurrence of negative intrusive thoughts and the perception of responsibility that is so prominent in obsessional problems.

It would be predicted from this analysis that furnishing anyone with intrusive thoughts about harm (whether obsessional or not) should have the effect of increasing anxiety, the perception of responsibility and the likelihood of restorative and preventative action. The incorporation of intrusive thoughts into a situation should, in non-obsessional patients, have the effect of temporarily inducing an obsessive-like response. The present study seeks to evaluate this hypothesis, and to compare obsessional patients with controls in terms of their reaction to the occurrence in intrusions in an ambiguous situation.

## Method

### *Participants*

Thirty-two (16 male) non-clinical participants were drawn from a range of socio-economic groups; 30 returned usable data. To guarantee anonymity, personal information was restricted to age, sex, and occupation. The mean age of these participants was 35.4 ( $SD = 13.7$ ; Range = 17–61 years).

OCD participants were drawn from a clinical population. They were assessed using the Structured Clinical Interview for DSM-IV, and all met criteria for obsessive-compulsive disorder. As with the non-clinical sample, personal information was kept to a minimum to preserve anonymity. From an initial sample of 25 participants, 22 (13 male) returned data for analysis. The mean age of these participants was 32.3 years ( $SD = 10.4$ ; Range = 20–54 years). Table 1 shows the scores of each group on standardized clinical measures. The groups significantly differed on all measures using *t*-tests ( $p > .05$  in each instance).

### *Procedure*

All participants were mailed a package of self-report inventories. These consisted of a selection of standardized measures and one specifically designed for the study:

- Spielberger State and Trait Questionnaire (Spielberger, 1983).
- Maudsley Obsessive-Compulsive Inventory (Hodgson & Rachman, 1978).
- Beck Depression Inventory (Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961).
- Situations Questionnaire (devised for the present experiment, see below).

**Table 1.** Scores on standardized measures for non-clinical and OCD groups

	Non-clinical ( <i>SD</i> )	OCD ( <i>SD</i> )
STAI	36.2 (9.8)	52.2 (15.2)
STAITR	41.2 (11.7)	56.9 (12.4)
MOCT	5.5 (3.7)	14.0 (5.9)
MOCC	1.2 (1.6)	5.2 (2.3)
MOCW	0.9 (1.3)	2.8 (2.8)
MOCS	2.6 (0.8)	1.6 (1.5)
MOCD	2.4 (1.6)	4.9 (1.5)
BDI	8.2 (5.3)	16.3 (11.2)

STAI: Spielberger State Anxiety; STAITR: Spielberger Trait Anxiety; MOCT: Maudsley Obsessive-Compulsive inventory – Total score; MOCC: Maudsley Obsessive-Compulsive inventory – Checking; MOCW: Maudsley Obsessive-Compulsive inventory – Washing; MOCS: Maudsley Obsessive-Compulsive inventory – Slowness; MOCD: Maudsley Obsessive-Compulsive inventory – Doubting; BDI: Beck Depression Inventory.

Participants were randomly allocated to one of two experimental conditions. This simply manipulated the order in which the two variants of the Situations Questionnaires were presented i.e. one version contained neutral thoughts in scenarios 1 2 4 7 9 10 and negative thoughts in scenarios 3 5 6 8 11 12. In the second version, the representation of thoughts was reversed. All participants completed both versions of this questionnaire, with the order of presentation varied according to random allocation of experimental group. Participants were instructed to begin completion of questionnaires from the first page, without initially reading them through in order to avoid potentially confounding results by premature exposure to the alternative intrusive thought provided. As the study was performed as a postal questionnaire, it is uncertain whether this instruction was strictly adhered to.

*Situations Questionnaire.* This questionnaire, specifically devised for the experiment, consisted of initial instructions and 12 scenarios based on situations that OCD patients may react to, such as seeing some broken glass outside a school and using bleach before cooking. In each scenario the event was briefly described. For example:

“You lend a friend an old kettle. You don’t know why, because there is no reason to, but you have a sudden thought . . .”

Either a *neutral* or a *negative* thought was then supplied. Either:

“The kettle might need de-scaling before it is used”

or:

“The kettle’s cord might be frayed and my friend could be electrocuted”

The participant was then asked what they would do (if anything), allowing them free response. This information is not included in the present analysis. They were also requested to choose one of three options pertaining to the situation:

- a) Ignore the worry
- b) Ring your friend to tell them of this concern
- c) Go straight to your friend’s house to tell him

These responses were intended to present identifiable strategies: to do nothing, to remain

focused, or to engage in some type of ‘‘neutralizing’’ activity. The range of scores on Choice of Action was 6–18.

