

Mental contamination: The perpetrator effect

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Abstract

In order to test the proposition that imagining carrying out an unacceptable non-consensual act can evoke contamination-related feelings in the perpetrator, 4 connected experiments were carried out involving male students. The effects of the experimental procedure were enhanced by the introduction of a theme of betrayal which boosted the feelings of contamination and urges to wash. The non-consensual scenarios were followed by substantial increases in negative emotions, notably shame, disgust and guilt, and these increases were boosted over successive enhancements of the procedure. Overall the results show that perpetrators of (imagined) unacceptable acts report a range of negative emotions and feelings of dirtiness. The main conclusion of this research is that imagining an unacceptable, non-consensual act can produce feelings of contamination. It is an experimental illustration of mental contamination, that is, contamination which is evoked by a mental event without any contact with a tangible contaminant.

Keywords: Mental contamination; OCD; perpetrator; betrayal; compulsive washing; morality.

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Introduction

In addition to the familiar type of contamination, in which physical contact with a dirty/dangerous/disgusting stimulus provokes feelings of contamination, it has been proposed that there is a second less-obvious type in which comparable feelings of dirtiness or pollution are provoked without any physical contact with a contaminant (see conceptual analysis, Rachman, 2004, 2006). This latter type, mental contamination, can be provoked by images, thoughts, and memories. It always has a human source and is caused by a violation such as degradation, betrayal, emotional abuse, humiliation. The source of *contact* contamination is inanimate - dirt and/or disease - but the source of mental contamination is human. The feelings of dirtiness or pollution are internal, diffuse and pervasive and they are easily re-evoked by mental events. It often has a moral quality and where that feature predominates, the term 'mental pollution' is preferred. In other instances these feelings of dirtiness are referred to as feelings of contamination.

Clinically significant cases of mental contamination arise from experiences of being humiliated, degraded, deceived or violated physically or emotionally. The violator is usually transformed into a *human contaminant* (Rachman, 2006), that is, a person who evokes strong and lasting feelings of contamination, with or without physical contact. Often the contaminated victim cannot even mention the name of the violator without experiencing feelings of contamination.

Most instances of mental contamination arise from upsetting events, humiliations, memories or thoughts, in the absence of direct contact with a contaminant (Rachman, 2006). The results of previous experiments and psychometric analyses (Radomsky & Elliott, 2009; Elliott &

Radomsky, 2009; Herba & Rachman, 2007) confirm the occurrence of mental contamination. The evocation of contamination by mental events is well illustrated by the study of victims of sexual assault. For example, Fairbrother, Newth & Rachman (2005) found that feelings of contamination were reported long after the assault when victims were asked to imagine and/or recall the non-consensual sexual experience. Recent work has shown that the mere recollection of humiliating, degrading experiences/situations/memories is sufficient to evoke feelings of contamination, even after months or years have passed (Coughtrey, 2010). Interestingly, some victims of immoral acts, such as betrayals, develop strong feelings of contamination and associated compulsive washing (Rachman, 2010). Zhong and Liljenquist (2006) also reported four studies which were interpreted as showing that “physical cleansing alleviates the upsetting consequences of unethical behavior” (p.1451).

In the first of a series of experiments designed to investigate whether feelings of contamination can be generated by imaginal non-consensual experiences, Fairbrother, Newth & Rachman (2005) asked their (female) participants to imagine that they were the unwilling recipients of a kiss. They were asked to imagine a party scene in which they were kissed against their wishes. The imaginal scenario produced feelings of ‘internal dirtiness’ and negative emotions. A number of the participants subsequently engaged in washing behaviour. In a replication of this so-called ‘dirty kiss paradigm’ experiment, Herba & Rachman (2007) reported that 27 out of 100 participants gargled, rinsed or washed their hands in order to reduce their feelings of dirtiness. In the experiment by Elliott & Radomsky (2009) eight out of 70 participants washed to relieve themselves of the unpleasant physical sensations evoked by the imagined non-consensual event. Further, it has been shown that participants’ interpretations or appraisals of

the imagined situation, and of the perpetrator in the imagined situations, are significant and robust predictors of mental contamination (Radomsky & Elliott, 2009).

There is a partial overlap between mental and physical contamination, and the *distinguishing* features of the mental form such as a human source, evocable by mental acts including image-formation, memory, and so on, have been set out (Rachman, 2006). Thus far the emphasis has been placed on the victims of an unwanted sexual experience, but the present research is focused on the perpetrators of the action.

Is it possible that *perpetrators* of non-consensual actions also develop feelings of contamination in a similar manner as *victims* of non-consensual actions? There are innumerable examples of contaminated perpetrators in literature and opera, most famously Lady Macbeth who struggled in vain to wash away her feelings of contamination after the murder of King Duncan (notably, she was not present during the bloody murder of the King). The remarkable research reported by Evans, Ehlers, Mezey and Clark (2007) suggests that the answer may well be affirmative. In an extensive study of 105 young offenders who were convicted of killing or seriously harming their victims, it was found that 46% reported distressing intrusive memories associated with the offence. The intrusions were associated with self-blame, negative appraisals of the intrusions, and minimal antisocial beliefs before the assault, among other factors. “The intrusion group scored higher on negative view of self, negative interpretation of symptoms, permanent change, and self-blame than the no-intrusion group,” (Evans et al., 2007, p.138). It is suggested that their minimal antisocial beliefs left them open to negative appraisals of their violent actions, and thence to feelings of self-blame.

