

**Mental Contamination:
A Replication and Extension of the “Dirty Kiss” Experiment**

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Abstract

Background:

Mental contamination refers to a sense of dirtiness without any contact with objectively dirty contaminant. This is an important phenomenon in obsessive-compulsive disorder (OCD), which is a contamination-related illness. However, the concept of mental contamination has not been thoroughly researched and there is an impending need for a psychological model to explain the phenomenon more adequately. Mental contamination in OCD is also particularly difficult to treat.

Objectives:

The overall goal of the current study is to enhance our understanding about mental contamination. Based on an experimental paradigm developed by Fairbrother, Newth, and Rachman (2005), three experiments are designed. The first experiment aims at replicating the results of Fairbrother, Newth, and Rachman (2005) in local Chinese young adults. The second experiment examines the relationship between contact and mental contamination. The third experiment investigates the presence of mental contamination in persons experiencing betrayal.

Method:

Participants were assessed on questionnaires after listening to an audio-tape describing a non-consensual kiss (in experiment 1 and 2) and betrayal (in experiment 3).

Three different pools of adult female participants were recruited for each experiment. In Experiment 1, 72 participants were recruited, in which they were randomly assigned to either a consensual kiss or a non-consensual kiss condition. In Experiment 2, 122 participants were recruited and randomly assigned to one of the four conditions (Clean- Consensual, Dirty- Consensual, Clean- Non-consensual, Dirty- Non-consensual). In Experiment 3, a total of 64 participants were recruited and randomly assigned to either non-betrayal or betrayal condition.

Results:

In Experiment 1, with an imagined non-consensual kiss, feeling of dirtiness, urge to wash and negative emotions were reproduced. In Experiment 2, physical presentation and consensus of kiss significantly predicted sense of dirtiness respectively. No interaction effect between physical presentation and consensus of kiss was observed. It illustrated that either kissing a physically dirty looking man or being kissed non-consensually would experience stronger feeling of dirtiness, urge to wash and negative

emotions. The last experiment showed that an imagined betrayal, a form of psychological violation, also induced a feeling of dirtiness, washing urge and negative emotions as with an imagined non-consensual kiss.

Besides, appraisals of being violated or betrayed in the relationship were also shown to predict effectively a feeling of dirtiness, urge to wash and negative emotions across all three experiments.

Discussion:

The current study aims at expanding the understanding of mental contamination. First, the dirty kiss experiment is independently replicated in a population other than the Westerners, i.e., Chinese in this study. Second, contact contamination and mental contamination are found to be separable and do not interact with each other. This underscores the independence of the two forms of contamination. Third, betrayal is shown to evoke mental contamination. Discussion has been made on the potential link between psychological violation, morality (such as ethics of divinity), and mental contamination.

摘要

背景

思想性污染是指非經身體接觸而誘發骯髒的感覺。此名稱涵蓋了強迫性潔癖中一些尚未能被解釋的現象。至今，一向沿用的疾病預防理論，亦未能解釋思想性污染此現象。並且，在云云強迫症的症候中，思想性污染的治療亦尤其棘手。

研究目的

此研究主要旨在增加對思想性污染之理解，並由三個相互關連的實驗所組成。是項研究目標主要有三。一，在本地複製過去研究的成功產生的思想性污染；二，檢視思想性污染和接觸性污染的相互關係；三，探討被出賣之經歷會否引致思想性污染。

第一個實驗主要是以 Fairbrother, Newth 及 Rachman (2005)的實驗作藍本，並嘗試複製其結果。第二個實驗主要分析思想性污染和接觸性污染的相互關係。第三個實驗中，研究對象同樣會想像跟伴侶接吻，但當知道伴侶做出背叛的行為時，是否會引起接吻時沒有的思想性污染。

研究方法

在實驗一及實驗二，研究對象會收聽一段有關被強吻的聲帶並想像自己是當事人。在實驗三中研究對象會收聽一段有關自己男友不忠的聲帶。

每個實驗均分別招募不同的研究對象。在實驗一，七十二名成年女性被隨機分派到強吻或自願接吻的組別。在實驗二，一百二十二名成年女性被隨機分

派到四個不同的實驗組別 (CC,DC,CNC,DNC)。在實驗三中，六十四名成年女性被隨機分派到兩個實驗組別中（出賣或不被出賣）。

研究結果

在第一個實驗中，當研究對象想像自己被強吻，這已能產生顯著的思想性污染，清潔衝動和不同的負面情緒。第二個實驗證實無論外表的清潔程度和是否願意接吻都各自對研究對象的思想性污染，清潔衝動和不同的負面情緒有顯著的影響。但是，外表的清潔程度和是否願意接吻並沒有明顯的互動。最後的一個實驗指出，想像伴侶背叛的行動，這一種心理上的侵犯，已足夠引起思想性污染，清潔衝動和不同的負面情緒。最後，三個實驗結果都一致指出研究對象的認知評價能夠有效地推測的骯髒感覺，清潔衝動和各種的負面情緒。

討論

此項研究帶出了以下幾項結論。第一，此研究能夠為思想性污染提供一個獨立的複製實驗。第二，思想性污染和接觸性污染能夠各自獨立出現。第三，被出賣的經驗亦會引起思想性污染。思想性污染跟道德和被侵犯的經驗之間的相互關係亦有所探討。

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List of Abbreviations

OCD	Obsessive compulsive disorder
ERP	Exposure and response prevention
OCCWG	Obsessive Compulsive Cognition Working Group
MANCOVA	Multivariate analysis of covariance
MOCI	Maudsley Obsessive Compulsive Inventory
VOCI	Vancouver Obsessive Compulsive Inventory
VOCI-CC	Vancouver Obsessive Compulsive Inventory – Contact Contamination subscale
VOCI- MC	Vancouver Obsessive Compulsive Inventory – Mental Contamination subscale
MCR	Mental Contamination Report
USES	Unwanted Sexual Experience Scale
BBQ	Break Behaviour Questionnaire
CC	Clean consensual kiss condition in experiment 2
DC	Dirty consensual kiss condition in experiment 2
CNC	Clean non-consensual kiss condition in experiment 2
DNC	Dirty non-consensual kiss condition in experiment 2
B	Betrayal condition in experiment 3
NB	Non-betrayal condition in experiment 3

Chapter 1 Introduction

The understanding of contamination fear is important in the etiology and treatment of Obsessive-compulsive disorder (hereafter OCD). In Diagnostic and Statistical Manual of Mental Disorders- Fourth edition- Text Revision (DSM-IV-TR, American Psychiatric Association, 2000), contamination fear in OCD is defined by "*recurrent experience of distressing thoughts, impulses, or images*" (obsession) and "*repetitive behavior or mental act that aimed at preventing or reducing distress or some dreaded event*" (compulsion). (P.462-463).

Obsessive-compulsive disorder is associated with a high rate of mental health service utilization (Regier et al., 1993), lower education attainment (Andrews et al., 2001; Karno & Golding, 1991), higher rate of celibacy and lower fertility rate (Rachman, 1985). Besides, OCD inclines to take a chronic course, and unfortunately, spontaneous remission of symptoms is low (Foa & Kozak, 1996; Karno & Golding, 1991).

More than half of the individuals with OCD experience fear of contamination, and contamination fear is found to be the second most common obsessive worries in OCD, after compulsive checking (Antony, Downie and

Swinson, 1998; Rachman & Hodgson, 1980; Rasmussen & Eisen, 1992, 1998).

Therefore, a better understanding of contamination fear is crucial in improving psychological treatment for OCD.

According to Rachman (2006), contamination is "*an intense and persisting feeling of having been polluted, dirtied, or infected, or endangered as a result of contact, direct or indirect, with an item/ place/ person perceived to be soiled, impure, dirty, infectious, or harmful*" (p.9). Contamination also elicits various negative emotions like fear and disgust. Fear of contamination can be elicited through two different pathways of contamination, namely contact contamination or mental contamination.

Contact contamination is a more common variant of contamination fears. It pertains to feelings of discomfort or dread evoked by physical contact with something dirty, infectious or dangerous (Rachman, 2004, 2006). For example, touching a person with an infectious disease or one's soiled clothes would elicit contact contamination.

Recent focus of research study in contamination fear looks into the less common variant, mental contamination. Mental contamination is a term first formulated by Rachman (1994) to summarize unexplained phenomena observed in patients with OCD (e.g. contamination without any physical

contact with dirty objects). It is a relatively less researched area until the recent decade, when Rachman and his team developed a new theory on fears of contamination (Rachman, 2004, 2006).

Mental contamination has a close affinity to contact contamination and shares much resemblance in core emotions aroused. Both forms of contamination can arouse strong sense of fear and distress; it can also lead to avoidance and neutralization (Fairbrother and Rachman, 2004; Fairbrother, Newth & Rachman, 2005; Rachman, 2004, 2006). Nevertheless, with mental contamination, the source of mental contaminant is not anything that is physically dirty. It can be a person (e.g. husband who had extramarital affairs) or an experience (e.g. being raped) (Fairbrother and Rachman, 2004; Fairbrother, Newth & Rachman, 2005; Rachman, 2004, 2006). Loci of mental contamination are often more obscure and more diffuse.

In summary, mental contamination is commonly observed in patients with OCD and is potentially important in understanding the etiology of the disorder; hence an important construct that warrants further research. Besides, the need for more effective treatment for mental contamination is pressing. The present dissertation employs an experimental paradigm (i.e. the "dirty kiss" experiment) and runs a series of experiments to study the role of non-consensual kiss and

betrayal on mental contamination, as well as its relationship with contact contamination.

The following introduction aims to serve the following purposes: (i) examining brief historical background and the current definition of mental contamination; (ii) discussing the extent to which prevalent theoretical frameworks in OCD can explain mental contamination; (iii) reviewing the research evidence related to mental contamination.

1.1 MENTAL CONTAMINATION: DEFINING FEATURES

Mental contamination is “*a feeling of dirtiness/ pollution/ danger provoked by direct or indirect contact with an impure, soiled, harmful, contagious, immoral human source*” (Rachman, 2006, pp. 19). While the concept of mental contamination was brought to the attention of researchers and clinicians only in the last decade, this phenomenon in fact appeared in classic literary writings. Macbeth (1960), a famous Shakespeare’s play, gave a theatrical illustration of mental contamination. As a consequence to the assassinations and sins she was involved, Lady Macbeth was haunted by the images of spots on her hands that she could not wash away. The feeling of dirt in Lady Macbeth was not related to physical contact with a contaminant, but was driven by the strong sense of guilt. This transformed to the feeling of mental contamination, or specifically self contamination.

Long before the concept of mental contamination was made known among researchers, Rachman (1994, 2004, 2006) had already been intrigued by the clinical observations that some patients who washed frantically did not even report any contact with physically dirty contaminant that precipitated the washing. Besides, a number of patients reported an enduring feeling of

contamination despite persistent washing. These observations led to Rachman's (1994, 2004, 2006) speculation that physical contamination via contact with physically dirty objects was not the only form of contamination fear that disturbs patients with OCD who wash repeatedly.

In his seminal paper, Rachman (2006) re-labelled the form of contamination caused by contact with physically dirty contaminant as "contact contamination" and coined the new term "mental contamination" for those contamination fear which did not seem to emerge from contact with physically dirty objects.

The two forms of contamination fear share some characteristics and often co-occur in the same patient. Yet, there are also some significant differences between the two. For example, although individuals with contact contamination are likely to also have mental contamination, the reverse is not necessarily true. The following will elaborate on their similarities and differences.

Major emotions

In contact contamination, the feeling of contamination is much more clearly defined by the site(s) of contact with contaminants. Besides, the associated fear and distress incurs an urge to wash the body part(s) affected, which is likely to relieve the fear.

According to Rachman (1994, 2004, 2006), individuals with mental contamination report a sense of dirtiness, which is internal in focus, i.e. feeling of dirtiness not focused on skin. Distress arising from mental contamination is relatively obscure and difficult to comprehend. This may be because there is no physical contact with objects that are objectively dirty. These individuals often find it hard to explain their feeling of contamination, or to locate where they feel dirty. Negative emotions associated with mental contamination tend not to improve with repeated washing, given that mental contamination is minimally (if at all) connected with objectively unclean objects and soiled body parts. As a result, repeated washing is often ritualistic rather than functional.

Path of transmission

Contact contamination can spread rampantly via contact if neutralization is not performed. For example, when someone touches a soiled object with his hands, he would wash his hands to get rid of contact contamination. If he is not allowed to wash, he is likely to isolate his hands so as to curb the sprawl of contamination. In contrast, the path of transmission in mental contamination is less tangible and does not seem to conform to any predictable or rational rule. This might be partly related to the lack of objectively dirty objects (e.g. a non-consensual kiss with a man who is not described as physically dirty)

(Fairbrother and Rachman, 2004; Fairbrother, Newth and Rachman, 2005; Rachman, 2004, 2006).

Idiosyncrasy of fear objects

Contact contamination is often associated with contaminants such as human excretion or vomit that most individuals find them dirty, regardless of whether they suffer from OCD or not. In this way, contact contamination fear exists on a continuum spreading across normal and clinical populations (Rachman, 2006).

Pollutants in **mental contamination** can be highly idiosyncratic (e.g. a non-consensual kiss with a man who is not described as physically dirty). Therefore, Rachman (1994) described it as *“specific to the affected person, and can be as tenacious and resistant to rational dissuasion as an over-valued idea”* (p.311). The source of contamination may not be an object and does not have to be physically dirty. This can be illustrated in the following example seen in my clinic. A man reported a sense of contamination towards his previous business partner, who betrayed him and was verbally abusive towards him. Despite the fact that the business partner was physically clean and tidy, the man developed washing rituals and avoidance whenever he contacted or even thought about this business partner.

1.2 MENTAL CONTAMINATION AND ITS SUBTYPES

Rachman (2006) developed a heuristic construct to organize key observations in diversified dimensions of mental contamination. It is postulated that there are various forms of mental contamination, namely mental pollution, self contamination, fear of morphing, contamination after physical violation and contamination after psychological violation. While these forms are distinguishable from each other, they are often found together in one individual, or occur in combination with contact contamination.

Mental pollution

Until Rachman's (2006) expansion on his construct of mental contamination, the terms mental pollution and mental contamination had been used interchangeably. Rachman (2006) then proposed that mental pollution was one form of mental contamination, defined as "*a sense of internal un-cleanness which can and usually does arise and persist regardless of the presence or absence of external, observable dirt*" (Rachman, 1994, p. 312). Although related to the general construct of mental contamination, mental pollution is characterized by a predominance of mental or moral impurity.

Morphing

According to Rachman (2006), mental contamination can also be a fear of being tarnished or damaged mentally by proximity to specific “undesirable” people. When the fear goes to an extreme, the individual may fear being “transformed” or “morphed” into the disgusted person. The fear of morphing sometimes co-exists with contact contamination when washing and neutralization are triggered by proximity to the contaminator (Rachman, 2006). At present, it remains the least studied form of mental contamination.

Self contamination

Sometimes people may feel contaminated by their own thoughts or behaviours (e.g. blasphemous ideas, incestuous images, aggressive impulse, masturbation and etc.) (Rachman, 2006). Thoughts that contradict with one's own value system may be self-contaminating and lead to washing and neutralizing rituals. Besides, escape from one's own thought is exceedingly arduous so that re-contamination becomes frequent.

Using the “dirty kiss” experimental paradigm (Fairbrother, Newth and Rachman, 2005), a very recent paper (Rachman, 2010) explored the impact of betrayal on the perpetrators of an unacceptable kiss. “Dirty kiss” experiment was initially designed by Fairbrother, Newth and Rachman (2005) to study

mental contamination in the victims of an imagined sexual assault. It was modified to study the effect of betrayal on the perpetrator who imposed a non-consensual kiss on others. Male participants were asked to imagine kissing an unwilling female at a party. Imposing a kiss on an unwilling female induced elevated feeling of dirtiness and urge to wash in the perpetrator (Rachman, 2010).

Further experimental manipulation was introduced in the imagined scenario. Participants were asked by his close friend to look after his younger sister. Yet, the participant imposed a kiss on his close friend's anxious younger sister, who declared explicitly that she was not willing to be kissed. Imposing the unacceptable kiss become a double betrayal, as the participant both betrayed his friend's and the younger sister's trust on him. This additional manipulation (i.e. the double betrayal) was shown to inflate the magnitude of dirtiness feeling and urge to wash (Rachman, 2010). This study was a modification of the "dirty kiss" experiment so as to examine the role of betrayal in self contamination.

Although not designed to be a direct test of Rachman's (2006) theory, Zhong and Liljenquist (2006) reported an interesting study looking into the relationship between morality violation and physical cleansing. This

association was labeled as “Macbeth effect”, as inspired by Lady Macbeth’s repetitive hand washing after murdering King Duncan in Shakespeare’s play “Macbeth” (1960). The “Macbeth effect” is conceptually similar with self contamination, in which the person’s own morality is threatened. Zhong and Liljenquist (2006) explored the effect of recall about unethical deeds on urge for physical washing.

Participants were asked to recall an unethical deed committed or to copy an unethical story by hand. Following the manipulation, fear of contamination was assessed by word completion task, expressed preference for cleansing products and likelihood of taking antiseptic wipes. Participants recalling an unethical deed or copying an unethical story demonstrated an increased mental accessibility of cleansing related concepts. Besides, a greater desire for cleansing products and a greater likelihood of taking antiseptic wipes were observed (Zhong & Liljenquist, 2006). Again, this suggests a relationship between perceived immorality and the urge and behaviour of washing, even though no physical contact with any objectively dirty contaminant is made.

Contamination after physical violation and psychological violation

Contamination can occur after individuals have gone through physical or psychological ordeals, i.e., when their personal boundaries are seriously

violated. For example, when individuals are seriously victimised such as in the case of sexual assault or rape, some of them report mental contamination in response to recollection of the traumatic event, or when facing with the perpetrators. Extending from this understanding, physical violation refers to an intrusion to the physical boundary of an individual. In line with this, psychological violation may means intrusion to one's personal space, value or self.

The sense of contamination may continue to exacerbate despite an absence of any further physical contact with the perpetrators. Compulsive washing after mental recall can also be seen.