At the end of the questionnaire, participants were requested to go back and rate each scenario on several dimensions. The ratings were prompted by the following questions (the heading for each dimension is italicized):

*Anxiety*: How anxious would this scenario make you feel?

*Blame*: How much blame would you feel if anything happened afterwards?

*Distress*: How much distress would you feel at this scenario?

*Likelihood of further intrusion*: How likely is it that you would think of this event again?

*Responsibility*: How responsible would you feel for the scenario?

The above variables were rated on a range from 0–100, where 0 was not at all and 100 was extreme Anxiety/Blame/Distress, etc.

### Treatment of data

Analysis of variance indicated that the two questionnaire versions produced identical results, and that, as intended, there were no main effects or interactions involving the two parallel versions of the scale, allowing the main analysis to be carried out on the summed data. Data were analysed using repeated measures analysis of variance, with a between subjects variable (group: obsessional vs non-clinical) and one within subjects variable (item type: negative intrusion vs neutral intrusion included in the item). Where ANOVA effects indicate this was appropriate, Bonferroni corrected *t*-tests were used as multiple comparisons.

### Results

The mean scores for the experimental scale are shown in Table 2.

#### Choice of action

ANOVA indicated a main effect of item type ( $F[1,50] = 24.8, p > .0001$ ). The main effect of group was not significant ( $F > 1$ ) nor was the group X item type interaction ( $F > 1$ ). This analysis indicates that the provision of a negative intrusion significantly increases the rated

**Table 2.** Means and standard deviations for responses to negative and neutral intrusions

	OCD		Non-clinical	
	Neutral ( <i>SD</i> )	Negative ( <i>SD</i> )	Neutral ( <i>SD</i> )	Negative ( <i>SD</i> )
Choice of action	9.2 (1.65)	10.5 (1.74)	8.9 (1.88)	10.5 (1.90)
Anxiety	158.0 (97.65)	234.0 (103.05)	85.0 (55.58)	188.9 (98.77)
Blame	172.1 (109.82)	262.6 (118.32)	178.6 (87.44)	315.2 (99.20)
Distress	151.7 (88.72)	260.2 (93.32)	84.5 (66.56)	206.5 (134.66)
Responsibility	193.3 (134.43)	223.6 (127.55)	148.1 (91.78)	266.2 (136.10)
Likelihood of further intrusions	181.7 (117.83)	267.6 (100.59)	94.1 (61.50)	194.5 (91.57)

OCD *Ss* *N* = 18–22 (mean = 20.5) Non-clinical *Ss* *N* = 29–30 (mean = 29.17)

likelihood of taking further action, regardless of whether or not the respondent is suffering from OCD.

#### *Anxiety in the situation*

There was a significant main effect of item type ( $F[1,50] = 61.03, p < .0001$ ). There was also a main effect of group ( $F[1,50] = 6.7, p < .025$ ). The group X item type interaction was not significant ( $F[1,48] = 1.46, p < .20$ ). These results indicate that the provision of a negative intrusion significantly increases the rated anxiety regardless of whether or not the respondent is suffering from OCD. In addition, the obsessional patients rated their anxiety as higher independently of the occurrence or not of a negative intrusion.

#### *Blame*

There was a significant main effect of item type in the ANOVA ( $F[1,50] = 92.3; P < .0001$ ). The main effect of group was not significant ( $F[1,50] = 1.2, p < .25$ ). The group X item type interaction showed a non-significant trend ( $F[1,48] = 3.8, p = .057$ ). This analysis indicates that the provision of a negative intrusion significantly increases the blame rating.

#### *Distress*

There was a significant main effect of item type ( $F[1,50] = 54.7, p < .0001$ ). There was also a main effect of group ( $F[1,50] = 6.05, p < .025$ ). The group X item type interaction was not significant ( $F < 1$ ). These results indicate that the provision of a negative intrusion significantly increases the distress ratings regardless of whether or not the respondent is suffering from OCD. In addition, the obsessional patients rated their distress as higher both with and without the occurrence of a negative intrusion.

#### *Likelihood of further intrusion*

Item type showed a significant main effect ( $F[1,50] = 61.7, p < .0001$ ). There was also a main effect of group ( $F[1,50] = 11.5, p < .001$ ). The group X item type interaction was not significant ( $F < 1$ ). The provision of a negative intrusion significantly increases the perceived likelihood of experiencing a further intrusion regardless of whether or not the participants have OCD. The obsessional patients rated further intrusion as more likely whether the original intrusion was neutral or negative.