In addition there are clinical examples of the so-called perpetrator effect. Incestuous thoughts and images are a not uncommon clinical example of self-contamination arising from one's own unacceptable thoughts and images.

In the present experiments participants were asked to imagine that they were the 'perpetrators' of the unacceptable kiss, rather than the 'victims'. They were asked to imagine a party scenario in which they kissed an unwilling young woman against her wishes.

Four connected experiments were carried out in order to test the hypothesis that thoughts and images about carrying out an unacceptable non-consensual act can generate feelings of contamination. The present work is an extension of the research into mental contamination in order to determine whether or not *feelings of contamination can be provoked by one's own unacceptable, deplorable behaviour or thoughts.*

Hypotheses and Predictions

In order to investigate this form of self-contamination a modified version of the original 'dirty kiss' paradigm was used. The aim of the experiments was to test the possibility that feelings of contamination can be generated by imagining carrying out an unacceptable, deplorable action that violates moral standards. From this hypothesis it was predicted that participants who imagine carrying out an unacceptable non-consensual kiss will experience contamination in the form of diffuse, internal dirtiness and urges to clean. By contrast, participants in the control condition who imagine a *consensual* kiss scenario in which their moral standards are not violated will not experience contamination-related feelings.

Predictions

1. Male participants who imagine a scenario in which they give an unwilling young female a non-consensual kiss will report feelings of dirtiness
2. They will report urges to wash
3. The addition of elements of betrayal to the imaginal scenario will enhance the feelings of dirtiness
4. The addition of betrayal will enhance the urges to wash

Design

Unselected male undergraduate participants were asked to imagine that they were kissing an unwilling recipient (non-consensual condition) or a consenting recipient (consensual condition). Prior to and after imagining the scenario participants were asked to report feelings of dirtiness and urges to wash, and washing behaviour was recorded.

Procedure

Participants were first asked to complete a questionnaire assessing baseline ratings of feelings of dirtiness, anxiety, disgust, shame, anger, guilt, and sadness. They were then asked to listen to an audio recording in which they were to close their eyes and vividly imagine themselves kissing a female at a party either consensually (control condition) or non-consensually (experimental condition). Participants were randomly assigned to each condition. Following the manipulation (either immediately, or after a five minute break; see below), the variables were re-assessed, and the urges to wash and the ability of participants to imagine and experience the scenario were recorded.

In experiments 1 and 2, urges to wash were assessed following the five minute break (see below). In experiments 3 and 4, urges to wash were assessed immediately following the manipulation. After the baseline rating assessment, participants in the non-consensual condition were asked to imagine a scene in which they kissed an unwilling female recipient and the social reactions to their behaviour: “You decide to leave the party early and as you do so, a friend criticises you for upsetting the young woman, especially as she has become very nervous since being sexually assaulted 3 months ago. The friend tells you that she had been self-conscious and apprehensive about attending the party but had finally summoned the courage to do so. Your friend looks at you with contempt.”

By contrast, those in the consensual condition were asked to imagine kissing a willing recipient in the party setting. “Imagine that you are attending a party and enjoying a warm conversation with an attractive young woman. You lean over and give her a kiss that is mutually enjoyable.”

All participants were then given a five minute break; during which they were shown the way to the washroom and told they could help themselves to anything on the table (e.g., water, hand sanitizer and tissues). Upon their return, participants were asked if they drank water or engaged in any washing behaviour during the break and why they did so.

Measures

Likert Scales (based on Herba & Rachman, 2007) were administered following the audio recording to assess feelings of dirtiness, urges to wash and associated negative emotions. Feelings of dirtiness were based on a rating scale ranging from 0 (not at all dirty) to 4 (very dirty). Urges to wash were based on an aggregate measure of five items: 1) rinse mouth, spit

and/or drink something; 2) brush teeth and/or use mouthwash; 3) wash face; 4) wash hands; and 5) take a shower. Urges to wash ratings ranged from 0 (not at all) to 4 (very much). Ratings of anxiety, disgust, shame, anger, guilt, and sadness were each rated on a scale ranging from 0 (not at all) to 4 (very much).

The Vancouver Obsessional Compulsive Inventory (VOCI; Thordarson et al., 2004) was administered. This is a 55-item questionnaire which includes subscales that address physical contamination concerns, obsessions and checking behaviour. Excellent internal consistency ($\alpha = .96$) and convergent and divergent validities have been demonstrated for the overall VOCI scale (Radomsky et al., 2006).

Beck Depression Inventory – 2 (BDI-II; Beck, Steer & Brown, 1996). This questionnaire consists of 21 items assessing depressive symptomatology including suicidal ideation. Convergent and divergent validities have been demonstrated, as well as internal consistency among both outpatients ($\alpha = .92$), undergraduate students ($\alpha = .93$; Beck, Steer & Brown, 1996).