1.3 RESEARCH ON MENTAL CONTAMINATION AFTER PHYSICAL AND PSYCHOLOGICAL VIOLATION

The link between sexual assaults and mental contamination has received research attention since late 1990's. Victims of sexual assault (i.e., physical violation) not only developed PTSD symptoms but also reported to involve in OCD-like washing behaviours (de Silva & Marks, 1999, Gershuny et al., 2003). These victims reported feeling of sullied or polluted, that they felt compelled to wash.

Fairbrother and Rachman (2004) gave the first systematic report of mental contamination in victims of sexual assault. A total of 50 participants who reported experience of sexual assault were interviewed. Up to 70% of participants reported urges to wash after their actual experience of unwanted sexual experience, among whom 49% reported actual washing more than once in response to this feeling. About 23% of victims reported washing excessively anywhere from 1 day to a few weeks. More than 25% of those women who washed following their sexual assault reported continued excessive washing for several months or more.

Besides, participants were invited to participate in an experiment.

Participants were randomized into recalling the assault or recalling a pleasant memory or scene. Deliberate recall of the sexual assault led to report of stronger feelings of dirtiness and the urge to wash than the control condition. Nine out of 43 participants reported actual hand washing right after deliberate recollection of the sexual assault.

This study is important in showing that mental contamination was common among victims of sexual assault, and could be evoked simply by recall of the assault experience. Feeling of anxiety and distress was higher subsequent to the deliberate recall of assault experience. Besides, mental contamination was significantly related to subjective level of distress, persistence of the urge to wash as well as features of PTSD. Feeling of mental contamination reported was characterized by internal focus of dirtiness, and emotional component of dirtiness.

Building on the findings in Fairbrother and Rachman (2004), the “dirty kiss” experiment was designed to study mental contamination (Fairbrother, Newth and Rachman, 2005). The “dirty kiss” experiment involved an audiotaped scenario in which the participant was asked to imagine taking part in a large house party. At the party, the participant experienced a non-consensual kiss forced upon her by a newly met man. Manipulation was

controlled by a consensual kiss experience in the same background scenario.

In consistency with the findings in Fairbrother and Rachman (2004), participants in the non-consensual kiss condition rated significantly higher on core features of mental contamination. These included feeling unclean, dirty of external and internal focus, and dirtiness in non physical terms. A higher level of upset, anxiety, and anger was also observed in the non-consensual kiss condition compared with the consensual kiss condition (Fairbrother, Newth and Rachman, 2005). In addition, a stronger urge to wash and to avoid potential source of contamination was also elevated (Fairbrother, Newth and Rachman, 2005).

Eight participants (on the non-consensual kiss condition) even engaged in actual washing or rinsing behaviour to counteract the feeling of mental contamination after the experiment. A significant portion (32%) of participants reported additional neutralization attempts to decrease the distress brought about by the manipulation.

The “dirty kiss” experiment provides an experimental paradigm to study the phenomenon of mental contamination specifically. The results in this study are novel and important, which are also consistent with the earlier study in people with experience of sexual assault (Fairbrother and Rachman, 2004).

Therefore, it is important that this important experiment be replicated in other samples.

In the “dirty kiss” experiment (Fairbrother, Newth and Rachman, 2005), several variables, namely the man’s character, the man’s physical cleanliness and consensus of the kiss were manipulated simultaneously. No attempt was made to disentangle the potentially specific impacts of each of these variables in the previous study.

Elliott and Radomsky (2009) attempted to address this confounding issue of the previous experiments (Fairbrother, Newth & Rachman, 2004; Herba & Rachman, 2007). By focusing on morality of the man (i.e whether the kisser is described as a man with integrity or not) and consensus of the kiss (i.e. whether the kiss is consensual or not), Elliott and Radomsky (2009) showed that a non-consensual kiss was sufficient to induce mental contamination, regardless of how moral or immoral the character of the man was described. Even when the kiss was described as consensual, pre-kiss information about man’s character could also induce feeling of mental contamination. Yet, the feeling of mental contamination induced by character information about the man was less intense when compared to that induced by a non-consensual kiss. Therefore, in the “dirty kiss” experiments (Fairbrother, Newth and

Rachman, 2005; Elliott and Radomsky, 2009), the most important predictor of mental contamination was the experience of a non-consensual kiss, although morality of the character of the man was also a significant, albeit less important, predictor.

Elliott and Radomsky (2009) manipulated the morality of the character of the man and consensus of the kiss to dismantle their impact on mental contamination respectively. Nevertheless, by leaving out description of the physical cleanliness of the kisser, it misses the chance to explore the relationship between contact and mental contamination. It would be interesting to study how the objectively physical dirtiness of the kisser, which can potentially induce contact contamination, interacts with the non-consensual kiss to produce the overall contamination fears. A more specific question is to ask if mental contamination can be evoked by a non-consensual kiss with a physically clean man, given that the latter is not expected to elicit contact contamination. This will test if contact contamination is a necessary condition for the development of mental contamination. This is important because most individuals with mental contamination also have contact contamination. This may have implied that contact contamination is a pre-condition for mental contamination.

Another limitation intrinsic to the “dirty kiss” experiment pertains to the nature of the violation. Both sexual assault (Fairbrother and Rachman, 2004) and the non-consensual kiss (Fairbrother, Newth and Rachman, 2005) are evidently physical violation in which the perpetrators intrude into the body boundary of the victims. However, are there elements of psychological violation in sexual assault and the non-consensual kiss? According to Rachman (2006), psychological violations often took one or more of the following forms: betrayal, degradation, humiliation, domination and manipulation. So do sexual assault/ a non-consensual kiss involve degradation, humiliation or domination? This is an open question. Therefore, it remains unclear on what forms of violation, physical, psychological or both, are crucial to induce mental contamination in sexual assaults and non-consensual kiss. It would be an important step to see whether psychological violation alone can lead to mental contamination. With reference to Rachman’s (2010) recent study, betrayal appeared to be a good candidate of psychological violation for study that might induce mental contamination. It would be desirable to design an experiment that controls the physical violation of the incidence, e.g., a consensual kiss. Then, an example of psychological violation, e.g., a betrayal of trust or commitment, would be added into the experiment to see if the former

alone can evoke mental contamination that is previously not sequela to a consensual kiss. In other words, the experiment involves no physical violation, but only psychological violation.

The above “dirty kiss” experiment series are mainly conducted by Rachman and his associates in the Western population. Therefore, it worths conducting a direct replication study of the phenomenon of mental contamination in a different population, i.e. Chinese in this case, by an independent research team.

1.4 OCD AND MENTAL CONTAMINATION

Studies have consistently showed that mental contamination is strongly associated with contact contamination and OCD. In Elliott et al. (2007), contact contamination predicted variance of mental contamination after controlling for symptoms of anxiety and depression. Convergent support comes from another study by Herba and Rachman (2007). Regression analyses showed that contact contamination fear significantly predicted mental contamination as elicited by an imagined non-consensual kiss. Using a correlational design, Cogle et al. (2008) demonstrated that mental contamination was correlated with OCD symptoms even after controlling for general distress. Thus, mental contamination is a clinical phenomenon found in individuals suffering from OCD. So, it would be interesting to review theories explaining OCD and discuss whether they too shed light on understanding mental contamination.

Among various psychological explanations, behavioural and cognitive theories are important frameworks in understanding the psychopathology of OCD. A brief review on these two approaches would be conducted before discussing Rachman (2004, 2006)'s specific theory on mental contamination in a later session.

Behavioural Approaches to OCD

The behavioural approach for compulsive behaviour can be traced back to Mowrer's two-stage theory of fear and avoidance (Mowrer, 1960). In this theory, obsessive fear towards a neutral object emerged when the object was associated with an aversive experience through the mechanism of classical conditioning (stage 1). Afterwards, engagement in some activity (e.g. washing) that relieved the obsessive fear was negatively reinforced through operant conditioning (stage 2). Therefore, the learning theories, including classical and operant conditioning, are most relevant to the development of OCD, including obsessive fears and compulsive behaviors (e.g., washing). This behavioral conceptualization of OCD provides the theoretical rationale behind the exposure and response prevention treatment (ERP; Meyer, 1966), in which patients are exposed to situations that trigger obsessive fear but are refrained from performing any compulsive rituals that bring the negative reinforcement, i.e., the temporary reduction of anxiety (Kozak & Coles, 2006; Meyer, 1966). The anxiety and the urge to neutralize would then decline spontaneously, although more slowly than with a compulsive behaviour (deSilva, Menzies & Shafran, 2003, Rachman et al., 1976; Roper et al., 1973). The compulsive acts will also be reduced in strength or "extinguished", given the lack of negative

reinforcement.

Limitations of the behavioural theory in explaining mental contamination

The proposition that compulsive behaviour leads to anxiety reduction is not always true in mental contamination. In fact, some patients even report an increase of anxiety after compulsion or neutralization (Clark, 2004; Rachman, 2006).

Second, although some patients with mental contamination report onset after trauma (e.g. sexual assault) and were associated with PTSD (de Silva and Marks, 1999; Gershuny et al., 2003), not all patients report an onset marked by trauma. Therefore, the idea that obsessional fear is acquired through association (i.e., classical conditioning) with traumatic or aversive experiences is not strongly supported.

All in all, the above findings seem to cast doubt on whether behavioural theories are adequate enough to explain OCD, i.e., the origin of the obsessional fear or the nature of the compulsive act which cannot be “extinguished” as theoretically predicted. This fundamental inadequacy of the behavioral approach renders it an unlikely candidate to explain mental contamination.

Cognitive views of OCD

It is obvious that cognitive elements are embedded in mental contamination, and that mental contamination cannot be explained without looking into the associated cognition. It is speculated that what drives one to wash in mental contamination pertains to a psychological/metaphorical sense of dirt, such as immoral deeds or wicked ideas. In other words, cognitive appraisal is involved in equating immoral deeds or wicked ideas as something that is objectively dirty.

There are a number of prevailing cognitive behavioural theories of OCD (Salkovskis, 1985, 1988; Jones and Menzies, 1997; Clark, 2004), differing in the particular cognitions that are considered as crucial to the pathogenesis of OCD. They will be reviewed here in order to shed light on the understanding of mental contamination.

Background against which cognitive behaviour theory in OCD developed

Until early 1980, behaviour approaches prevailed in explaining psychopathology like anxiety disorders, despite growing debates over their limitations. Early cognitive behavioural analysis of OCD began to flourish in the mid 1980's (Salkovskis, 1985), which put an end to the theoretical stagnation at that time. At that time, a paradigm shift was seen in the understanding of

OCD, as the role of cognitive elements in OCD (e.g. obsession as a prominent cognitive feature needed to be addressed) was stressed.

Second, due to its relative success in mood disorders (Beck, 1976) and anxiety disorders like panic disorder (Clark, 1986), cognitive theory began to attain a paradigmatic status and contributed to the design of empirical based interventions. Despite the old thinking that explicit cognitive interventions had “little to offer” to OCD (Hollon & Beck, 1986), there seemed to be an increasing impact of cognitive models on a new analysis of OCD (Salkovskis, 1985).

Cognitive behaviour analysis of OCD

Building on Rachman (1978)'s anatomy of obsessions, Salkovskis (1985) presented a cognitive behavioural formulation of obsessions. The central premise, which was applicable to all forms of fear, was that fear was a result of an individual's appraisal of internal or external stimuli.

In this way, unwanted, ego-dystonic mental intrusions, which occurred in normal and disordered populations alike, would spiral into a clinical condition if erroneous appraisal was made. Perception of threat might present itself in a form of physical harm, mental harm or social harm. Several kinds of beliefs postulated to be relevant to obsessions (e.g. thought action fusion, inflated sense of responsibility, control over thought) were discussed. These proposed

cognitive domains formed major research foci in the decade to come.

According to Salkovskis (1985), faulty appraisals and beliefs could have a cascading effect on emotional, cognitive and behavioural responses.

Neutralization and compulsion might be used to cope with the resultant negative emotions effected by faulty appraisals. The loop of vicious cycle was completed as compulsion became successful in reducing anxiety and increasing the level of perceived control.

Inflated responsibility

Salkovskis (1998) postulated that an inflated sense of responsibility was critical to the pathogenesis of obsessions. Appraisal of responsibility is defined as "*belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes*" (Salkovskis, 1998, p40). Perceiving threats and dangers, individuals with a heightened sense of personal responsibility would try the utmost to prevent the predicted adversities from happening via over-control of mental activities and various neutralizing or safety-seeking behaviors.

Overestimation of danger

Jones and Menzies (1997, 1998) emphasized the role of heightened danger expectancy as a cognitive mediator between anxiety and avoidance

behaviors exhibited by OCD patients. They considered the over-estimated danger expectancy as particularly relevant to compulsive washers who executed their washing in reaction to perceived possibility of contamination and an anticipation of harmful outcome.

Faulty appraisal on mental control

Instead of focusing solely on the appraisals associated with obsessions, Clark (2004) called for attention to the dysfunctional appraisals on mental control in persistent obsessions. Previous attention focused on the deficit in control or paradoxical effort of excessive mental control in OCD. Clark (2004) summarized dysfunctional cognitions (e.g. inflated responsibility, thought action fusion and etc) under the label of “primary appraisals of intrusion” (elaborate what they are according to Clark). He argued that a faulty secondary evaluation of mental control effort and its sequelae warrant research attention.

Secondary appraisal of control is a form of meta-cognition, in which meanings of failing to exercise adequate mental control to the intrusions are made. For example, a person, who failed to control their thoughts might interpret it as a sign of mental weakness or heightened danger. The secondary evaluation of mental control effort is postulated to interact with primary

misappraisal of intrusion. The secondary appraisal level on thought control is found to be critical in heightened frequency and persistence in unwanted mental intrusions (Purdon & Clark, 2002).

Obsessive Compulsive Cognition Working Group (OCCWG)

The 1990's marked another huge concerted effort in OCD research. The Obsessive Compulsive Cognition Working Group (OCCWG), comprising researchers from nine different countries, was formed in 1995. Consensus statement on primary and secondary belief domains of OCD was made (OCCWG, 1997). Six domains of beliefs were identified to be of etiological importance to OCD. They are inflated responsibility, over-importance of thoughts, overestimation of threat, importance of controlling thoughts, intolerance of uncertainty and perfectionism (OCCWG, 1997, 2001, 2003, 2005).

“Inflated responsibility”, as discussed earlier, is the belief that one has the power that is pivotal to bring about or prevent subjectively crucial negative outcomes (OCCWG, 1997; Salkovskis, 1999). Attributing an overly significance to the mere presence of a thought is called “over-importance of thought” (OCCWG, 1997). “Overestimation of threat” is referred to inflating the probability and severity of perceived harm (OCCWG, 1997). “Importance of

controlling thought” is a construct advanced by Clark’s (2004) model discussed above. It endorses an over-valued attitude towards the possibility and favorability of exercising full control over mental events (OCCWG, 1997).

Individuals with high “intolerance of uncertainty” would find it difficult to cope with or function in situations with unpredictable changes. Last but not least, “perfectionism” is a tendency to believe in the necessity of a perfect solution to every problem, where mistakes are deemed highly unacceptable (OCCWG, 1997).

In line with the direction set out by the OCCWG, different models had been proposed but all held certain fundamental assumptions about the function(s) of maladaptive cognitions in OCD. While Salkovskis (1985, 2000) focused on inflated responsibility, Jones and Menzies (1997) emphasized on danger expectancy. These various cognitive behaviour models differed in their emphasis on the biased appraisals that were considered as central in the pathogenesis of obsession and compulsion.

The relevance of the above cognitive variables in understanding mental contamination is examined in a number of studies.

In Cogle et al.’s study (2008), a Mental Pollution Questionnaire was constructed. The strength of association between mental contamination and

obsessive-compulsive behaviour was tested. On the Mental Pollution Questionnaire, mental contamination was found to correlate with measures of inflated responsibility, OCD symptoms and thought action fusion, after controlling for general distress. The relationship of mental contamination with inflated responsibility and thought action fusion (moral) remained significant even after controlling for obsessive-compulsive symptoms. Therefore, the correlation between mental contamination and inflated responsibility was not totally accounted for by obsessive-compulsive symptoms.

All in all, results of this experiment suggest that mental contamination is closely related to OCD but its relationship with OCD-related cognition is over and above the correlation with OCD.

The relationship between mental contamination and OCD-related cognitions was also tested by Elliott et al. (2007) using a hierarchical regression model. Elliott et al (2007) reported that anxiety sensitivity, OCD-related cognitions such as thought-action fusion, and contact contamination predicted variance of mental contamination. OCD-related cognitions' predictive power remained significant after symptoms of depression, anxiety and contact contamination had been controlled for. Thus, cognitive variables in OCD (i.e. inflated responsibility, moral thought action fusion)

appear to have a unique relationship with mental contamination. This supports the usefulness of cognitive theories of OCD in understanding mental contamination – one central element of which is the central role played by cognitive appraisal in the pathogenesis of OCD.

1.5 RACHMAN'S MODEL IN FEAR OF CONTAMINATION

Consistent with the contemporary models of OCD, Rachman (2004, 2006) proposed a contamination specific model and explored the utility of biased appraisals in explaining fear of contamination.

Appraisal

All individuals experience intrusive thoughts or images. While intrusive thoughts are relatively common phenomena that occur across the population (Rachman, 1978, Salkovskis & Harrison, 1984), problems only arise when a catastrophic misinterpretation on the significance of these thoughts is made (For example, "*These repugnant thoughts and urges, and the associated pollution are of great personal significance and mean that I have a nasty hidden flaw in my character*" (Rachman, 2006, p.113)).

Although any perception of fear can be summarized as anticipating subsequent harm in physical, mental or social terms, threat appraisal is highly idiosyncratic. Such idiosyncratic appraisals are crucial in leading the different pathways into various disorders.

In fear of contamination, eruption of fear stems from catastrophic misinterpretations on the personal significance of one's unwanted intrusive

thoughts (Rachman, 2003, 2004, 2006). Fear of contact contamination is comparatively less complex than that of mental contamination. In contact contamination, any contact with dirty, infectious or dangerous substance would commonly elicit a fear of infection (physical harm), or rejection (social harm). Perception of inflated responsibility would be triggered when it is believed that one is pivotal to bring about or spread harm to people contacted.