#### *Responsibility*

There was a significant main effect of item type in the ANOVA ( $F[1,50] = 24.5, p < .0001$ ). The main effect of group was not significant ( $F < 1$ ). The group X item type interaction was significant ( $F[1,48] = 8.6, p < .005$ ). Multiple comparisons indicate that the non-obsessional participants rated the degree of responsibility as significantly greater when a negative intrusion was included in the scenario than when the intrusion was neutral, whereas the OCD patients did not show this difference.



### Discussion

In the present study, participants were asked to rate their likely reactions to ambiguous situations in which possible negative consequences of a failure to act (presented in the description of the situation as an intrusive thought) are either included or not. It was predicted that such intrusions act to prime negative consequences, and result in a heightened likelihood of action and feelings of concern and responsibility. Once the person has foreseen possible negative consequences, whether or not to take action to prevent harm becomes an *active* decision. Thus, the occurrence of intrusions transforms a situation that might involve an omission into a situation requiring an active choice, which, in the event of harm occurring, would involve an element of conscious agency and culpability. The results of the study described here were consistent with this hypothesis. When an intrusive thought concerning possible harm was included in the description of a situation, all ratings were significantly higher. The description made it clear that the thought was an intrusion rather than a reaction to aspects of the situation per se.

The inclusion of an intrusion in the scenario significantly increased all ratings in the present study (choosing to act further, anxiety, feelings of blame, distress, likelihood of further intrusion, and perceived responsibility). Significant differences between obsessional patients and controls were found for anxiety, distress and likelihood of further intrusion. The only significant interaction between group and the inclusion of an intrusion was on the responsibility ratings. Multiple comparisons indicated that the inclusion of an intrusion increased perceived responsibility ratings in the non-clinical participants, but did not do so in the obsessional patients. There were no other differences. This finding leads to the very tentative suggestion that obsessional patients may be less sensitive to the inclusion of an intrusion about harm by the experimenter because they have a tendency to spontaneously experience such intrusions themselves, as indicated by the overall elevated ‘likelihood of intrusion’ scores.

This preliminary study has a number of problems that should be dealt with in future research on the importance of intrusions of harm. This study relied upon self-report of imaginary scenarios, and the ratings made may not predict actual reactions and behaviours. Without the inclusion of a group of non-obsessional anxious patients, it is not possible to assess whether differences between obsessional patients and controls were due to the obsessional disorder or to elevated levels of anxiety and depression. The questionnaire items were chosen to represent a wide range of OCD-relevant situations. This means that, for most patients, the situations may not reflect their specific concerns. For some patients, none of the items captured the focus of their obsessional worries. Such specificity is likely to be strong in OCD (Salkovskis, 1996). In a further study recently completed, Wroe and Salkovskis (2000) used a semi-ideographic measure in obsessional patients and normal and anxious controls, and found some evidence of specificity.

The main finding of the present study supports the proposed extension of the cognitive theory of OCD, that the occurrence of intrusive thoughts about harm confronts the person with the need to make a decision about whether or not they will permit harm to happen. The occurrence of negative and unacceptable intrusive thoughts was judged by both obsessional and non-obsessional participants as having the effect of increasing emotional and behavioural responses to ambiguous situations. This result fits with the normalizing emphasis of the cognitive theory (Salkovskis, 1999), which suggests that people who do not



suffer from OCD will react similarly to those who do in given circumstances. The specification of intrusions concerning harm appears to modify the way in which participants evaluate the situations and their self-reported likelihood of taking preventative action. It is of interest that a negative intrusion also leads participants to anticipate an increase in the likelihood of a recurrence of the thought. A similar pattern is observed in both groups, with the OCD group reporting a higher number of overall intrusions.

Overall, the findings are consistent with the original hypothesis that obsessionals are unduly sensitive to some situations because they are particularly likely to foresee harm in the form of intrusions, and that such foresight has an anxiety elevating effect regardless of whether or not the person suffers from OCD (and of the actual probability of the harm foreseen). Foreseeing harm may have its effect by heightening the perception of agency. That is, a mundane situation that an informed observer might regard as only *implicitly* involving an omission becomes one requiring an *explicit* decision about whether or not to act to prevent the harm when this harm has been foreseen as a result of the occurrence of intrusions. We believe this process to have a predictable effect of increasing reactions such as anxiety and the tendency to take preventative action, whether or not the person suffers from OCD. It is in the nature of obsessional problems that patients tend more readily to foresee potential catastrophes (Salkovskis, 1996; Salkovskis, Richards, & Forrester, 1995) and it may be for this reason that in this study OCD participants' response to scenarios with an accompanying neutral thought provide similar results to the non-clinical participants with a negative intrusive thought.

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