Manipulation checks: The impact of the manipulation in each experiment was assessed by asking participants to rate the appropriateness of their behaviour in the recording, as well as the degree to which they were able to imagine the scene with ease, the degree to which they were able to imagine the scene vividly and clearly, and the degree to which the scene seemed realistic. Responses were based on a Likert-type scale ranging from 1 (not at all) to 7 (very much).

Experiment 1

The narrator's voice was female and the (male) participants were asked to imagine kissing a young woman at the party. In the consensual condition the woman was a willing recipient and in the non-consensual condition she was an unwilling recipient.

Participants. Thirty-nine male undergraduate students participated in this experiment in exchange for course credit. Their mean age was 20.36 ($SD = 1.63$), ranging from 18 to 26 years. Participant characteristics are displayed in Table 1. There were no significant differences between the two conditions on scales that measure depression and obsessions, t 's < 1.2 , p 's > 0.05 .

Results.

Manipulation checks.

There were no differences between the groups on ratings of how easy it was to imagine the scene, how clear/vivid their imagined behaviour was in the scene or how realistic their imagined behaviour was in the scene, $t(34)$'s < 1.21 , n.s..

Participants in the non-consensual condition rated their imagined behaviour as significantly more inappropriate (mean = 2.94, $SD = 0.96$) than the mean rating of inappropriateness among participants in the consensual condition (0.42, $SD = 0.76$), $t(34) = 8.70$, $p < 0.001$.

Results of the experimental procedure. The ratings of anxiety and a number of other emotions both before and after listening to the recording are displayed in Figure 1. A repeated measures 2x2 ANOVA conducted on baseline and post-recording anxiety levels revealed an interaction between time and condition, $F(1,35) = 9.36$, $p = 0.004$, with participants in the non-consensual

condition reporting increasing levels of anxiety after listening to the recording, and the participants in the consensual condition reporting similar or slightly decreasing levels of anxiety after listening to the recording. Comparable effects were observed for disgust, $F(1,35) = 13.10$, $p < 0.001$, and feeling ashamed, $F(1,35) = 3.04$, $p = 0.09$ (trend). Though not statistically significant, similar patterns emerged for feelings of anger, $F(1,35) = 0.73$, n.s., guilt, $F(1,35) = 0.27$, n.s., and sadness, $F(1,35) = 0.37$, n.s.

Post-recording feelings of dirtiness. Dirtiness ratings were not taken at baseline in order to avoid priming the participants for the subsequent recording. A between-samples t-test revealed that those in the non-consensual condition reported significantly more feelings of dirtiness compared to those in the consensual condition, $t(35) = 2.19$, $p = 0.036$ (See Figure 1).

Post- break urges to wash. Following the bathroom break, there were no significant differences between the two groups in their urges to wash $t(34) = 0.54$, n.s. (See Figure 1).

Post-recording washing behaviour. Following the bathroom break, the number of participants who washed, drank water and/or rinsed out their mouths (to remove sensations of dirtiness, but not because they used the facilities or were thirsty) was 3 in the consensual condition and 2 in the non-consensual condition, $\chi^2 = 0.29$, n.s.

Experiment 2. The narrator's voice was changed from female to male. The friend criticises the male participant: "How you could have done that?" and "You are a major jerk". The recording

involves greater social repercussions following the non-consensual act; people at the party brush past and look at the male with disgust, and tell the others what he has done.

Participants. The participants were 40 male undergraduate students. Their mean age was 20.63 ($SD = 2.93$), ranging from 18 to 36 years. Participant characteristics are displayed in Table 1. There were no significant differences between the groups on scales that measure depression or obsessions, t 's < 1.1 , p 's > 0.05 . Participants received course credit for their participation.

Results.

Manipulation checks. There were no differences between the two groups in participants' concentration, ease of imagining the scene, realism of the scene in their imaginations, or ease of imagining the people in the scene, $t(38)$'s < 1.35 , n.s..

Results of the experimental procedure. Ratings of anxiety and a number of other emotions both before and after listening to the recording are displayed in Figure 2. A 2 x 2 repeated measures ANOVA conducted on baseline and post-recording anxiety levels revealed an interaction between time and condition, $F(1,38) = 5.36$, $p = 0.026$, such that those in the non-consensual condition reported increasing levels of anxiety after listening to the recording, and those in the consensual conditions reported similar levels of anxiety before and after listening to the recording. In addition to the increased self-report levels of anxiety in the non-consensual group, similar effects were observed for disgust, $F(1,38) = 27.94$, $p < 0.001$, feeling ashamed, $F(1,37) = 5.10$, $p = 0.03$, anger, $F(1,38) = 4.29$, $p = 0.045$, guilt, $F(1,38) = 6.94$, $p = 0.012$, and sadness, $F(1,38) = 3.92$, $p = 0.055$ (trend).

Post-recording feelings of dirtiness. The hypothesized interaction for feelings of dirtiness was significant, $F(1,38) = 5.20, p = 0.028$, indicating that those in the non-consensual condition reported increased feelings of dirtiness after the recording, but those in the consensual condition did not (See Figure 2).