Catastrophic misinterpretation can be highly idiosyncratic in the five forms of mental contamination. One of the central fears in mental pollution, self contamination and fear of morphing is fear of losing one's mind, or becoming mentally unstable (Rachman, 2004, 2006). This is especially threatening when the affected person perceives the intrusive thoughts as ego-dystonic, senseless and uncontrollable (Rachman, 2004, 2006). Futility in controlling thoughts that contradict an individual's value system can be perplexing, thus casting further doubt of self-control of one's mind and leading to reinforcement of the catastrophic interpretation of these intrusive thoughts.

In those who experience mental contamination after physical or psychological violation, their catastrophic misinterpretation can be similar with those who suffer from post-traumatic stress disorder (Ehlers & Clark, 2000). Victims of sexual assaults, prolonged abuses, both physical (e.g. recurrent

battering) or psychological (e.g. lasting humiliation or mocking), can be left with beliefs that their lives are blighted or permanently damaged. Recollections of these experiences would leave them with a strong feeling of pollution. For example, a lady in my clinic undergoing an abusive marital relationship characterized by manipulations and betrayals reported feeling of mental contamination when she recalled about her husband.

However idiosyncratic the thoughts are, the resultant fear can stretch beyond the normal range when catastrophic misinterpretations are made.

A recent study (Radomsky and Elliott, 2009) examined the role of appraisal in mental contamination. Adopting an experimental paradigm (i.e. "dirty kiss" experiment by Fairbrother, Newth and Rachman (2005)), participants were asked to appraise the imagined non-consensual kiss. On a scale from 0 to 100, they were asked to rate the personal responsibility for the occurrence of the kiss, the occurrence of the kiss as a kind of violation, and the post-kiss perceptions of immorality of the man's character.

In Radomsky and Elliott (2009), the responsibility appraisal significantly predicted feelings of dirtiness, urge to wash, and negative emotions. Furthermore, the extent of violation predicted feeling of dirtiness and negative emotions. These findings, again, supported Rachman's (1997, 1998, 2004,

2006) emphasis on the role of cognitive appraisals in explaining contamination fears. Appraisal of violation (e.g. their lives are blighted or permanently damage) and morality beliefs stand out to be important cognitive components for mental contamination.

1.6 CURRENT STUDY

The current study adopts Rachman's "dirty kiss" experiment (Fairbrother, Newth and Rachman, 2005) as a paradigm to investigate mental contamination in a sample of non-clinical female adults. A series of interlocking experiments are designed to achieve several objectives.

Experiment 1 replicates the original "dirty kiss" experiment, where participants would be asked to imagine either a consensual or non-consensual kiss with a man when listening to an audiotape describing the scenario. Given that most studies on mental contamination using the "dirty kiss" experiment are previously conducted by Rachman and his associates in Western populations (Fairbrother, Newth and Rachman, 2005; Herba and Rachman, 2007, Elliott and Radomsky, 2009), the first objective of this research is a direct replication study to validate the phenomenon of mental contamination in a different population, Chinese in this case, by an independent research team in Hong Kong. The major hypotheses are as follows:

- (1) a non-consensual kiss would induce feeling of mental contamination;
- (2) negative appraisal of a non-consensual kiss would predict mental contamination.

In Experiment 2, the “dirty kiss” experiment would be extended by manipulating the variable regarding the physical cleanliness of the perpetrator. As discussed above, the “contaminating elements” involved in the “dirty” kiss experiment can be multiple, such as the non-consensus of the kiss, physical cleanliness of the perpetrator, or the immorality of his character. One attempt has been made to test how the integrity of the perpetrator’s character interacts with a non-consensual kiss (Elliott & Ramdonsky, 2009). However, there is so far no study exploring how the physical cleanliness of the perpetrator interacts with a non-consensual kiss. Participants in the second experiment would listen to an audiotape describing an imagined consensual or non-consensual kiss with either a physically clean or a physically dirty man. Major hypotheses are as follows

- (1) A non-consensual kiss (regardless of the perpetrator’s physical cleanliness) would elicit significant feeling of contamination;
- (2) kissing a man, who presented himself as messy and dirty, would lead to feeling of contact contamination, regardless of whether the kiss was consensual or not;
- (3) the physical dirtiness of the perpetrator would interact with a non-consensual kiss, leading to a synergic inflation of

contamination fear; and

- (4) Negative appraisal of a non-consensual kiss would predict mental contamination.

As raised previously, the “dirty kiss” experiment inevitably involves some degree of physical violation in which the perpetrators intrude into the body boundary of the victims. To further disentangle contact contamination from mental contamination, it would be best if a physical contact is initially enjoyed and thus is not expected to bring contact contamination, e.g, a consensual instead of a non-consensual kiss. Then, something happens, e.g., a psychological violation such as betrayal. Subsequently, a feeling of dirtiness is to emerge, despite that the only physical contact remains the initial consensual kiss. This would be a clear case of mental contamination, demonstrating that psychological violation (i.e., betrayal) is sufficient to elicit a feeling of dirtiness. Experiment 3 is designed to test the above. It further extends the “dirty kiss” experiment by manipulating a sense of betrayal in the participants. Psychological violation is operationalized by witnessing the male “partner” of the participants kissing a stranger lady. In the beginning of the experiment, participants are asked to imagine a consensual kiss with their boyfriend. After the kiss, participants are divided into two groups. In one group, the participants

spot later that their boyfriend is kissing another girl. This is the betrayal group.

In second group, the participants initially spot their “boyfriend” kissing another girl, but when coming closer, the man kissing another girl is in fact not their boyfriend. This is the control, non-betrayal group. Major hypotheses are as follows:

- (1) Knowledge of the betrayal from the part of the boyfriend would induce contamination fear, urge to wash, and associated negative emotions, despite initially, the consensual kiss has not brought such emotions and behaviors; and
- (2) Appraisal (i.e. how far your boyfriend kissing another girl causing a violation and how violated you are feeling) on the betrayal presented would predict feeling of mental contamination.

Chapter 2 Method

2.1 DESIGN

The following three experiments were a replication and extension of the original “dirty kiss” experiment (Fairbrother, Newth and Rachman, 2005, Herba and Rachman, 2007).

To test out the hypotheses put forward in our current study, three experiments would be introduced. A new group of participants would be recruited for each experiment.

The first experiment was a replication of Rachman’s “dirty kiss” experiment, aiming at validating the phenomenon of mental contamination in a sample of Hong Kong-Chinese adult women. Participants were randomized into one of the two experimental conditions: consensual kiss and non-consensual kiss. The major hypothesis was that a non-consensual kiss would induce significant increase in (1) feeling of dirtiness, (2) urge to wash, (3) avoidance, and (4) negative emotions. It was further hypothesized that a negative appraisal of the kiss would predict participants’ (1) feeling of dirtiness, (2) urge to wash, (3) avoidance, and (4) negative emotions.

The second experiment examined the relationship between contact and

mental contamination through investigating the effect of the physical cleanliness of the kisser in the “dirty kiss” experiment. Participants were asked to listen to an audiotape describing a non-consensual kiss with either a physically clean or a physically dirty man. Other two groups of participants listened to an audiotape describing a consensual kiss with either a physical clean or a physically dirty man. The major hypotheses were either physical dirtiness of the kisser or the non-consensual kiss would induce significant increase in (1) feeling of dirtiness, (2) urge to wash, (3) avoidance, and (4) negative emotions. Besides, it was interesting to explore whether there would be an interaction effect between the physical dirtiness of the kisser and the non-consensual kiss on (1) feeling of dirtiness, (2) urge to wash, (3) avoidance, and (4) negative emotions.

It was further hypothesized that the appraisal of the kiss would predict participants’ (1) feeling of dirtiness, (2) urge to wash, (3) avoidance, and (4) negative emotions.

The third experiment was a further extension of the “dirty kiss” experiment examining the effect of psychological violation (e.g., betrayal) on mental contamination. In the experiment, participants were asked to imagine a kiss with her boyfriend in a party setting. Afterwards, the participants were then

asked either to imagine seeing their boyfriends (whom they had just kissed) kissing another lady or finding out that the men kissing another lady was not their boyfriends. Despite the kiss being consensual, it was hypothesized that mental contamination would be induced by the subsequent betrayal of the boyfriends. The major hypothesis was that betrayal would induce significant increase in (1) feeling of dirtiness, (2) urge to wash, (3) avoidance, and (4) negative emotions. It was further hypothesized that the negative appraisal of the kiss would predict participants' (1) feeling of dirtiness, (2) urge to wash, (3) avoidance, and (4) negative emotions.

(Detailed experimental procedures would be elaborated in the later

Procedure section)

2.2 PARTICIPANTS

All participants were recruited through recruitment notices aiming at undergraduate students of the Chinese University of Hong Kong. Only female participants were invited to participate in these three experiments as the experimental paradigm was developed specifically to elicit a feeling of mental contamination in female, heterosexual participants.

Participants were asked to indicate their sexual preference among one of the three options (i.e. heterosexual, homosexual and bisexual). Participants indicating a homosexual preference or refusing to disclose their sexual preference were excluded from the study as the described scenario was designed for heterosexual female.

Participants were recruited based on eligibility criteria and consent to participation. Participants were excluded if they reported a history of seeking professional psychological help, organic brain injury, or mental retardation. Participants either received course credits or a cash reward (20 Hong Kong dollars) as honourarium for their participation.

While all three experiments share the same source of recruitment and eligibility criteria, each participant only participated in one of the three

experiments, so as to avoid contamination of effect between experiments.

Participants taking part in either one of the three experiments would not be eligible for participating in another experiment.

Experiment 1

Eighty female participants completed the Experiment 1, among whom eight were excluded from the analysis according to the above mentioned criteria (one reported homosexual preference; one did not disclose her sexual preference and six reported experiences of psychological help sought).

Therefore, data of 72 participants (mean age=20.5 years, SD=2.0, range=18-32 years old) were analyzed.

Experiment 2

Among the 132 female participants, 10 of them were excluded according to the above mentioned criteria (two reported homosexual preference and eight reported experiences of psychological help sought). As a result, data of 122 participants (mean age=20.7 years, SD=2.72, range=18-40 years old) were analyzed.

Experiment 3

Among the 71 female participants, seven of them were excluded according to the above mentioned criteria (three reported homosexual

preference, two reported experiences of psychological help sought and two participants missed responses to a page of questionnaire due to operational error). As a result, data of 64 participants (mean age=20.3 years, SD=1.81, range=17-27 years old) were analyzed.

2.3 MEASURES

Mental Contamination Report (Herba and Rachman, 2007)

Mental contamination report (MCR) (see Appendix 7) was designed by Herba and Rachman (2007) to measure participants' responses to the "dirty kiss" experiment specifically. It was a revision and improved version from its 42-item counterpart, the Unwanted Sexual Experience Scale (USES) (Fairbrother, Newth & Rachman, 2005). Both the USES and the MCR are developed based on the construct of mental contamination. The MCR covers a similar range of the major constructs in mental contamination as in the USES, but is more focused and less lengthy. This is an important advantage of the MCR when repeated measurement is required.

The MCR consists of 7 items measuring the feeling of mental contamination in reaction to the experimental manipulation (see Appendix 7). In this measure, mental contamination is operationalized as feeling of dirtiness, urge to wash, and washing behaviour. All items are scored on a 5-point Likert scale (1=Not at all; 5=Very much). The first two items ask for the extent of dirtiness and other negative feelings experienced (e.g. "distress", "anxious", "disgusted"). One question is on the urge to wash in response to experimental

manipulation. Five sub-items are included to assess participants' urge to involve in five washing or rinsing behaviours. Herba and Rachman (2007) reported a high internal consistency ($\alpha=.89$) of the five washing sub-items and recommended using a composite score by averaging the scores of the five sub-items on washing urges.

The last two questions assess participants' avoidance to the man described in the scenario after the experimental manipulation. Avoidance is operationalized by un-willingness to share food and drink with the man described.

Appraisal variables in Mental Contamination Report (Herba and Rachman, 2007)

Three questions assessing participants' appraisal of the kiss/ betrayal described in the experiment were included in the MCR (see Appendix 7). Participants were asked to what extent they felt (1) violated, (2) cheated, and (3) betrayed after listening to the audiotape recording of the scenario described in one of the three experiments. These items were rated on a 1 to 5 scale (Cronbach's α in this study=.73- .83). These three items would also be used as a manipulation check at the same time.

Break Behaviour Questionnaire (BBQ) (Elliott and Radomsky, 2009)

The Break Behaviour Questionnaire (BBQ) (Elliott and Radomsky, 2009) is a questionnaire that is modified from the interview questions previously asked by Fairbrother and Rachman (2004) in their assessment of actual washing behaviour in response to recall of assault experience. The questionnaire (see Appendix 8) measures participants' washing behaviour during the break after listening to the scenario on the tape. Items include whether participants drink any fluid, wipe/wash their hands/faces during the break, and the reason for engaging in the washing behaviour (e.g. they are thirsty, they want to remove the unpleasant sensation elicited by the experimental manipulation, or they do not know why, etc).

Manipulation Check

After listening to the scenario described, participants were asked to rate on a 1 to 5 scale indicating the extent to which they felt (1) violated, (2) cheated, and (3) betrayed. This was to check whether the feelings of violation and betrayal were effectively elicited in each experiment respectively.

Besides, questions assessing participants' evaluation of the man's behaviour and physical cleanliness in the scenario were included. Participants were asked how inappropriate they thought the man's behaviour was. This

was to check whether the scenarios that were designed to be socially inappropriate (i.e. non-consensual kiss in Experiment 1 and 2, and betrayal in Experiment 3) were indeed considered as inappropriate by the participants. The item "man's physical presentation is dirty" was added to check, in Experiment 2, whether perceived cleanliness differed in the two experimental conditions (a physically clean vs. dirty man).

Vividness ratings of imagined scenarios (Vividness rating) in Mental Contamination Report (Herba and Rachman, 2007)

Since the effect of experimental manipulation depended on the participants' capacity to imagine and engage themselves in the described scenario, how vivid the imagery formed was important to the experimental outcome. Three questions are used to assess participants' reactions to the scenarios narrated. Participants were asked to indicate on a scale from 1 (Not at all) to 5 (Very much) on (1) how at ease they were with the scenario described, (2) the vividness of the image formed and (3) how realistic the scenario appeared to them (see Appendix 7). This set of questions was repeated across the three experiments.

The vividness rating of imagined scenarios was assessed in MCR (Herba and Rachman, 2007). The three dimensions assessing the vividness of

imagined scenario mentioned above were devised and used in the previous “dirty kiss” experiment (Fairbrother, Newth & Rachman, 2005, Herba & Rachman, 2007), with the items showing good coefficient alpha (.76) (Herba & Rachman, 2007).

Demographic Information and potential confounding variables

Age and previous party experience

Participants’ age and their previous exposure to a party like the one described were asked. Participants were asked to indicate their party experience on a 5-point Likert scale, with 1 being “never been to party like the one described”, and 5 being “always attending a party like the one described” (see Appendix 7).

Sexual preference

Participants were asked to indicate their sexual preference among three options (i.e. heterosexual, homosexual and bisexual). Participants indicating a homosexual preference or refusing to disclose their sexual preference were then excluded from the study as the described scenario might not be relevant to them (see Appendix 7).

Previous help seeking experience

Participants were asked if they had sought professional help for psychological distress (see Appendix 7). Participants who reported experiences of getting professional help for psychological distress were excluded from the study.

Previous exposure to unwanted sexual encounter

Participants were asked whether (1) they had experienced a non-consensual sexual encounter, (2) any of their friends ever experienced a non-consensual sexual encounter, and (3) they witnessed a non-consensual sexual encounter (see Appendix 7). They would be further asked if the above-mentioned experiences occurred in a party setting.

Contamination subscale of Vancouver Obsessive Compulsive Inventory

(Thordarson, Radomsky, Rachman, Shafran & Sawchuk, 2004))

To measure contact contamination, the contamination subscale of Vancouver Obsessive Compulsive Inventory (VOCI) (Thordarson et al, 2004) was used. (see Appendix 5)

The VOCI is a revision of the original Maudsley Obsessive Compulsive

Inventory (MOCI, Hodgson & Rachman, 1977). The scope of VOCI expands beyond its precedent Maudsley Obsessive Compulsive Inventory by including theoretical developments in the recent decades. As the MOCI is compiled in the hay days of the behaviourists, items of the MOCI devote much of its focus to the compulsive behaviours. The VOCI includes a wider range of items of theoretical relevance. For example, VOCI includes observable (compulsion, avoidance behaviour) and unobservable (like obsession, cognitive items and personality characteristics) aspects of OCD. (Thordarson et al, 2004).

All items in the VOCI are positively worded and address current concerns. Coupled with a five-point Likert scale in replacement of dichotomous rating, the VOCI was found to have a higher sensitivity to changes than the MOCI did (Thordarson et al, 2004).

The Contamination Subscale of VOCI consists of 12 items, 10 of which either explicitly describe anxiety after contact with contaminants like soiled and harmful substances, or concern regarding dirtiness or disease. The remaining two questions address the amount of time spent on washing and general concern regarding cleanliness.

Besides, compulsive washing behaviours like washing hands and using disinfectants are covered. All items are scored on a 5-point Likert scale ranging

from 0 (Not at all) to 4 (Very much).

Statistical properties of the VOCI contamination subscale have been shown to be satisfactory. Test retest reliability of the contamination subscale was excellent ($r=.97$) (Thordarson et al, 2004). Degree of internal consistency in the contamination subscale was high, with coefficient alpha up to .92 (Thordarson et al, 2004). Convergent validity was satisfactory, given a strong correlation between the VOCI contamination subscale and Padua Inventory contamination scale (ranging from .85 to .9) and MOCI washing items (ranging from .59 to .83) (Thordarson et al, 2004).

The VOCI contamination subscale was also found to have good discriminant validity for differentiating contamination fear from anxiety, depression, and worry (Thordarson et al., 2004). A low correlation with other less related subscales in Pauda Inventory and MOCI (e.g. slowness sub-scale in MOCI) was also reported (Thordarson et al, 2004).

Mental Contamination subscale of Vancouver Obsessive Compulsive Inventory

(Rachman, 2006)

The mental contamination subscale of the VOCI (see Appendix 6) is a new scale under construction (Rachman, 2006). As a subscale supplement to

the current VOI, it retains other characteristics of the VOI as described. Items are rated on a five-point Likert scale, ranging from 0 (Not at all) to 4 (Very much), enhancing its sensitivity to changes. Besides, it is positively worded, focuses on current concerns, and includes cognitive terms such as “I often experience upsetting and unwanted thoughts about illness”. (Thordarson et al, 2004).