Post-break urges to wash. Following the bathroom break, there were no significant differences between the two groups in their urges to wash $t(38) = 0.56, n.s.$ (See Figure 2).

Post-recording washing behaviour. Following the bathroom break, the number of participants who washed, rinsed out their mouths and/or used anti-bacterial gel (to remove sensations of dirtiness, but not because they used the facilities) was 5 in the non-consensual condition and 1 in the consensual condition and $\chi^2 = 3.14, p < 0.08$.

Experiment 3. The narrator's voice remains male but the woman in the scenario is described as the sister of the participant's best friend (in both conditions) of whom he is very protective (experimental condition). Components of betrayal were added to the scenario: the participant tries to deny the kiss was his idea, blaming the woman in front of others. The social repercussion remains strongly adverse, and the best friend tells the participant "You were my best friend – I trusted you ...you have totally betrayed me". In addition, urges to wash were assessed following the audio recording rather than five minute break. In this manner, urges to wash were assessed before participants were given the opportunity to wash these urges away or before these urges were able to diminish over time.

Participants. The 40 participants were male undergraduate students. Their mean age was 21.53 ($SD = 4.95$), ranging from 19 to 43 years. Participant characteristics are displayed in Table 2. There were no significant differences between the groups on scales that measure depression and obsessions, t 's < 1.3 , p 's > 0.05 . Participants received course credit for their participation.

Results.

Manipulation check.

There were no differences between the two groups in participants' concentration, ease of imagining the scene, realism of the scene in their imaginations, or ease of imagining the people in the scene, $t(38)$'s < 0.65 , n.s..

Participants in the non-consensual condition rated their imagined behaviour as significantly more inappropriate (mean = 3.90, $SD = 1.89$) than the mean rating of inappropriateness among participants in the consensual condition (mean = 1.70, $SD = 0.73$), $t(38) = 4.86$, $p < 0.001$.

Results of the experimental procedure. Ratings of anxiety and a number of other emotions both before and after listening to the recording are displayed in Figure 3. A 2 x 2 repeated measures ANOVA conducted on baseline and post-recording anxiety levels revealed a trend for an interaction between time and condition, $F(1,38) = 3.77$, $p = 0.06$, such that those in the non-consensual condition reported increasing levels of anxiety after listening to the recording, but those in the consensual condition did not. In addition to the changes in self-report levels of anxiety, similar effects were observed for disgust, $F(1,38) = 49.97$, $p < 0.001$, feeling ashamed,

$F(1,37) = 11.70, p = 0.002$, anger, $F(1,38) = 8.38, p = 0.006$, guilt, $F(1,37) = 3.33, p = 0.048$, and sadness, $F(1,38) = 6.86, p = 0.013$.

Post-recording feelings of dirtiness. The baseline measures of feelings of dirtiness were not different between the two groups, $t(36) = 0.61, p > 0.05$). After engaging in the experimental procedure the participants in the non-consensual condition reported significantly more feelings of dirtiness compared to those in the consensual condition, $t(38) = 4.39, p < 0.001$ (See Figure 3).

Post-recording urges to wash. Following the audio recording, participants in the non-consensual condition reported significantly higher urges to wash (mean = .92, $SD = .88$) than those in the consensual condition (mean = 0.13, $SD = .26$), $t(38) = 3.83, p < 0.001$ (See Figure 3).

Post-recording washing behaviour. Following the bathroom break, the number of participants who washed, rinsed out their mouths and/or used anti-bacterial gel (to remove sensations of dirtiness, but not because they used the facilities) was 5 in the non-consensual condition and 2 in the consensual condition, $\chi^2 = 1.56, p = 0.21$.

Experiment 4. An independent replication of Experiment 3 was conducted to assess whether or not the Perpetrator Effect demonstrated in the first three experiments carried out in the Psychology Dept., University of British Columbia were replicable in a different laboratory (in the Psychology Dept. Concordia University). The procedures for Study 4 were the same as Study

3, except that participants were given the option to receive a cash draw ballot instead of course credit for their participation.

Participants. The participants were 40 male undergraduate students with a mean age of 22.75 ($SD = 5.45$), ranging from 17 to 52 years. Participant characteristics are displayed in Table 2. There were no significant differences between the groups on scales that measure depression or obsessions, t 's < 0.87 , p 's > 0.05 . Participants received course credit or a cash draw ballot for their participation.

Results.

Manipulation check.

There were no significant differences between the two groups in participants' concentration on imagining the scenario, ease of imagining the scene, or ease of imagining the people in the scene, all t 's < 1.6 , all p 's > 0.05 . Participants in the consensual condition reported significantly greater ratings of realism of the scene in their imaginations $t(38) = -2.49$, $p = 0.017$.

Participants in the non-consensual condition rated their imagined behaviour as significantly more inappropriate (mean = 3.70, $SD = .73$) than the mean rating of inappropriateness among participants in the consensual condition (mean = 1.20, $SD = .95$), $t(38) = 9.31$, $p < .001$.

There were no significant differences between the two groups on baseline ratings of shame, guilt, or distress, t 's < 1.0 , p 's > 0.05 . In addition, all participants in both conditions rated their baseline level of disgust as '0'. There were, however, significant differences between the two groups on post-recording ratings of shame $t(38) = 4.03$, $p < .001$, guilt $t(38) = 3.42$, $p = .001$,

distress $t(38) = 3.53, p = .001$; and disgust $t(38) = 5.51, p < .001$ (see below for ratings of anxiety, dirtiness and urges to wash and Figure 4 for means and standard deviations of post-recording ratings).

Results of the experimental procedure. Ratings of anxiety and a number of other emotions both before and after listening to the recording are displayed in Figure 4. A repeated measures, 2x2 ANOVA conducted on baseline and post-recording anxiety levels revealed an interaction between time and condition, $F(1,38) = 5.12, p = 0.03$, partial $\eta^2 = .12$, indicating that participants in the non-consensual condition reported increasing levels of anxiety after listening to the recording compared to those in the consensual condition. There were no significant differences between baseline $t(38) = -0.66, p = .51$ or post-recording $t(38) = 1.67, p = 0.10$ levels of anxiety between the two conditions.

In contrast to the increased self-report levels of anxiety in both conditions, there was an interaction between time and condition $F(1,38) = 30.30, p < 0.001$, partial $\eta^2 = .44$, such that those in the non-consensual condition reported increasing levels of disgust after listening to the recording, but those in the consensual condition did not. Similar effects were observed for feelings of shame, $F(1,38) = 15.28, p < 0.001$, partial $\eta^2 = .29$, anger, $F(1,38) = 12.98, p = 0.001$, partial $\eta^2 = .26$, guilt, $F(1,38) = 12.81, p = 0.001$, partial $\eta^2 = .25$, and sadness, $F(1,37) = 9.01, p < 0.01$, partial $\eta^2 = .20$.

Post-recording feelings of dirtiness. The baseline measures of feelings of dirtiness were not different for the two groups, $t(38) = 0.59, p > 0.05$. After engaging in the experimental

procedure the participants in the non-consensual condition reported significantly more feelings of dirtiness compared to those in the consensual condition, $t(37) = 4.30, p < 0.001$ (See Figure 4).

Post-recording urges to wash. Following the audio recording, participants in the non-consensual condition reported significantly greater urges to wash than participants in the consensual condition $t(38) = 2.84, p = 0.007$ (See Figure 4).

Post-recording washing behaviour. Following the bathroom break, the number of participants who washed, rinsed out their mouths and/or used anti-bacterial gel (to remove sensations of dirtiness, but not because they used the facilities) was 3 in the non-consensual condition and 1 in the consensual condition. (Given that each cell would have fewer than 5 participants, a chi-squared test was not conducted.)

Discussion.

The four predictions were borne out and in combination provide support for the major hypothesis, that a person's unacceptable thoughts/images can generate feelings of dirtiness and urges to wash. As predicted, the addition of elements of betrayal to the imaginal scenario boosted the feelings of dirtiness and urges to wash.

In addition, it was found that the non-consensual scenario evoked a broad range of negative emotions that included anxiety, disgust, shame, anger, guilt, and sadness. It remains to be determined whether, and to what extent, these negative emotions evoked by imagining a non-consensual act, can be reduced by washing.

The present report comprises four connected experiments in an attempt to heighten the effects of the imaginal procedure by progressively adding new elements to the scenario. Overall this strategy was effective. The magnitude of the experimental effects (feelings of contamination, urges to wash, negative emotions such as disgust, shame and guilt) increased over the course of the four experiments. The largest increment was obtained by the introduction of an act of betrayal. This result is in keeping with a recent analysis of the phenomenon of betrayal (Rachman, 2010), which emphasises the potentially damaging consequences of betrayal.

Methodologically, the efficacy of the experimental manipulation, imagining an unacceptable action, was reassuringly confirmed. The imagined scenes were vivid and realistic. The effects of the scenarios can be transient, and we are now developing a technique to improve the durability of these effects.

Overall, in our results more victims than perpetrators reported negative reactions to imagined non-consensual events. The fact that some perpetrators report negative reactions that are comparable to those of the victims is intrinsically interesting, but the present interest focuses on reactions that occur in OC disorders, such as anxiety and guilt.

The results of our experiments raise the interesting question of whether the *mechanisms* involved in generating unwanted intrusive thoughts/images in perpetrators resemble those that generate unwanted intrusions in victims. Evans et al. (2007) raised the interesting possibility that the distressing intrusions reported by the 46% of their perpetrators of violent crimes may resemble those observed in victims of assault, and hypothesize that “similar mechanisms explain intrusive memories in victims and perpetrators of violence” (p.143). Further research into this fascinating idea is warranted. The results of our set of experiments on perpetrators, dealing with imagined but not violent non-consensual actions, show some interesting resemblances to our

findings on the *reactions of victims* to imagined non-consensual acts. Given the overall scope of our current research programme on mental contamination, we have focused on feelings of contamination, but the broader question of the similarities of intrusions experienced by victims and perpetrators, invites further investigation.