Mental contamination subscale of the VOI consists of 20 items covering a range of characteristics of mental contamination (Rachman, 2006). Seven items describe the internal, intangible and obscure nature of mental contamination. For example, *“I often feel dirty under my skin”*; *“I often feel dirty or contaminated without knowing why”*; *“I often feel dirty or contaminated even though I haven’t touched anything dirty”*. Six items explicitly refer to the primary source of contamination as human beings or mental events, rather than an object. For example, *“Certain people make me feel dirty or contaminated even without any direct contact”*; *“Having an unpleasant image or memory can make me feel dirty inside”*. Four items focus on the associated feelings and intrusive thoughts of mental contamination, e.g. *“Often when I feel dirty or contaminated, I also feel guilty or ashamed”*; *“I often experience unwanted and upsetting thoughts about dirtiness”*. The remaining three items assess the urge to wash,

futility of cleansing effort, and vulnerability to mental contamination.

Studies on the psychometric characteristics of the VOCI mental contamination subscale showed favorable results. According to Radomsky et al. (2005) (as cited in Rachman 2006), the VOCI mental contamination subscale showed high internal consistency ($\alpha > .9$), and correlated highly with the VOCI scale measuring OCD symptomatology ($r > .6$).

2.4 PROCEDURE

General procedure

The procedure for all three experiments was fundamentally the same. Each participant was individually administered the experiment by the experimenter. The experiments took place in a quiet laboratory at the university with minimal external interruption. The experimenter explained the nature and procedure of the experiment as 'a study investigating party behaviour'. The participant was informed of the confidentiality of study participation and their right to withdraw from the study at any time. Personal information of participants was anonymised and each set of questionnaires was assigned a specific serial number. Participants who then signed the consent form continued with the experiment.

After a written consent (see Appendix 4) was obtained, each participant was randomly assigned to one of the experimental conditions in one of the three experiments. All participants were blind to the purpose or hypotheses of the experiment, nor were they aware of the condition of the experiment they were assigned to. Even the experimenter was blind and did not know of the experimental condition the participant was in because the participant listened

to the audio recording from a headphone and the content was thus unknown to the experimenter.

Before listening to the audio recording, all participants were asked to complete a questionnaire pack consisting of the contamination subscale and mental contamination subscale of the Vancouver Obsessive Compulsive Inventory (VOCI) (Thordarson et al, 2004; Rachman, 2006). All participants filled in the same set of questionnaires regardless of the condition they were assigned to.

The procedure was the same across all conditions, although the content of the audio recording was different. Participants were asked to listen to an audio recording that described a scenario at a party. They were requested to imagine, as vividly as possible, being the woman described in the audio recording. After listening to the audio recording, participants were asked to complete the Mental Contamination Report (MCR) (Herba and Rachman, 2007). Afterwards, the experimenter told each participant that she had to excuse herself from the room for 3 to 4 minutes. Before the break, each participant was offered water to drink (bottled water and a plastic cup), wet tissues to wipe hand, and was given directions to the bathroom.

After the break, participants were asked a number of questions about their

behaviour during the break (i.e., any urge to engage in various neutralization or avoidance behaviours such as rinsing mouth while in bathroom, etc). The Break Behaviour Questionnaire (BBQ) (Elliott and Radomsky, 2009) was then administered. Following these questions, participants were debriefed (see Appendix 9), thanked and given course credit or honourarium.

The time required for the separate experiments was as follows: 30 minutes for Experiment 1 and 2 respectively, and 40 minutes for Experiment 3. Please refer to Figure 1 to Figure 3 for the flowcharts illustrating the procedures in respective experiments.

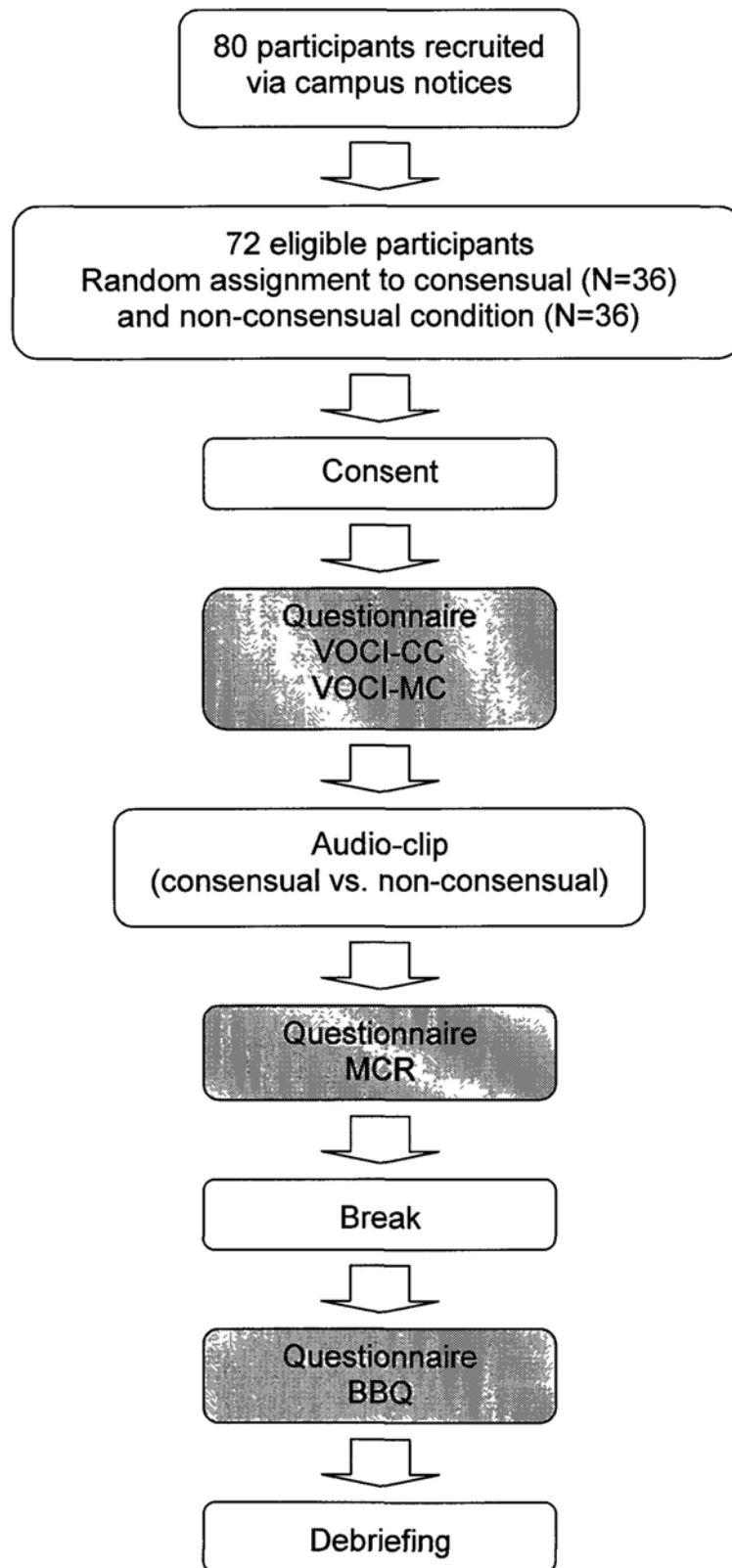


Figure 1: Flowchart of procedure for Experiment 1

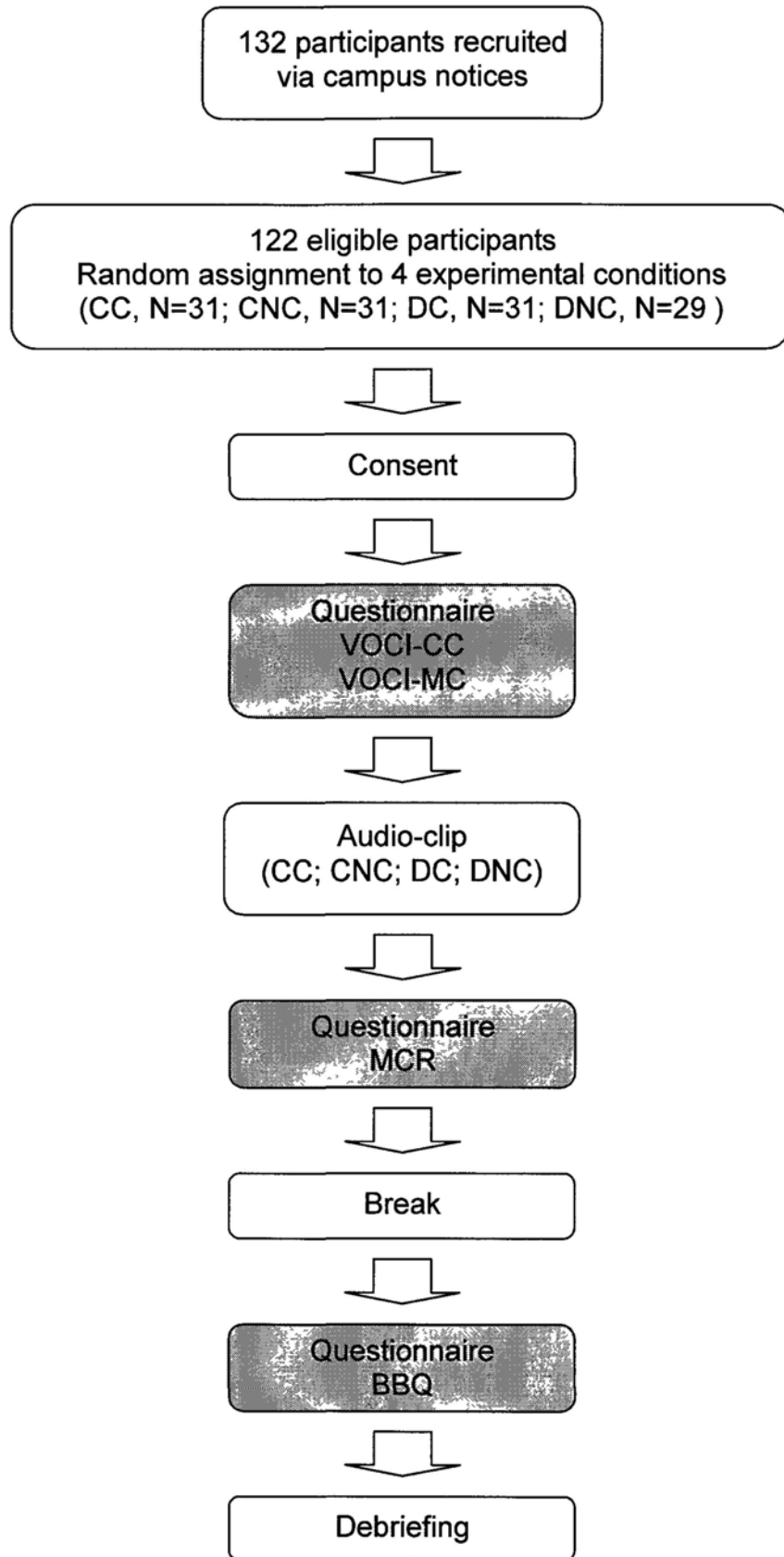


Figure 2: Flowchart of procedure for Experiment 2

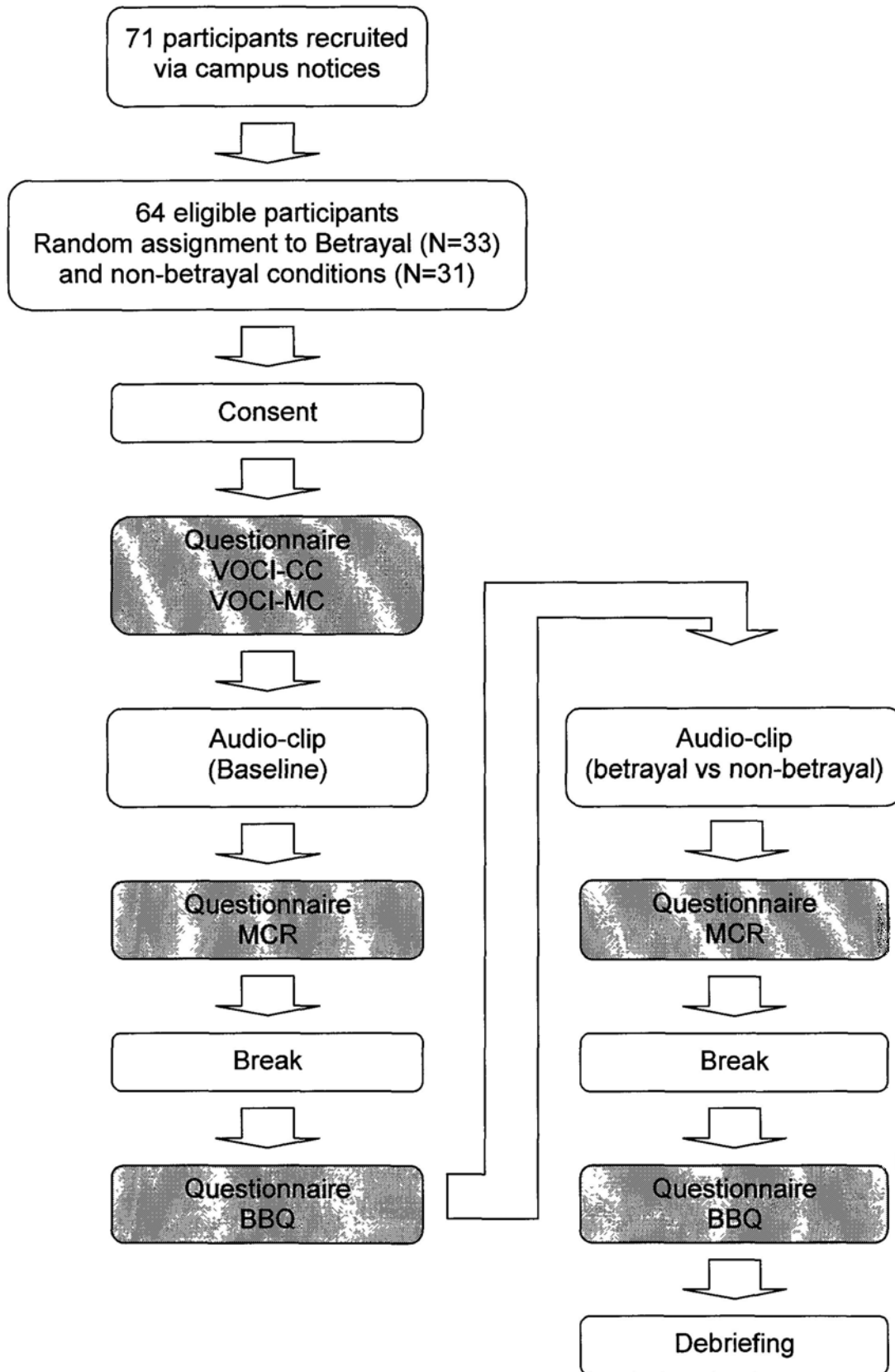


Figure 3: Flowchart of procedure for Experiment 3

Experiment 1: experimental conditions

Participants were either assigned to consensual kiss or non-consensual kiss experimental condition. The audio recordings in this experiment were adopted from the mental pollution audiotapes developed by Fairbrother, Newth and Rachman (2005) (Please refer to Appendix 1 for a full text of the recordings). Chinese translation of the audio recording script was done by the primary investigator; back translation (Chinese to English) was done by a clinical psychologist in training who also had professional training in translation. Discrepancies were carefully discussed and resolved through a panel discussion between three clinical psychologists.

The party scenario narrated in the audio recordings was identical in both experimental conditions. The scenario was a huge party of 100 people where the participant was asked to imagine attending with her close friend; and they were both enjoying it. Later in the party, the participant was to imagine meeting a new male friend and having a chat with him alone in the hallway.

Participants assigned to the consensual kiss condition listened to a description of a consensual kiss (C) (i.e. kissing voluntarily) with the new male friend who was described to be morally decent (i.e. very nice guy, helpful to people in need, participating in social services). Participants in the

non-consensual kiss condition listened to a recording that described a non-consensual kiss (NC) (i.e. being forced into kissing by the man).

Furthermore, in the non-consensual kiss condition, the man was described as immoral (e.g. he cheats, lies and takes advantage of others).

Experiment 2: experimental conditions

Participants were randomly assigned to one of the following four conditions: consensual kiss with a man with a physically clean presentation (CC); consensual kiss with a man with a physically dirty presentation (DC); non-consensual kiss with a man with a physically clean presentation (CNC); and non-consensual kiss with a man with a physically dirty presentation (DNC). The experimental procedure was the same across all four conditions except for the content of the audio recordings.

The audio recordings in this experiment were modified from the mental pollution audiotapes developed by Fairbrother, Newth and Rachman (2005) (Please refer to Appendix 2 for a full text of the recordings). Translation and back translation were done in the same manner as described for the Experiment 1 audiotapes.

The narrative of the party setting was the same as in Experiment 1. However, in Experiment 2, specific information was added about the physical

cleanliness of the man whom the participant was asked to imagine kissing with. Participants assigned to clean consensual kiss (CC) condition listened to a description of a consensual kiss (i.e. kissing voluntarily) with a newly met man who was described as physically clean (i.e. tidy clothes, clean skin, fresh breath, etc.). Participants in the clean non-consensual kiss (CNC) condition listened to a recording describing a physically clean man, but the kiss was described as non-consensual kiss (i.e. being forced into kissing by the man). Participants in the dirty consensual kiss (DC) condition listened to a scenario describing a consensual kiss with a physically dirty man (e.g. sweaty palms, breath of beer, greasy hair and skin, etc.). Participants in the dirty non-consensual kiss (DNC) condition listened to a recording describing an experience of a non-consensual kiss with a physically dirty man.

Experiment 3: experimental conditions

The audio recordings in this experiment were modified from the mental pollution audiotapes developed by Fairbrother, Newth & Rachman (2005) (Please refer to **Appendix 3** for a full text of the recordings).

In this experiment, all participants listened to an audiotape describing a consensual kiss with her boyfriend in a party setting, followed by him kissing another woman (B, betrayal condition) or witnessing a kiss between two

strangers (NB, non-betrayal condition). The experimental procedure was the same for both conditions.

Before listening to the recording, all participants completed the same set of questionnaires (i.e. contamination subscale and mental contamination subscale of the *Vancouver Obsessive Compulsive Inventory (VOCI)* (Thordarson et al., 2004, Rachman, 2006).

All participants were asked to listen to two segments of audio recordings, which described a scenario at a party. The first segment was the same for both conditions, where the participant was described kissing with her boyfriend at the party. Then, the woman left the party due to a headache. After listening to the first segment (i.e. baseline audio recording), participants were asked to complete the *Mental Contamination Report (MCR)* (Herba and Rachman, 2007) and vividness ratings (Herba and Rachman, 2007). Afterwards, the experimenter told the participant that she would leave the room for 3 to 4 minutes. Before the break, each participant was offered water to drink (i.e., bottled water and a plastic cup), wet tissues to wipe their hands, and were given directions to the bathroom.

After the break, participants were asked a number of questions about their behaviour during the break (i.e., any urges to engage in various neutralization

or avoidance behaviours such as rinsing mouth while in the bathroom, etc).

The Break Behaviour Questionnaire (BBQ) (Elliott and Radomsky, 2009) was then completed.

The second part of this experiment ensued. Participants assigned to the betrayal (B) condition listened to a scenario in which the woman returned to the party witnessing her boyfriend kissing another woman. Participants assigned to the non-betrayal (NB) condition listened to the same description except that the woman soon realized that she had mistaken a male stranger as her boyfriend (i.e. it was not her boyfriend who kissed another woman).

After listening to the second part of the recording, participants were asked to complete the Mental Contamination Report (MCR) (Herba and Rachman, 2007) and vividness ratings again (Herba and Rachman, 2007). Afterwards, the experimenter told the participant that she would leave the room for 3 to 4 minutes. Before the second break, each participant was again offered water to drink (i.e., bottled water and a plastic cup), wet tissues to wipe their hands with, and were given directions to the bathroom.

After the second break, participants were again asked a number of questions about their behaviour during the break (i.e., any urges to engage in various neutralization or avoidance behaviours such as rinsing mouth while in

bathroom, etc). The Break Behaviour Questionnaire (BBQ) (Elliott and Radomsky, 2009) was then completed. Following these questions, participants were debriefed, thanked and given course credits or honourarium.

Thus, in Experiment 3, the VOCI-CC and VOCI-MC measures were only administered at baseline, but the MCR, vividness rating, appraisal variables and BBQ were administered twice (after listening to the first and second segments of the recordings).

Chapter 3 Results

3.1 EXPERIMENT 1

The final sample of Experiment 1 for analysis involved 72 participants. They were randomly assigned to either consensual kiss condition (N=36) or non-consensual kiss condition (N=36) respectively.

Randomization check

To evaluate if randomization had been achieved, preliminary analyses were run to see if participants on the two conditions differed on baseline measures (i.e. age, prior party experience, vividness ratings and other questionnaire measures).

Age and baseline ratings on contamination fear

As shown in Table 1, two-sample t-test showed no significant difference in age between two groups. There was also no significant group difference in baseline ratings of trait contact contamination fear (VOCI-CC) and trait mental contamination fear (VOCI-MC) on the Vancouver Obsessive Compulsive Inventory (VOCI, Thordarson et al, 2004).

Vividness ratings of scenario described

Across both conditions, participants reported comparable rating regarding how realistic the scenarios were and how clear the images were during the experiment (see Table 1). Regarding ease to imagine, both groups rated the scenario as easy to imagine (>3 on a 5-point Likert scale). Nevertheless, the non-consensual kiss group rated the scenario as slightly easier to imagine when compared to consensual kiss group (C: $M=3.06$, $SD=1.09$; NC: $M=3.58$, $SD=.84$). Yet, the effect size of such difference was relatively small ($\eta^2=.07$).

Table 1: Means and standard deviations on age, baseline questionnaire scores, vividness of scenario ratings, and manipulation check for each condition in Experiment 1

Variables	Condition		Test statistics <i>t</i> (df)
	Consensual Kiss (N=36)	Non-consensual kiss (N=36)	
	M (SD)	M (SD)	
Age	20.94 (2.51)	20.16 (1.42)	1.55 (64)
Party Experience	1.86 (1.01)	1.81 (.95)	.24 (70)
VOCI-CC	13.42 (8.02)	12.34 (8.62)	.54 (69)
VOCI-MC	16.32 (8.57)	17.51 (11.59)	-.48 (67)
Clarity of images	3.08 (.84)	3.47 (.85)	-1.96 (70)
Described scenario as realistic	2.83 (1.16)	3.06 (1.07)	-.85 (70)
Ease to imagine scenario	3.06 (1.09)	3.58 (.84)	-2.30* (70)
Man as inappropriate	2.78 (1.02)	4.78 (.42)	10.90*** (46.68)
Felt being violated	2.22 (1.22)	4.58 (.65)	10.24*** (53.31)
Felt being cheated	1.97 (1.11)	3.61 (1.29)	-5.77*** (70)

- * denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$
- Note: VOCI-CC=Vancouver Obsessive Compulsive Inventory- Contact Contamination Scale, VOCI-MC=Vancouver Obsessive Compulsive Inventory- Mental Contamination Scale

Prior party experience

No significant difference was found in the party experience rating between the consensual kiss and non-consensual kiss conditions (see Table 2 for details).

Exposure to non-consensual sexual encounter

In this sample, 16.7% (N=12) of participants reported personal experience of non-consensual sexual encounter. Besides, 33.3% (N=24) reported having a friend who had non-consensual sexual experience and 15.28% (N=11) reported having witnessed a non-consensual sexual encounter. Among the participants who reported a non-consensual sexual experience (either for themselves or their friends), about 0% to 50% (M=27%) of those reported experiences taking place at a party setting.

When participants on the two experimental conditions were compared, there was no significant group difference in prior exposure to non-consensual sexual encounters at a party setting (own experience, friends' experience or witness) (see Table 2).

Table 2: Number of participants with prior exposure to non-consensual sexual encounters in Experiment 1

	Condition				Test statistics χ^2 (df)
	Consensual kiss (N=36)		Non-consensual kiss (N=36)		
	Yes	In party setting?	Yes	In party setting	
Own experience	6	3	6	0	4.00 (1)
Friend's experience	12	4	12	3	.20 (1)
Witness	4	1	7	2	.02 (2)

- *denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$

Manipulation check

In order to ascertain the effectiveness of experimental manipulation, participants' evaluation on the man described in the scenario and vividness of scenario were assessed (see Table 1).

There was a significant group difference in ratings on how inappropriate the man was as described in the scenario. Participants on the non-consensual kiss condition rated the man as significantly more inappropriate than those on the consensual kiss condition. Besides, participants on the non-consensual kiss condition rated significantly higher on the feeling of being violated or cheated than those on the consensual kiss condition. Therefore, the experimental manipulation of consensual kiss vs. non-consensual kiss conditions was deemed successful.

Mental contamination

Feeling of contamination was measured by three different types of indices, namely feeling of dirtiness, urge to wash, and negative emotions.

Feeling of dirtiness

Participants reported significant difference between consensual and non-consensual kiss conditions on feeling of dirtiness (see Table 3).

Participants on the non-consensual kiss condition reported a significantly higher level of feeling dirty than those on the consensual kiss condition.

Urge to wash, avoidance and actual washing behaviour

Urge to wash

Only participants, who reported feeling dirty, were asked to rate their urge to wash. Therefore, a subsample of 60 participants (24 from the consensual kiss group and 36 from the non consensual kiss group) were included in this analysis.

A composite score, which is an average of the five items on washing urges, was used as suggested by Herba and Rachman (2007). High internal consistency was observed in the current study (coefficient $\alpha=.92$). A significant difference between the consensual kiss and non-consensual kiss conditions

was found for the composite score of urge to wash (see Table 3). Participants on the non-consensual kiss condition reported a significantly stronger urge to wash than those on the consensual kiss condition.

Avoidance

Significant differences were also found between experimental conditions on how willing participants were to share drinks or chips with the man who kissed them (see Table 3). Participants imagining a non-consensual kiss were significantly more reluctant to drink from the same glass or share the same bowl of chips with the man who kissed them, compared to their consensual counterparts.

Effect sizes (eta squared) of the differences between experimental conditions on various indices of mental contamination ranged from .15 to .43 (see Table 3).

Table 3: Means and standard deviations on indices of mental contamination for each condition in Experiment 1

Variables	Condition		Effect Size <i>Eta Squared</i>	Test statistics <i>t</i> (df)
	Consensual Kiss (N=36)	Non-consensual kiss (N=36)		
	M (SD)	M (SD)		
Dirty	2.00 (1.01)	3.78 (1.05)	.43	-7.33*** (70)
Composite score for urge to wash	2.24 (.97)	3.57 (1.11)	.29	-4.73*** (56)
Willingness to share drink	2.53 (1.18)	1.47 (1.00)	.19	4.09*** (68.11)
Willingness to share chip	3.00 (1.10)	2.11 (1.09)	.15	3.45*** (70)

- * denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$

Actual washing behaviour

All participants were offered with a cup of water, wet tissue, and direction to washroom during a short break after the experiment and before the debriefing. Participants' washing behaviour was recorded after the break. A piece of behaviour was defined as neutralization if the participant reported that engaging in that specific piece of washing behaviour helped to relieve her distress generated by the experimental manipulation. However, since the actual number of participants exhibiting such actual washing behaviour was rather small, there was no adequate power for significance testing between experimental conditions and only descriptive statistics were reported here (see Table 4).

While the number of participants who drank water during the break was comparable between both conditions (55.6%, N=20 for the consensual kiss group vs. 63.9%, N=23 for the non-consensual kiss group), only 13% (N=3) of the non-consensual kiss group reported that they drank water in order to get rid of the feeling or sense of dirtiness in their mouth. No participant in the consensual kiss group reported such reason for their drinking. Four participants (11.1%) from the non-consensual kiss group and one (2.8%) from consensual kiss group wiped their hands with the wet tissue provided. Among these participants, two from the non-consensual kiss group reported doing so to ease their sense of unease triggered by the experimental manipulation, where the one participant from the consensual kiss group did not report so.

Only 8.3% (N=6) of all participants (2 from consensual kiss group, and 4 from non-consensual kiss group) went to toilet during the break. Half of those (N=3) who went to toilet because it would make them feel better after the experimental manipulation (2 from the consensual kiss group and 1 from the non-consensual kiss group).

Table 4: Number of participants involved in post experiment washing behaviour for each condition in Experiment 1

	Condition			
	Consensual kiss (N=36)		Non-consensual kiss (N=36)	
	Yes	To undo distress	Yes	To undo distress
Drink water	20	0	23	3
Wipe hand with wet tissue	1	0	4	2
Use washroom (e.g. wash hand/ face)	2	1	4	2

General Distress

When compared with participants on the consensual kiss condition, participants on the non-consensual kiss condition reported a significantly higher level of the following negative emotions: distress, anxiety, disgust towards the man's behaviour and disgust towards man's physical presentation, anger, shame, humiliation, sadness, fear, feeling cheap, and feeling sleazy. Effect sizes (eta squared) of the differences between experimental conditions on such negative emotions ranged from .06 to .62 (see Table 5).

Table 5: Means and standard deviations of negative emotions for each condition in Experiment

1

Variables	Condition		Effect Size <i>Eta</i> <i>squared</i>	Test statistics <i>t</i> (df)
	Consensual Kiss (N=36)	Non-consensual kiss (N=36)		
	M (SD)	M (SD)		
Distressed	1.92 (.87)	3.53 (1.11)	.40	-6.85*** (66.41)
Anxious	2.09 (1.15)	3.81 (1.12)	.37	-6.40*** (69)
Disgust (man's physical attributes)	1.89 (1.01)	3.53 (1.32)	.33	-5.92*** (65.46)
Disgust (man's behaviour)	2.50 (1.23)	4.69 (.62)	.57	-9.54*** (51.90)
Angry	1.97 (1.13)	4.42 (.77)	.62	-10.70*** (70)
Ashamed	2.53 (1.25)	3.47 (1.18)	.13	-3.29** (70)
Guilty	2.34 (1.21)	2.61 (1.27)	.01	-.91 (69)
Humiliated	1.94 (1.17)	4.19 (1.01)	.52	-8.74*** (70)
Afraid	2.47 (1.32)	3.81 (1.22)	.22	-4.46*** (70)
Sad	1.92 (1.05)	3.43 (1.24)	.31	-5.54*** (69)
Cheap	2.39 (1.18)	3.03 (1.30)	.06	-2.19* (70)
Sleazy	2.17 (1.28)	3.17 (1.32)	.13	-3.27** (70)

• * denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$

Negative appraisal of the kiss

Participants' appraisal of the kiss referred to how far one evaluated the

kiss imposed on them as a violation, deception (i.e. feeling being cheated) and betrayal.

The three appraisal variables were noticed to yield strong correlation to each other across the three experiments (see Table 6). This is not unexpected since they are conceptually similar to each other. Therefore, the three variables were collapsed together by averaging the three, yielding one composite appraisal index ($M=3.05$, $SD=1.12$ in Experiment 1).

Table 6: Correlation among for appraisal variables in three studies

	Experiment 1 (N=72)			Experiment 2 (N=122)			Experiment 3 (N=64)		
	Violated	Betrayed	Cheated	Violated	Betrayed	Cheated	Violated	Betrayed	Cheated
Violated		.48**	.75**		.46**	.56		.67**	.71**
Betrayed			.61**			.59*			.87**
Cheated									

- ** Correlation is significant at the .01 level (2-tailed)

Participants' appraisal of the kiss in Experiment 1 was significant in predicting feeling of dirtiness, washing urge, avoidance to share food (drink and chips) and the following negative emotions: distress, anxiety, disgust (towards man's physical presentation), disgust (towards man's behaviour), anger, shame, guilt, humiliation, fear, sadness, feeling cheap , and feeling sleazy (see Table 7).

Table 7: Regression analysis of appraisal variable in Experiment 1

	R ²	B	SD	Beta	T	Sig.
Dirty	.53	.66	.08	.73	8.84	.00
Composite score for urge to wash	.55	.68	.08	.74	8.31	.00
Drink avoidance	.27	-.54	.10	-.52	-5.14	.00
Chip avoidance	.16	-.41	.12	-.39	-3.58	.00
Distressed	.68	.80	.07	.82	12.20	.00
Anxious	.59	.66	.07	.77	9.98	.00
Disgust- Physical	.37	.53	.08	.61	6.40	.00
Disgust- Behaviour	.70	.71	.06	.84	12.90	.00
Angry	.78	.70	.04	.88	15.80	.00
Ashamed	.33	.55	.09	.58	5.88	.00
Guilty	.24	.49	.11	.49	4.66	.00
Humiliated	.83	.72	.04	.91	18.46	.00
Afraid	.54	.64	.07	.74	9.10	.00
Sad	.74	.78	.06	.86	14.04	.00
Cheap	.34	.57	.10	.58	5.98	.00
Sleazy	.26	.46	.09	.51	4.97	.00

3.2 EXPERIMENT 2

The final sample of Experiment 2 for analysis involved 122 participants. Participants were randomly assigned to either one of the four conditions (clean-consensual kiss, CC, N=31; dirty-consensual kiss, DC, N=31; clean-non-consensual kiss, CNC, N=31; dirty-non-consensual kiss, DNC, N=29).

Randomization check

In order to assess the effect of randomization, participants allocated to the four experimental conditions (clean-consensual kiss, CC; dirty-consensual kiss, DC; clean-non-consensual kiss, CNC; dirty-non-consensual kiss, DNC) were compared on various baseline characteristics, namely, age, dispositional characteristics, prior party experience, and vividness ratings.

Age and baseline ratings on contamination fear

There was no group difference in age across the four conditions (see Table 8).

The four groups were not significantly different in baseline ratings of trait contact contamination fear (VOCI-CC) and trait mental contamination fear

(VOCI-MC) on the Vancouver Obsessive Compulsive Inventory (VOCI, Thordarson et al, 2004) (see Table 8).

Vividness ratings of scenario described

All participants, on average, rated the scenario described as realistic, clear, and easy to imagine (>3 on a 5-point Likert scale). There was no significant difference among the four groups in terms of clarity of images, ease in imagining the scenario and how realistic the scenario appeared to them. No interaction between each vividness rating and either one of the experimental manipulations (i.e. physical cleanliness of the kisser and consensus of the kiss) was found (see Table 8).

Table 8: Means and standard deviations on age, baseline questionnaire scores, vividness of scenario ratings, and manipulation check for each condition in Experiment 2

Variables	Condition				Test statistics			
	CC (N=31)		DC (N=31)		CNC (N=31)		DNC (N=29)	F (df)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)		
Age	20.17 (1.54)	20.36 (1.42)	20.85 (2.87)	21.66 (4.04)	Main effect (physical cleanliness)	Main effect (consensus of kiss)	Interaction effect	
Party Experience	1.52 (.89)	1.42 (.62)	1.77 (.81)	1.59 (.73)	.95 (1,109)	3.81 (1,109)	.37 (1,109)	
VOCI-CC	10.03 (6.07)	11.81 (7.43)	11.48 (6.87)	12.14 (7.23)	1.05 (1,118)	2.33 (1,118)	.11 (1,118)	
VOCI-MC	15.47 (9.07)	16.00 (8.45)	17.39 (10.43)	16.52 (8.48)	.93 (1,117)	.50 (1,117)	.20 (1,117)	
Clarity of images	3.19 (.95)	3.39 (.96)	3.42 (.72)	3.28 (.80)	.01 (1,117)	.54 (1,117)	.18 (1,117)	
Described scenario as realistic	3.06 (1.00)	3.10 (1.14)	3.03 (1.11)	3.24 (1.06)	.03 (1,118)	.14 (1,118)	1.17 (1,118)	
	3.39 (.84)	3.52 (1.06)	3.65 (.88)	3.62 (.86)	.38 (1,118)	.08 (1,118)	.21 (1,118)	
Ease to imagine scenario	3.39 (.84)	3.52 (1.06)	3.65 (.88)	3.62 (.86)	.10 (1,118)	1.20 (1,118)	.21 (1,118)	

Variables	Condition				Test statistics		
	CC (N=31)	DC (N=31)	CNC (N=31)	DNC (N=29)	F	(df)	
	M (SD)	M (SD)	M (SD)	M (SD)	Main effect (physical cleanliness)	Main effect (consensus of kiss)	Interaction effect
Man as inappropriate	2.35 (.96)	3.26 (1.18)	4.03 (1.25)	4.48 (.87)	11.79*** (1,117)	54.30*** (1,117)	1.33 (1,117)
Man as physically dirty	1.55 (.77)	3.23 (.92)	2.26 (1.36)	3.83 (.97)	75.72* (1,118)	12.35*** (1,118)	.08 (1,118)
Felt being violated	2.07 (1.14)	2.71 (1.19)	3.63 (1.25)	4.07 (.96)	7.12 (1,115)	49.19*** (1,115)	.17 (1,115)
Felt being cheated	1.71 (.74)	1.94 (.77)	2.68 (1.35)	2.55 (1.24)	.07 (1,118)	17.06*** (1,118)	.84 (1,118)

• * denotes p < .05; ** denotes p < .01; *** denotes p < .001

• Note: VOCl-CC=Vancouver Obsessive Compulsive Inventory- Contact Contamination Scale, VOCl-MC=Vancouver Obsessive Compulsive Inventory- Mental Contamination Scale

Prior party experience

There was no significant difference in party experience among the four experimental conditions (see Table 8).