Future research should enquire in to the generality of our results. An extension of the research into clinical samples is likely to prove fruitful, and experiments should tackle each of the 5 forms of mental contamination. Additionally the possible effects of demand characteristics on our findings should be tested.

The present investigations of the hypothesis that imagining an unacceptable, non-consensual act can produce feelings of contamination, is an experimental illustration of mental contamination that falls into the category of self-contamination, one of the five types of mental contamination (Rachman, 2006), and is encountered in the treatment of some patients suffering from OCD. A secondary conclusion is that introducing the theme of betrayal into the scenarios enhances the contamination effect, and this is consistent with the claim that betrayals can exacerbate and/or generate OCD (Rachman, 2010).

The investigation of feelings of dirtiness and urges to wash that are evoked by imagining unacceptable actions is part of a wider programme of research into the concept and phenomenon of mental contamination. The concept of mental contamination is relatively new and is not without complexities. Much needs to be known, and it is hoped that with growing knowledge, the concept of OCD will be enhanced and the development of improved methods of treatment promoted.

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Table 1 – Participant characteristics, Experiments 1 and 2

	Age	BDI-II	VOCI	VOCI	VOCI	VOCI	VOCI	VOCI	VOCI
			Total	Contamination	Checking	Obsessions	Hoarding	Just Right	Indecisiveness
Experiment 1									
Consensual	20.55	9.95	40.06	6.06	4.22	7.24	4.72	10.44	5.94 ^b
(<i>n</i> =20)	(2.04)	(6.44)	(30.08)	(6.96)	(4.65)	(6.04)	(5.03)	(8.60)	(4.01)
Non-consensual	20.16	8.35	40.67	6.79	3.79	7.50	6.58	10.47	6.37 ^c
(<i>n</i> =19)	(1.07)	(4.95)	(22.89)	(5.07)	(4.53)	(5.79)	(4.65)	(6.11)	(4.97)
Total	20.36	9.22	40.37	6.43	4.00	7.37	5.68	10.46	6.16
(<i>n</i> =39)	(1.63)	(5.78)	(26.22)	(5.99)	(4.53)	(5.83)	(4.86)	(7.32)	(4.47)
Experiment 2									
Consensual	20.55	10.45	37.65	8.10	2.95	6.00	5.85	9.80	4.95
(<i>n</i> =20)	(1.82)	(7.26)	(24.44)	(7.37)	(4.86)	(5.49)	(5.37)	(6.09)	(4.22)
Non-consensual	20.70	8.95	31.83	7.60	2.60	5.47	4.32	10.00	5.00
(<i>n</i> =20)	(3.79)	(5.58)	(17.43)	(7.48)	(3.36)	(3.96)	(3.46)	(7.90)	(3.15)
Total	20.63	9.70	34.89	7.85	2.78	5.74	5.10	9.90	4.98
(<i>n</i> =40)	(2.93)	(6.43)	(21.33)	(7.33)	(4.13)	(4.75)	(4.55)	(6.94)	(3.68)

There were no significant differences between the two conditions in any of the variables reported in this table.

Table 2 – Participant characteristics, Experiments 3 and 4

	Age	BDI-II	VOCI	VOCI	VOCI	VOCI	VOCI	VOCI	VOCI
			Total	Contamination	Checking	Obsessions	Hoarding	Just Right	Indecisiveness
Experiment 3									
Consensual	21.85	9.95	33.78	7.58	4.10	5.21	4.10	10.30	3.90
(<i>n</i> =20)	(4.53)	(8.54)	(28.91)	(8.11)	(4.19)	(6.55)	(3.95)	(8.52)	(3.67)
Non-consensual	21.20	9.65	35.42	7.05	2.65	5.70	4.30	9.45	5.30
(<i>n</i> =20)	(5.43)	(4.75)	(20.95)	(7.18)	(2.92)	(5.15)	(3.39)	(6.36)	(3.44)
Total	21.53	9.80	34.62	7.32	3.38	5.46	4.20	9.88	4.60
(<i>n</i> =40)	(4.95)	(6.82)	(24.80)	(7.56)	(3.64)	(5.80)	(3.63)	(7.43)	(3.58)
Experiment 4									
Consensual	22.95	11.25	40.90	9.75	3.40	8.20	5.60	8.55	5.40
(<i>n</i> =20)	(7.13)	(9.79)	(28.60)	(7.30)	(3.17)	(6.20)	(4.49)	(6.41)	(4.25)
Non-consensual	22.55	9.20	38.05	9.95	3.60	7.65	4.95	7.50	4.40
(<i>n</i> =20)	(3.19)	(7.25)	(18.28)	(3.59)	(2.93)	(4.89)	(3.36)	(4.06)	(2.93)
Total	22.75	10.23	39.48	9.85	3.50	7.93	5.28	8.03	4.90
(<i>n</i> =40)	(5.45)	(8.57)	(23.73)	(5.68)	(3.01)	(5.52)	(3.93)	(5.32)	(3.64)

There were no significant differences between the two conditions in any of the variables reported in this table.