Exposure to non-consensual sexual encounter

In this sample, 18.8% (N=23) of participants reported personal experience of non-consensual sexual encounter. Besides, 30.3% (N=37) reported having a friend with non-consensual sexual experience and 19.6% (N=24) reported having witnessed a non-consensual sexual encounter respectively. Among these reported exposures, about 0% to 57.1% (M=21%) took place at a party setting. Prior exposures to non-consensual sexual encounters at party setting (i.e., own experience, friends' experience and witness) were not significantly different across experimental conditions (see Table 9).

Table 9: Number of participants with exposures to non-consensual sexual encounters for each condition in Experiment 2

Variable	Condition								Test statistics χ^2 (df)
	CC (N=31)		DC (N=31)		CNC (N=31)		DNC (N=29)		
	Yes	Party setting	Yes	Party setting	Yes	Party setting	Yes	Party setting	
Own experience	6	0	3	1	10	2	4	1	1.33 (1)
Friend's experience	10	3	11	2	9	4	7	4	.12 (1)
Witness	7	2	4	2	6	2	7	0	1.5 (1)

Manipulation Check

In order to examine the effectiveness of the experimental manipulation, participants' evaluations on the man described in the scenario were assessed (see Table 8).

Manipulation check for consensual vs. non-consensual kiss (consensus of kiss)

Participants imagining a non-consensual kiss (i.e. CNC and DNC) felt significantly more violated and cheated than participants in the consensual kiss groups (i.e. CC and DC). Besides, participants in the non-consensual kiss conditions rated the man significantly more inappropriate than those of consensual kiss condition.

Manipulation check for clean vs. dirty kisser (physical cleanliness)

Participants imagining a kiss with a physically dirty man (i.e. DC and DNC) did not feel more violated or cheated than imagining kissing a physically clean man (i.e. CC and CNC). Yet, participants imagining a kiss with a physically dirty man (i.e. DC and DNC) rated the man significantly more inappropriate than those who imagined a kiss with a physically clean man (i.e. CC and CNC).

Another manipulation check pertained to the rating regarding the man's

physical cleanliness. As expected, participants kissing a physically dirty man (i.e. DC and DNC) rated the man as dirtier than participants who imagined kissing a clean man (i.e. CC and CNC).

Interestingly, participants on the non-consensual kiss conditions (i.e. CNC and DNC) also rated the man as physically dirtier than those on the consensual kiss conditions (i.e. CC and DC). In other words, when the consensus of the kiss was low, participants would as well rate the man as significantly dirtier physically regardless of the description of man's physical cleanliness.

Interaction effect between manipulation conditions on violation, deception and dirtiness

There was no interaction effect between physical cleanliness of the kisser and whether the kiss was consensual for the feeling of violation and being cheated. In other words, participants on the non-consensual kiss condition (regardless of whether the kisser was physically clean or dirty) felt violated and cheated more so than the participants on the consensual kiss condition.

Mental contamination

Mental contamination was measured by three indices, namely feeling of dirtiness, urge to wash, and negative emotions (see Table 10).

The effects of physical cleanliness of the kisser were assessed by comparing participants' responses in physically clean conditions (i.e. CC and CNC conditions) versus physically dirty conditions (i.e. DC and DNC conditions). The effects of non-consensual kiss were assessed by comparing participants' responses in consensual kiss conditions (i.e. CC and DC conditions) versus non-consensual kiss conditions (i.e. CNC and DNC conditions).

Feeling of dirtiness

Participants kissing a physically dirty (i.e. DC and DNC) man reported a stronger feeling of dirtiness than kissing a physically clean man (i.e. CC and CNC) (see Table 10). Furthermore, having a non-consensual kiss (i.e. CNC and DNC) induced a significant higher level of dirtiness when compared with a consensual kiss (i.e. CC and DC) (see Table 10). In other words, there was a significant main effect for both the physical cleanliness of the kisser and the consensus of the kiss.

However, no interaction effect between the man's physical cleanliness and consensus of the kiss was observed (see Figure 4). In other words, the combination of a non-consensual kiss with a physical dirty man did not produce a more sharply increased feeling of dirtiness.

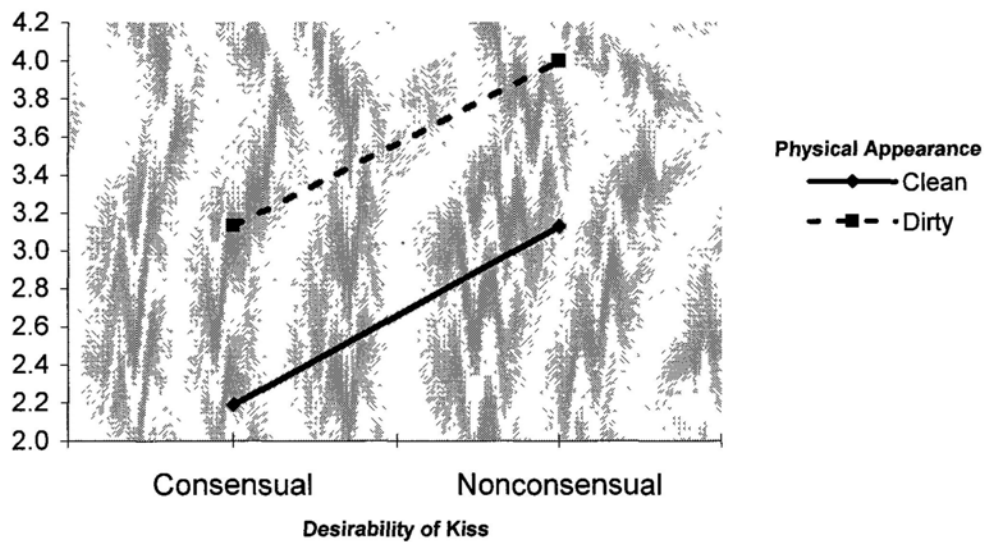


Figure 4: Effects of physical cleanliness and consensus of kiss on participants' perception of the kisser's physical presentation in Experiment 2

Urge to wash, avoidance and actual washing behaviour

Only participants who reported feeling dirty were asked to further report on their urge to wash. A total of 109 participants (clean consensual kiss (CC), N=23; dirty consensual kiss (DC), N=29; clean non-consensual kiss (CNC), N=28, dirty non-consensual kiss (DNC), N=28) were included in this part of the analysis.

Urge to wash

A composite score, which is the average of the five items on washing urges, was used according to Herba and Rachman (2007). High internal consistency was observed in the current experiment (coefficient $\alpha=.92$).

Participants imagining kissing a physically dirty man (i.e. DC and DNC) had a significantly stronger urge to wash compared to participants in the control conditions (i.e. CC and CNC) (see Table 10). Furthermore, participants imagining a non-consensual kiss (i.e. CNC and DNC) had a significantly stronger urge to wash compared to participants in the control conditions (i.e. CC and DC) (see Figure 5). In other words, there was a significant main effect for both physical cleanliness and consensus of the kiss. However, there was no interaction effect between the two experimental conditions (see Figure 5). In other words, the combination of a non-consensual kiss with a physical dirty man did not produce a more sharply increased urge to wash.

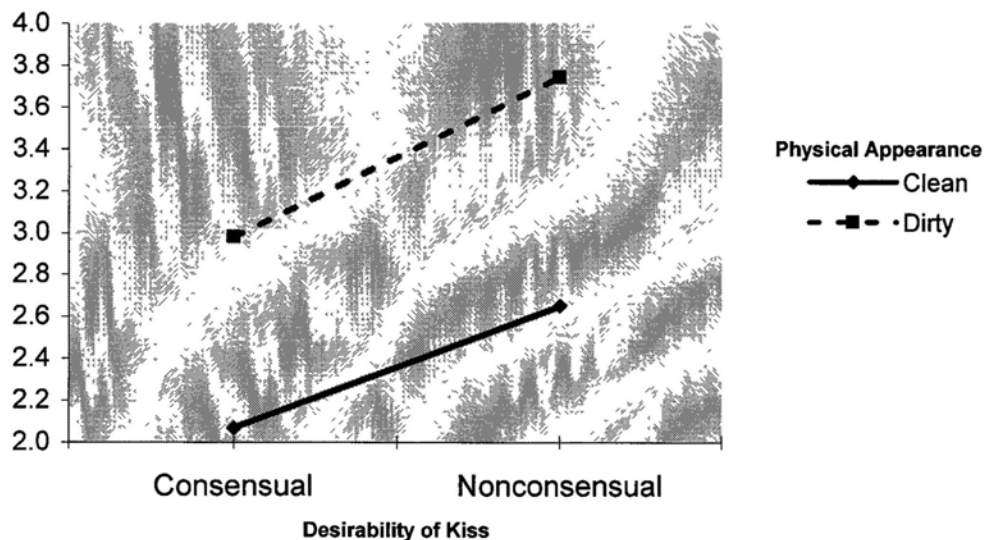


Figure 5: Effects of physical cleanliness and consensus of kiss on participants' rating of composite score for urge to wash in Experiment 2

Avoidance

All participants were asked about how likely they were to share a drink or to eat chips from the same bowl with the man they kissed in the scenario described.

Kissing a physically dirty man or having a non-consensual kiss both significantly decreased participants' likelihood to eat chips from the same bowl with the man they kissed (see Table 10). Thus, there was a significant main effect for both physical cleanliness of the man and consensus of the kiss. However, there was again no interaction effect (see Figure 7). In other words, the combination of a non-consensual kiss with a physical dirty man did not produce a more sharply decreased refusal to eat chips from the same bowl with the man the participants kissed.

Participants having a non-consensual kiss displayed a more significant tendency to avoid drinking from the same glass with the man they kissed (see Table 10). So there was a significant main effect for the consensus of the kiss. However, there was no significant main effect for physical cleanliness. Nor was there a significant interaction effect between the two variables (see Table 10 and Figure 6).

Except for the effect of kisser's physical cleanliness for participants'

avoidance to share chips (partial eta squared=.05), effect sizes (partial eta squared) of various indices of mental contamination (i.e. feeling of dirtiness, urge to wash, and avoidance) ranged from .11 to .22 (see Table 10).

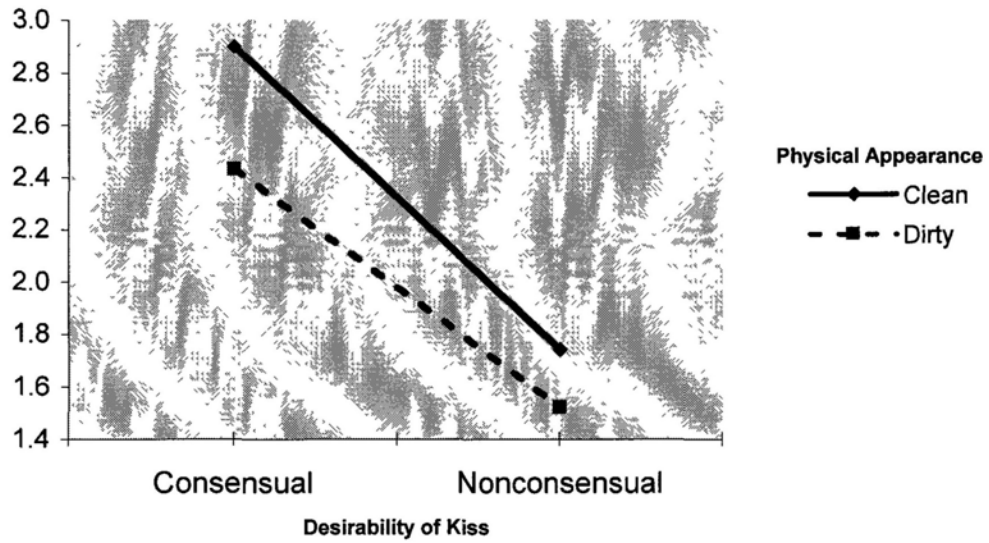


Figure 6: Effects of physical cleanliness and consensus of kiss on participants' rating of avoidance to share drink with kisser in Experiment 2

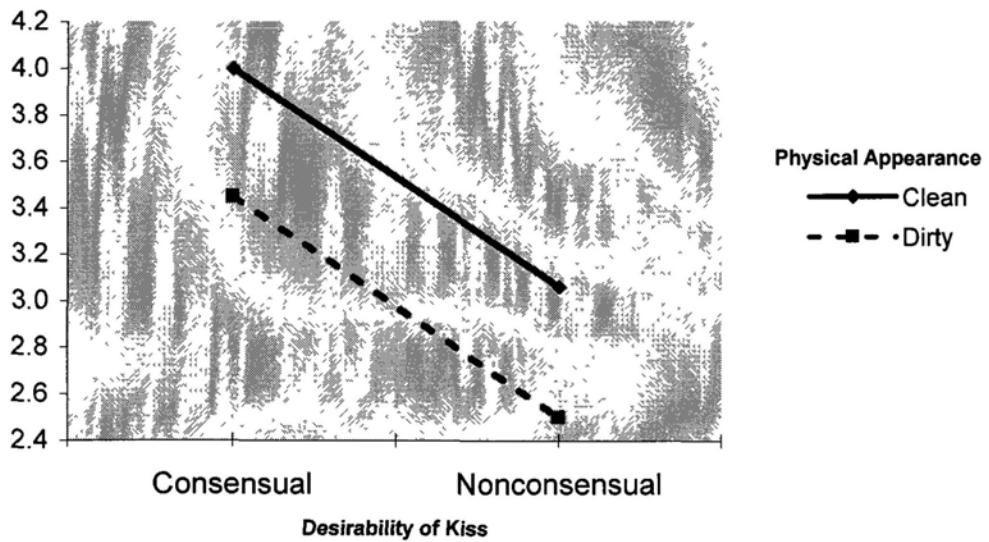


Figure 7: Effects of physical cleanliness and consensus of kiss on participants' rating of avoidance to share the same bowl of chips with kisser in Experiment 2

Table 10: Means and standard deviations on indices of mental contamination for each condition in Experiment 2

Variables	Condition				Test statistics		
	CC (N=31)	DC (N=31)	CNC (N=31)	DNC (N=29)	F	(df)	
	M (SD)	M (SD)	M (SD)	M (SD)	[effect size: partial eta squared]		
					Main effect (physical cleanliness)	Main effect (consensus of kiss)	Interaction effect
Dirty	2.19 (1.01)	3.13 (.85)	3.13 (1.20)	4.00 (.89)	24.90*** (1,118) [.17]	24.90*** (1,118) [.17]	.03 (1,118) [.00]
Composite score for urge to wash	2.07 (.88)	2.98 (.90)	2.65 (1.06)	3.74 (.98)	29.05*** (1,104) [.22]	13.08*** (1,104) [.11]	.24 (1,104) [.00]
Willingness to share drink	2.90 (1.45)	2.43 (1.22)	1.74 (1.03)	1.52 (1.06)	2.52 (1,117) [.02]	22.54*** (1,117) [.16]	.31 (1,117) [.00]
Willingness to share chip	3.97 (.95)	3.45 (1.18)	3.06 (1.44)	2.50 (1.32)	5.75* (1,117) [.05]	16.93*** (1,117) [.13]	.01 (1,117) [.00]

• * denotes p < .05; ** denotes p < .01; *** denotes p < .001

Actual washing behaviour

All participants were offered with a cup of water, wet tissue, and direction to washroom during a short break after the experiment and before the debriefing. Participants' washing behaviour was recorded after the break. A piece of behaviour was defined as neutralization if the participant reported that engaging in that specific piece of washing behaviour helped to relieve her distress generated by the experimental manipulation. Since the actual number of participants displaying such washing behaviour was rather small, there was no adequate power for significance testing between experimental conditions and only descriptive statistics were reported here (see Table 11).

No participant in the CC condition resorted to any of the three washing behaviour for neutralization. Two participants in the DC condition reported to wash hand or drink water for neutralization respectively. In each of the CNC and DNC conditions, two participants drank water to neutralize and one went to washroom to wash to relieve the distress created by the experiment.

Table 11: Number of participants of post experiment behaviour in each condition in Experiment 2

Variable	Condition							
	CC (N=31)		DC (N=31)		CNC (N=31)		DNC (N=29)	
	Yes	Undo	Yes	Undo	Yes	Undo	Yes	Undo
Accept water from experimenter	21	0	18	1	22	2	20	2
Wipe hand with wet tissue	1	0	2	1	1	0	4	0
Use washroom (e.g. wash hand/ face)	8	0	4	0	5	1	5	1

General Distress

Participants were asked about their experience of negative emotions after the experimental manipulation. The effects of physical cleanliness of the kisser were assessed by comparing participants' responses in physically clean conditions (i.e. CC and CNC conditions) versus physically dirty conditions (i.e. DC and DNC conditions). The effects of non-consensual kiss were assessed by comparing participants' responses in consensual kiss conditions (i.e. CC and DC conditions) versus non-consensual kiss conditions (i.e. CNC and DNC conditions) (see Figure 8 to 19).

Kissing a physically dirty man appeared to be disturbing in general to the participants. Participants imagining kissing with a physically dirty man rated themselves significantly higher on all negative emotions (see Table 12). It included distress, anxiety, anger, disgust (both towards man's physical

presentation and behaviour), shame, guilt, sadness, humiliation, feeling cheap, and sleazy.