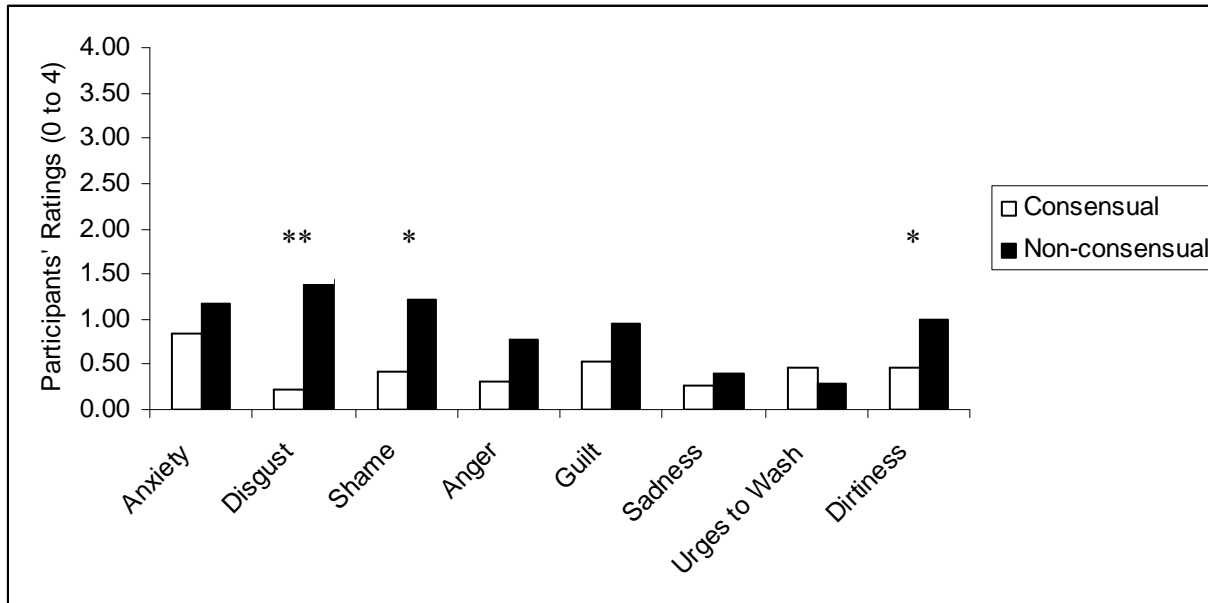
Figure Captions

Figure 1. Mental contamination ratings for Experiment 1.

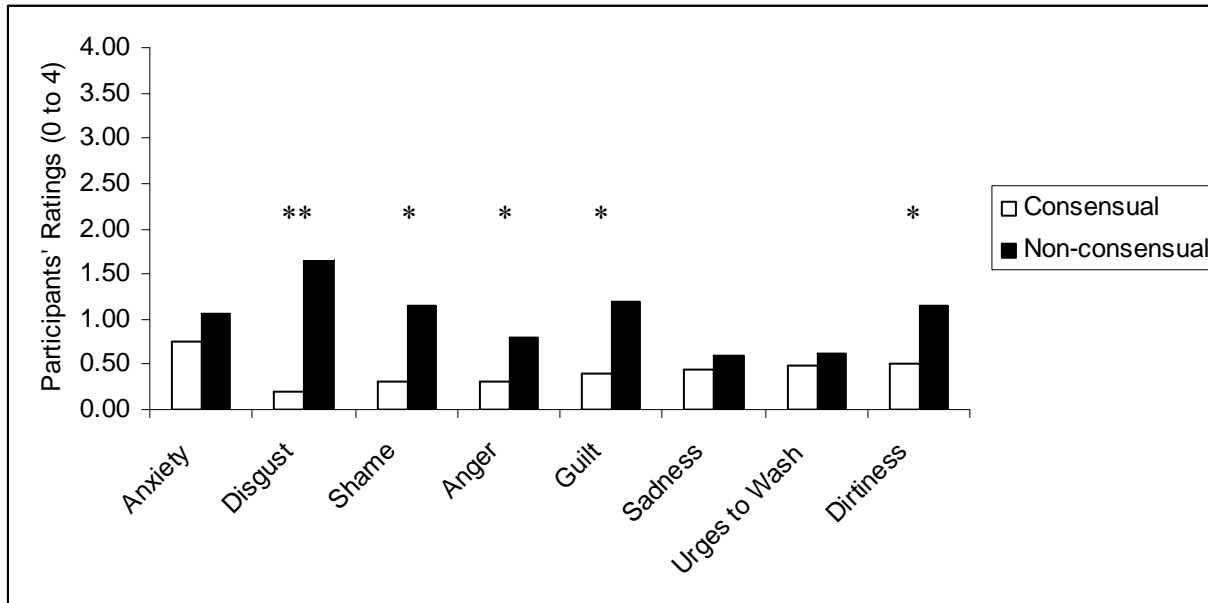
Figure 2. Mental contamination ratings for Experiment 2.

Figure 3. Mental contamination ratings for Experiment 3.