An imagined non-consensual kiss would also cause significant elevation in negative emotions as well (see Table 12). Compared to a consensual kiss, a non-consensual kiss would impose significantly stronger feeling of distress, anxiety, disgust (both towards man's physical presentation and behaviour), anger, humiliation, fear, sadness, feeling cheap, and sleazy.

There was no interaction effect between the physical cleanliness of the kisser and the consensus of the kiss on the negative emotions except for disgust towards man's behaviour and feeling sad (see Table 12).

Participants in the dirty-consensual kiss group (DC) showed significantly higher disgust towards the man's behaviour than participants in clean consensual kiss group (CC). Yet the difference was minimized when the kiss was not consensual (CNC and DNC conditions). Disgust towards man's behaviour became comparably stronger in both non-consensual kiss conditions.

Regarding participants' feeling of sadness, the interaction effect revealed that the physical dirtiness of the man appeared to exert significantly stronger feeling of sadness when participants had a non-consensual kiss (see Figure

17).

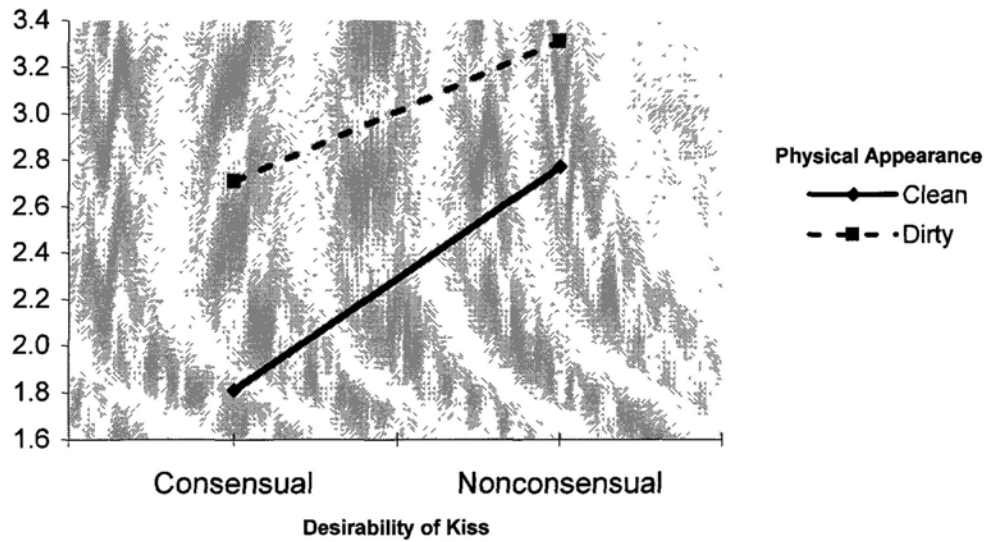


Figure 8: Effects of physical cleanliness and consensus of kiss on participants' rating of distress in Experiment 2

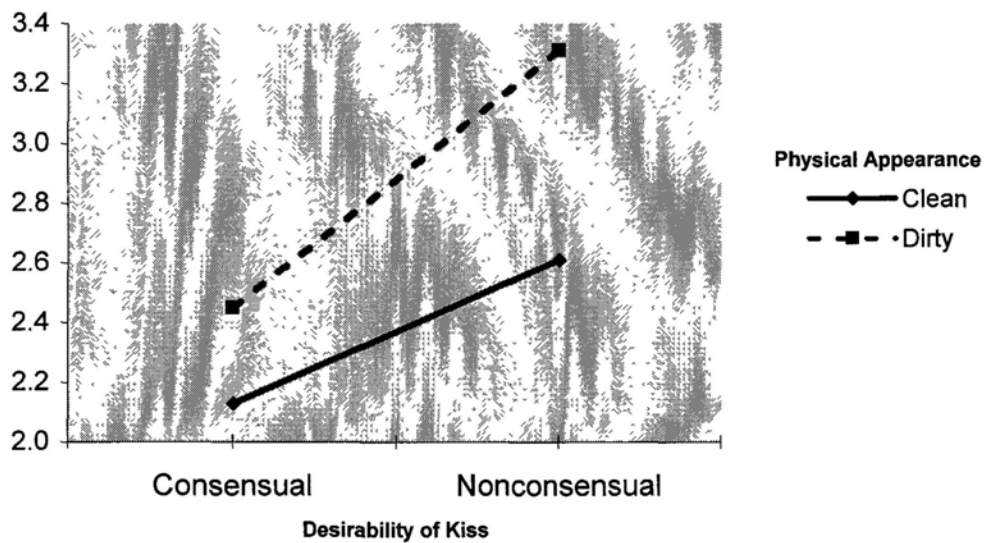


Figure 9: Effects of physical cleanliness and consensus of kiss on participants' rating of anxiety in Experiment 2

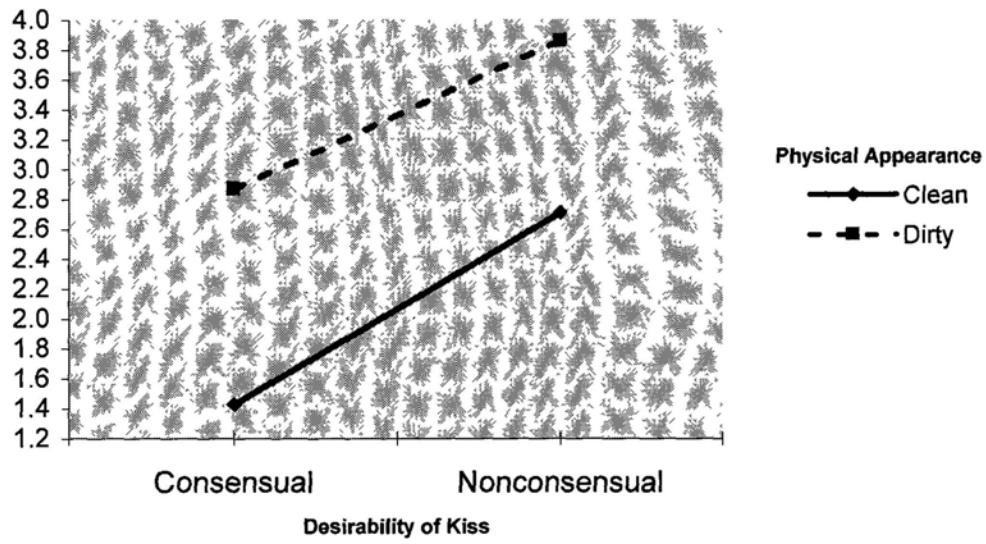


Figure 10: Effects of physical cleanliness and consensus of kiss on participants' rating of disgust towards kisser's physical cleanliness in Experiment 2

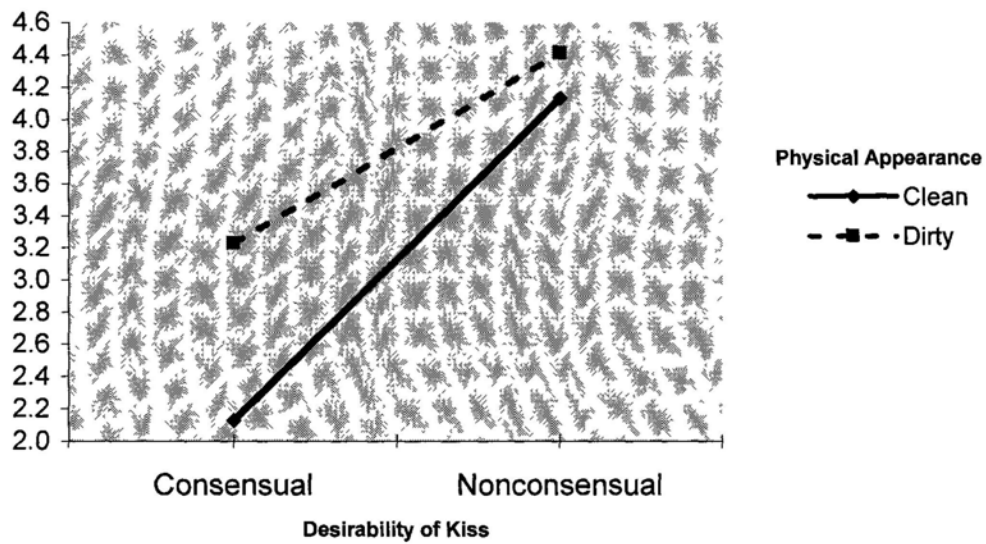


Figure 11: Effects of physical cleanliness and consensus of kiss on participants' rating of disgust towards kisser's behaviour in Experiment 2

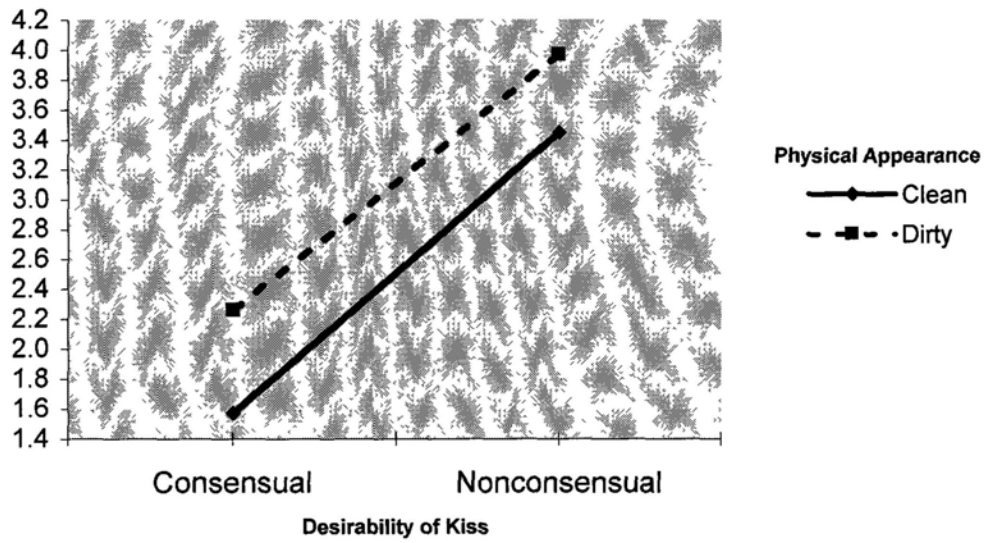


Figure 12: Effects of physical cleanliness and consensus of kiss on participants' rating of anger in Experiment 2

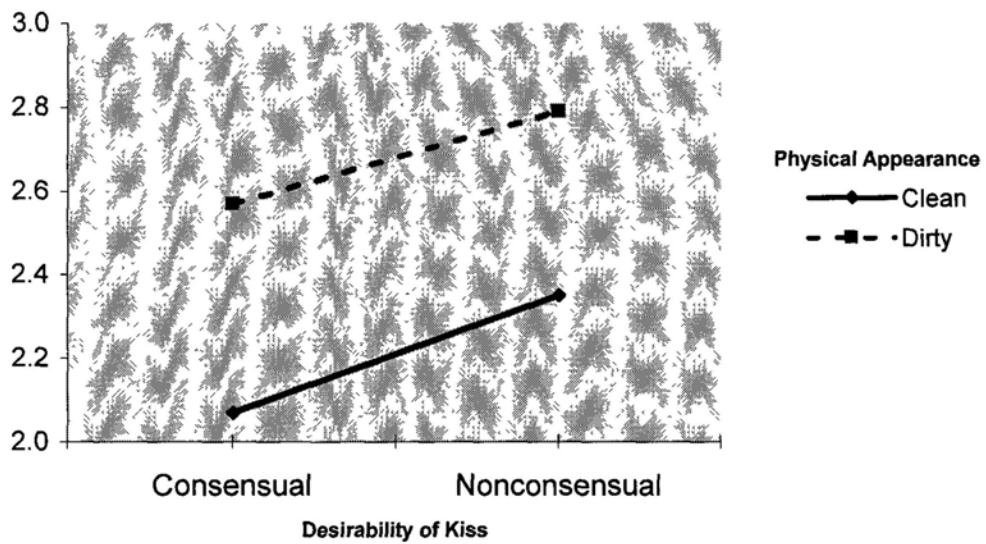


Figure 13: Effects of physical cleanliness and consensus of kiss on participants' rating of shame in Experiment 2

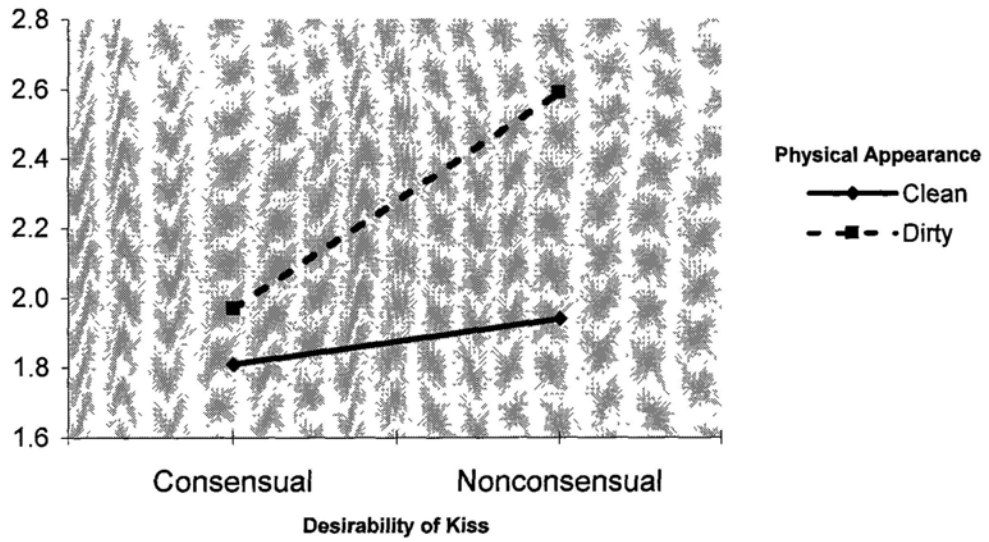


Figure 14: Effects of physical cleanliness and consensus of kiss on participants' rating of guilt in Experiment 2

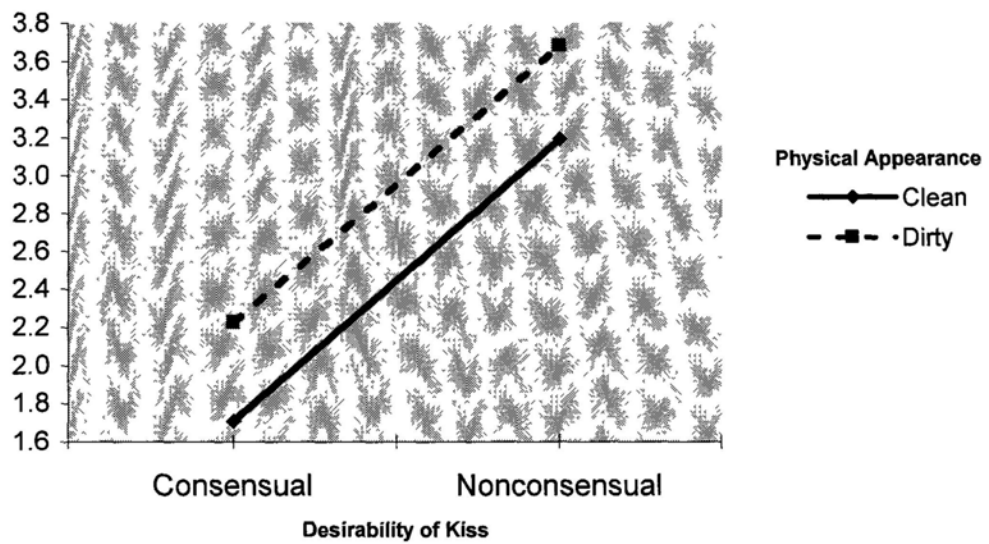


Figure 15: Effects of physical cleanliness and consensus of kiss on participants' rating of humiliation in Experiment 2

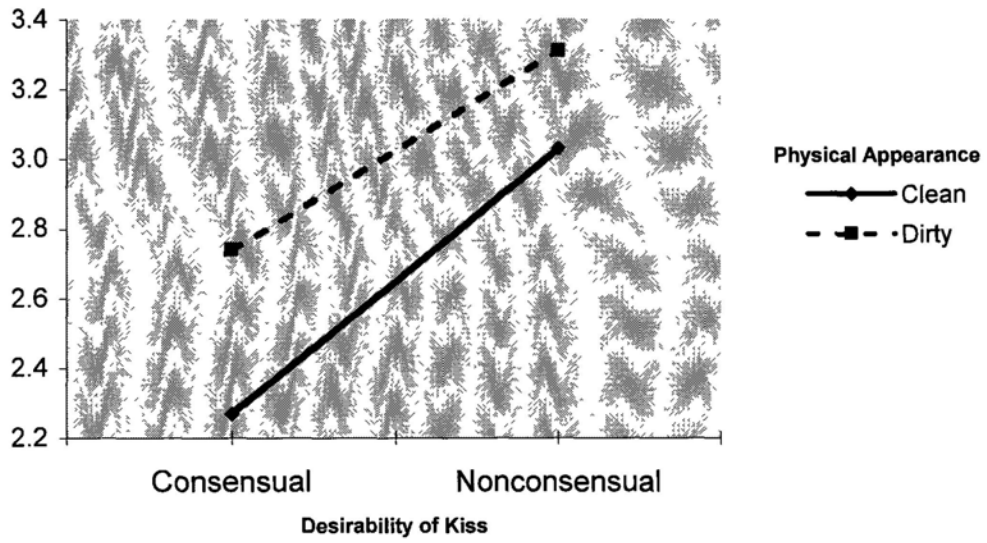


Figure 16: Effects of physical cleanliness and consensus of kiss on participants' rating of fear in Experiment 2