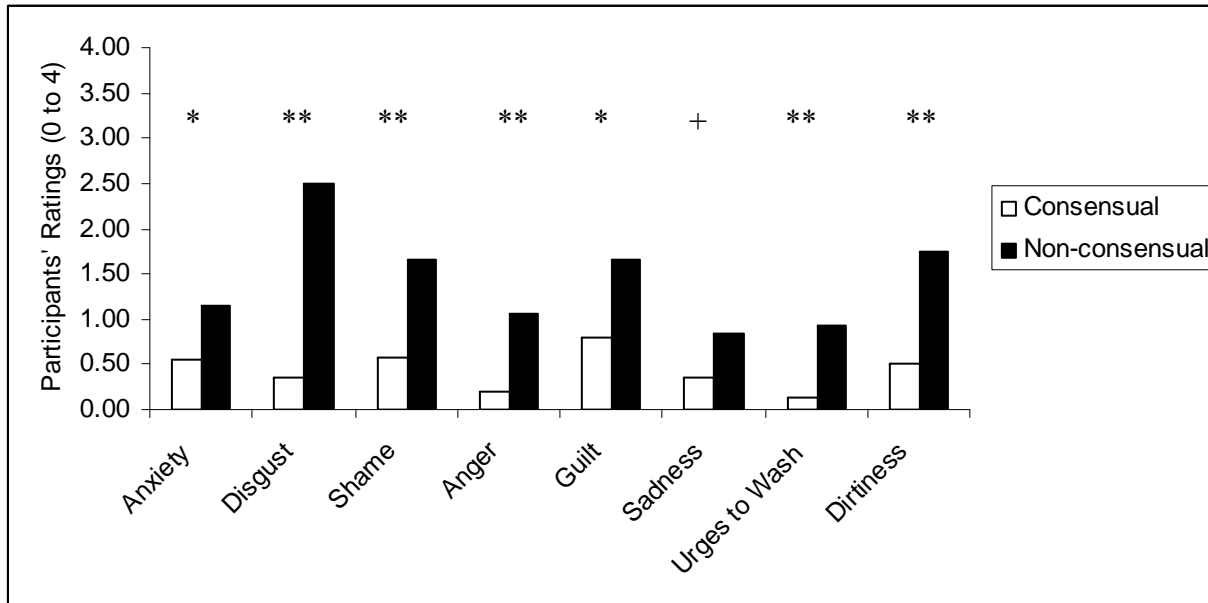
Figure 4. Mental contamination ratings for Experiment 4.



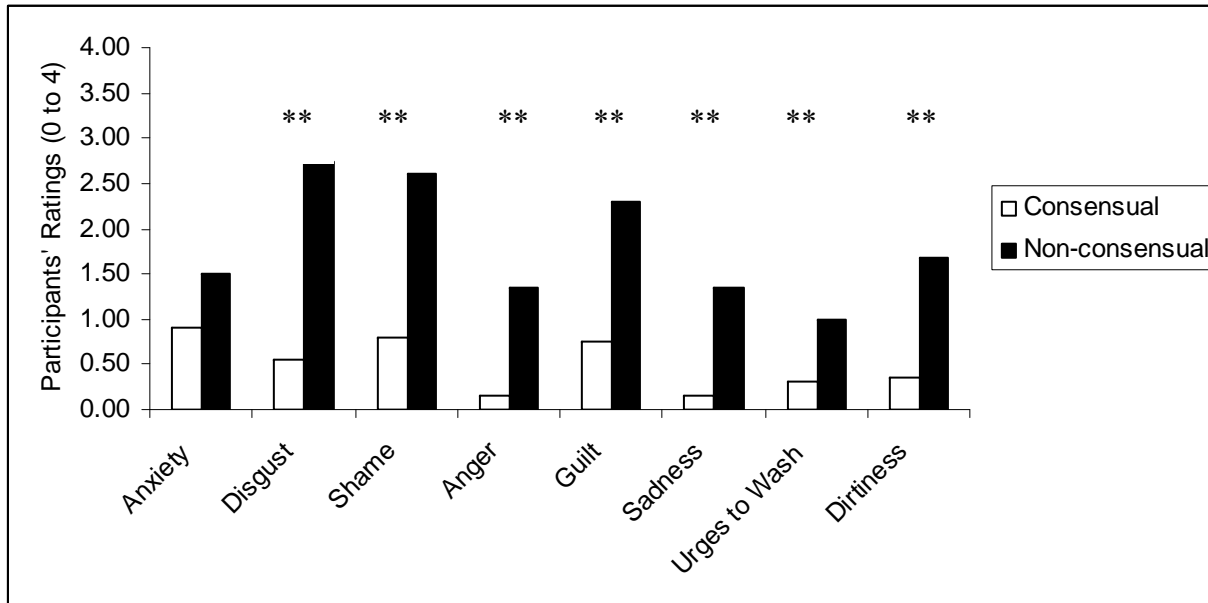
* $p < .05$. ** $p < .01$. Ratings assessed following the audio recording, except for urges to wash which were assessed following the five minute break.



* $p < .05$. ** $p < .01$. Ratings assessed following the audio recording, except for urges to wash which were assessed following the five minute break.



* $p < .05$. ** $p < .01$. + $p = .098$. All ratings assessed following the audio recording.



*p < .05. **p < .01. All ratings assessed following the audio recording.