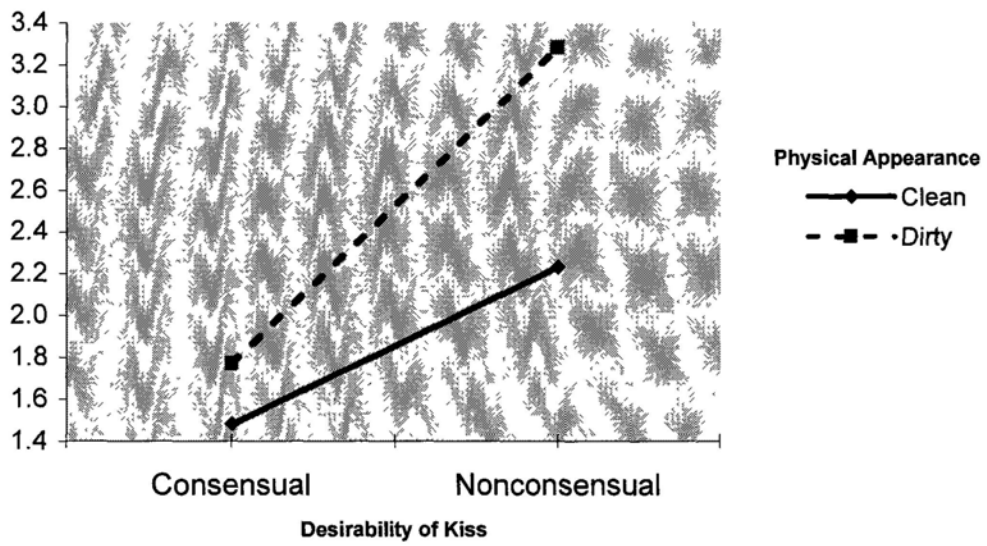


Figure 17: Effects of physical cleanliness and consensus of kiss on participants' rating of feeling sad in Experiment 2

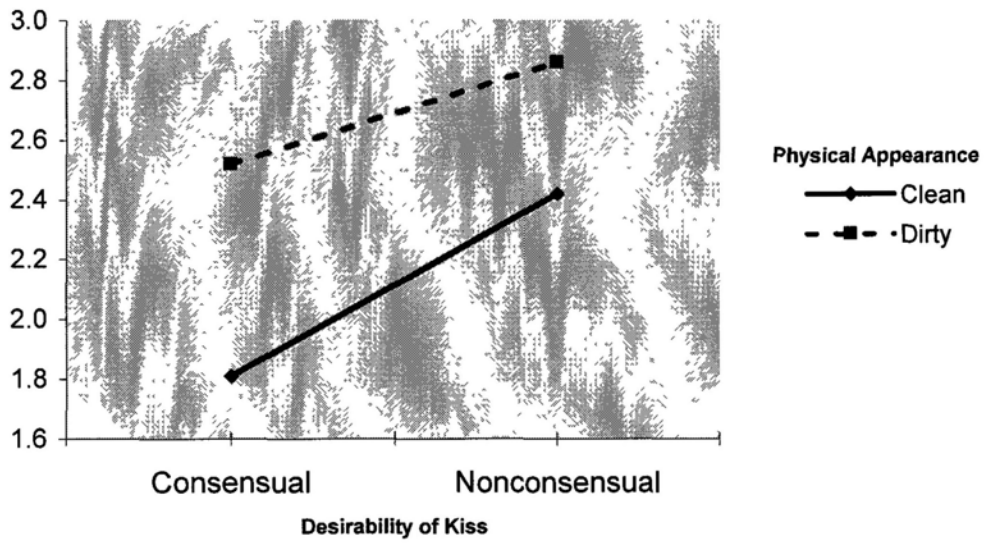


Figure 18: Effects of physical cleanliness and consensus of kiss on participants' rating of feeling cheap in Experiment 2

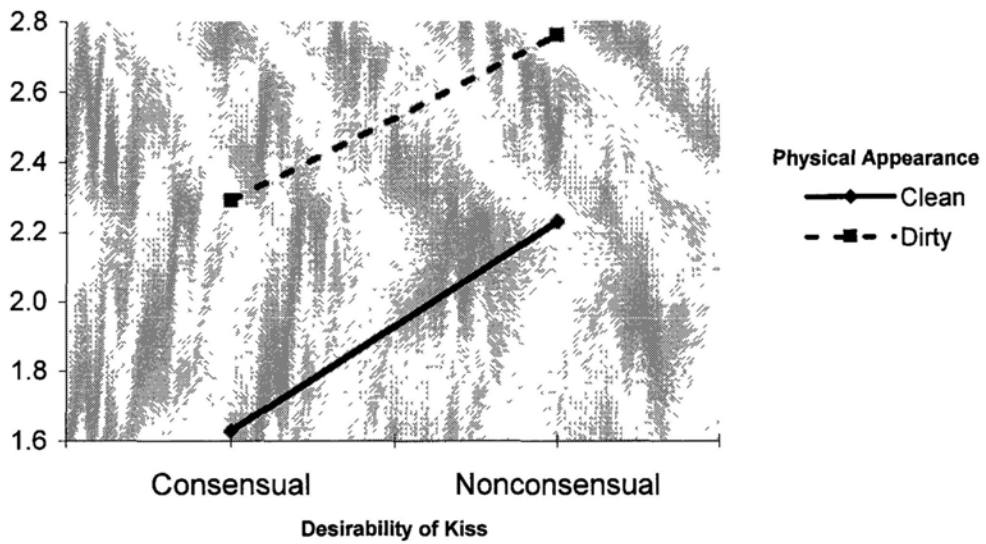


Figure 19: Effects of physical cleanliness and consensus of kiss on participants' rating of feeling sleazy in Experiment 2

Table 12: Means and standard deviations on negative emotions for each condition in Experiment 2

Variables	Condition				Test statistics			
					F			
	CC (N=31)	DC (N=31)	CNC (N=31)	DNC (N=29)	(df)	[effect size: partial eta squared]		
M (SD)	M (SD)	M (SD)	M (SD)	Main effect (physical cleanness)	Main effect (consensus of kiss)	Interaction effect		
Distressed	1.81 (.91)	2.71 (.94)	2.77 (1.26)	3.31 (1.14)	13.81*** (1,118) [.11]	16.40*** (1,118) [.12]	.90 (1,118) [.01]	
Anxious	2.13 (1.15)	2.45 (1.12)	2.61 (1.28)	3.31 (1.14)	5.75* (1,118) [.05]	9.96** (1,118) [.08]	.78 (1,118) [.01]	
Disgust (man's physical attributes)	1.43 (.77)	2.87 (.89)	2.71 (1.24)	3.86 (.99)	51.71*** (1,118) [.31]	39.55*** (1,118) [.25]	.56 (1,118) [.01]	
Disgust (man's behaviour)	2.13 (.96)	3.23 (1.06)	4.13 (.96)	4.41 (.76)	16.28*** (1,118) [.12]	86.67*** (1,118) [.42]	5.62* (1,118) [.05]	

Variables	Condition				Test statistics		
					F		
	CC (N=31)	DC (N=31)	CNC (N=31)	DNC (N=29)	(df)		
	M (SD)	M (SD)	M (SD)	M (SD)	Main effect (physical cleanliness)	Main effect (consensus of kiss)	Interaction effect
Angry	1.58 (.85)	2.26 (1.12)	3.45 (1.23)	3.97 (1.09)	9.24** (1,118) [.07]	83.34*** (1,118) [.41]	.17 (1,118) [.00]
Ashamed	2.07 (1.09)	2.57 (1.22)	2.35 (1.14)	2.79 (1.24)	4.81* (1,116) [.04]	1.45 (1,116) [.01]	.02 (1,116) [.00]
Guilty	1.81 (1.11)	1.97 (.98)	1.94 (1.15)	2.59 (1.27)	3.93* (1,118) [.03]	3.33 (1,118) [.03]	1.43 (1,118) [.01]
Humiliated	1.71 (1.07)	2.23 (1.10)	3.19 (1.28)	3.68 (1.34)	5.30* (1,116) [.04]	44.70*** (1,116) [.28]	.01 (1,116) [.00]

[effect size: partial eta squared]

Variables	Condition				Test statistics		
	CC (N=31)	DC (N=31)	CNC (N=31)	DNC (N=29)	F	(df)	
	M (SD)	M (SD)	M (SD)	M (SD)	[effect size: partial eta squared]		
					Main effect (physical cleanliness)	Main effect (consensus of kiss)	Interaction effect
Afraid	2.26 (.89)	2.74 (1.09)	3.03 (1.25)	3.31 (1.23)	3.50 (1,118) [.03]	10.87*** (1,118) [.08]	.26 (1,118) [.00]
Sad	1.48 (.81)	1.77 (.72)	2.23 (1.26)	3.28 (1.25)	12.78*** (1,118) [.10]	35.81*** (1,118) [.23]	4.11* (1,118) [.03]
Cheap	1.81 (.91)	2.52 (1.24)	2.42 (1.12)	2.86 (1.25)	7.88** (1,118) [.06]	5.45* (1,118) [.04]	.42 (1,118) [.00]
Sleazy	1.65 (.92)	2.29 (1.13)	2.23 (1.20)	2.76 (1.33)	7.99** (1,118) [.06]	6.33** (1,118) [.05]	.07 (1,118) [.00]

• * denotes p < .05, ** denotes p < .01; *** denotes p < .001

Negative appraisal of the kiss

Participants' appraisal of the kiss referred to how far one evaluated the kiss imposed on them as a violation, deception (i.e. felt being cheated) and betrayal. The three appraisal variables were previously noted to yield strong correlation to each other across three experiments (see Table 6). Furthermore, the variables were also conceptually similar to each other. Therefore, the three variables were collapsed together by averaging the three, yielding one composite appraisal index.

Participants' negative appraisal of the kiss ($M=2.47$, $SD=.93$) significantly predicted feeling of dirtiness, composite washing urge, avoidance to share food (drink and chips), and various negative emotions such as distress, anxiety, disgust (towards man's physical presentation), disgust (towards man's behaviour), anger, shame, guilt, humiliation, fear, sadness, cheap, and sleazy (see Table 13).

Table 13: Regression analysis of appraisal variable in Experiment 2

	R ²	B	SD	Beta	T	Sig.
Dirty	.42	-.54	.06	.65	9.27	.00
Composite score for urge to wash	.13	.31	.08	.37	4.01	.00
Drink avoidance	.11	-.25	.07	-.34	-3.85	.00
Chip avoidance	.12	-.25	.06	-.35	-4.03	.00
Distressed	.39	.52	.06	.62	8.66	.00
Anxious	.29	.43	.06	.54	6.90	.00
Disgust- Physical	.30	.41	.06	.54	7.02	.00
Disgust- Behaviour	.57	.57	.05	.76	12.49	.00
Angry	.60	.54	.04	.77	13.29	.00
Ashamed	.37	.51	.06	.61	8.29	.00
Guilty	.40	.53	.06	.631	8.83	.00
Humiliated	.66	.56	.04	.81	14.85	.00
Afraid	.35	.49	.06	.59	7.95	.00
Sad	.53	.58	.05	.73	11.62	.00
Cheap	.26	.42	.07	.51	6.42	.00
Sleazy	.35	.48	.06	.594	8.03	.00

3.3 EXPERIMENT 3

The final sample of Experiment 3 included 64 participants. They were randomly assigned to either non-betrayal condition (NB, N=31) or betrayal condition (B, N=33) respectively.

Randomization check

To evaluate if randomization had been achieved, preliminary analyses were run to see if participants on the two conditions differed on baseline measures (i.e. age, prior party experience, vividness ratings and other questionnaire measures).

Age and baseline ratings on contamination fear

Participants' age did not differ from each other across two different conditions (i.e. NB and B) (see Table 14).

Both groups were comparable on ratings of trait contact contamination fear and trait mental contamination fear on the Vancouver Obsessive Compulsive Inventory (VOCI, Thordarson et al, 2004) at baseline (see Table 14).

Vividness ratings of scenario described

All participants, on average, rated the scenario described as realistic, vivid and easy to imagine (>3 on a 5-point Likert scale), regardless of the time points of assessment (baseline vs. post manipulation) and conditions (non betrayal vs. betrayal). There was no significant difference between the two groups in terms of clarity of the images, ease to imagine the scenario and how realistic the scenario described in both time points of assessment (baseline and post-manipulation) (see Table 14).

Table 14: Means and standard deviations on demographic, baseline questionnaire scores, vividness of scenario ratings, and manipulation check for each condition in Experiment 3

Variables	Condition		Test statistics <i>F</i> (<i>df</i>)
	Non-betrayal (N=31)	Betrayal (N=33)	
	M (SD)	M (SD)	
Age	20.61 (2.16)	20.17 (1.39)	.92 (1,59)
Party Experience	1.52 (.68)	1.58 (.75)	.11 (1,62)
VOCI-CC	10.55 (7.38)	12.52 (7.20)	1.16 (1,62)
VOCI-MC	14.71 (10.03)	16.38 (10.15)	.43 (1,62)
Clarity of images	3.41 (.16)	3.04 (.16)	3.09 (1,62)
Described scenario as realistic	3.15 (.18)	2.83 (.17)	1.30 (1,62)
Ease to imagine scenario	3.67 (.13)	3.55 (.13)	.52 (1,62)
Man as inappropriate	2.31 (.14)	3.32 (.14)	29.32*** (1,62)

Variables	Condition		Test statistics F (df)
	Non- betrayal (N=31) M (SD)	Betrayal (N=33) M (SD)	
Felt being betrayed	1.79 (.12)	2.70 (.12)	12.36*** (1,62)
Felt being cheated	1.726 (.14)	2.88 (.13)	20.56*** (1,62)

• * denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$

• Note: VOCl-CC=Vancouver Obsessive Compulsive Inventory- Contact Contamination Scale, VOCl-MC=Vancouver Obsessive Compulsive Inventory- Mental Contamination Scale

Prior party experience

No significant difference was found in party experience rating between the non-betrayal and betrayal groups (see Table 15).

Exposure to non-consensual sexual encounter

In this sample, 26.56% (N=17) of participants reported personal experience of non-consensual sexual encounter. Besides, 37.5% (N=24) reported having a friend who had non-consensual sexual experience and 29.69% (N=19) reported having witnessed a non-consensual sexual encounter. Among these reported exposures, about 0% to 30.7% of reported incidents took place at a party setting. No significant group difference (comparing non-betrayal condition with betrayal condition) was identified for their prior exposures to non-consensual sexual encounters at party setting (see Table 15).

Table 15: Number of participants with exposures to non-consensual sexual encounters for each condition in Experiment 3

Variable	Condition				Test Statistics
	Non-betrayal (N=31)		Betrayal (N=33)		
	Yes	Party setting	Yes	Party setting	χ^2 (df)
Own experience	9 (14.1%)	0 (0%)	8 (12.5%)	0 (0%)	n/a
Friend's experience	13 (20.3%)	4 (30.77%)	11 (17.2%)	1 (9.09%)	2.28 (1)
Witness	10 (15.6%)	3 (30%)	9 (14.1%)	1 (11.11%)	1.21 (1)

Manipulation Check

In order to ascertain the effectiveness of experimental manipulation, participants' evaluation on the man described in the scenario and vividness of scenario were assessed.

Significant group difference was observed on ratings of how inappropriate was the man's behaviour described in the scenario (see Table 14). An interaction effect of time (within subject variable) and condition (between subject variable) was observed for behavioural inappropriateness of the man. To elaborate, participants' ratings regarding the man's inappropriate behaviour did not differ at baseline when the scenario described was the same across both conditions. In the post manipulation assessment, participants in betrayal (B) condition reported significantly higher rating on man's behaviour as inappropriate compared to participants in non-betrayal (NB) condition.

Similarly, a significant interaction effect was observed on participants' reported sense of being betrayed. While no significant difference was observed at baseline, salient discrepancy was noted at the second assessment when participants in betrayal (B) condition rated significantly higher on the item of being betrayed, compared to participants in non-betrayal (NB) condition (see Table 14). In other words, participants witnessing boyfriend

kissing another woman reported a stronger sense of being betrayed compared to witnessing another man kissing a woman. This is consistent with the intended consequence of the experimental manipulation in which a heightened sense of being betrayed is expected to arise in B condition.

The same result was found on the item assessing feeling of being cheated. An interaction effect between time and condition was obtained (see Table 14). While no significant difference was observed at baseline, a salient discrepancy was noted at the second assessment when participants in B condition rated significantly higher on the item of being cheated, compared to participants in NB condition. In other words, participants witnessing boyfriend kissing another woman reported a significantly stronger sense of being cheated, compared to witnessing another man kissing a woman.

Mental contamination

Mental contamination was measured by three indices, namely feeling of dirtiness, urge to wash, and negative emotions.

Feeling of dirtiness

A significant interaction effect was found on feeling of dirtiness in the current experiment (see Table 16). There was no significant difference after listening to the audio recording describing a consensual kiss with the boyfriend

across both conditions (at baseline). Salient discrepancy emerged at the second assessment (post-manipulation) when participants in B condition reported a significantly higher feeling of dirtiness, compared to participants in NB condition (see Figure 20). In other words, participants witnessing boyfriend kissing another woman reported a stronger feeling of dirtiness, compared to witnessing another man kissing a woman.

Table 16: Means and standard deviations on indices of mental contamination for each condition in Experiment 3

Variables	Condition				Test statistics		
	Baseline		Betrayal		t/F	(df)	[effect size: partial eta squared]
	Non-betrayal (N=31)	Baseline betrayal (N=33)	Non-betrayal (N=31)	Betrayal (N=33)			
	M	M	M	M	Between Subject	Interaction effect	
	(SD)	(SD)	(SD)	(SD)	- Condition (NB/B)		
					Within Subject - Time		
Dirty	1.65 (.66)	1.97 (.86)	2.19 (.91)	3.56 (1.01)	76.79*** (1,61) [.56]	21.47*** (1,61) [.26]	18.29*** (1,61) [.23]
Composite score for urge to wash	2.14 (.87)	2.16 (.96)	1.93 (.86)	2.94 (1.27)	7.08* (1,34) [.17]	2.54 (1,34) [.07]	22.32*** (1,34) [.40]
Willingness to share drink	3.97 (1.08)	3.61 (1.27)	3.10 (1.42)	1.94 (1.12)	56.57*** (1,62) [.48]	8.73** (1,62) [.12]	5.56* (1,62) [.08]
Willingness to share chip	4.55 (1.03)	4.36 (1.03)	3.94 (1.48)	2.55 (1.39)	50.38*** (1,62) [.45]	9.09** (1,62) [.17]	12.38*** (1,62) [.13]

• * denotes p < .05; ** denotes p < .01; *** denotes p < .001

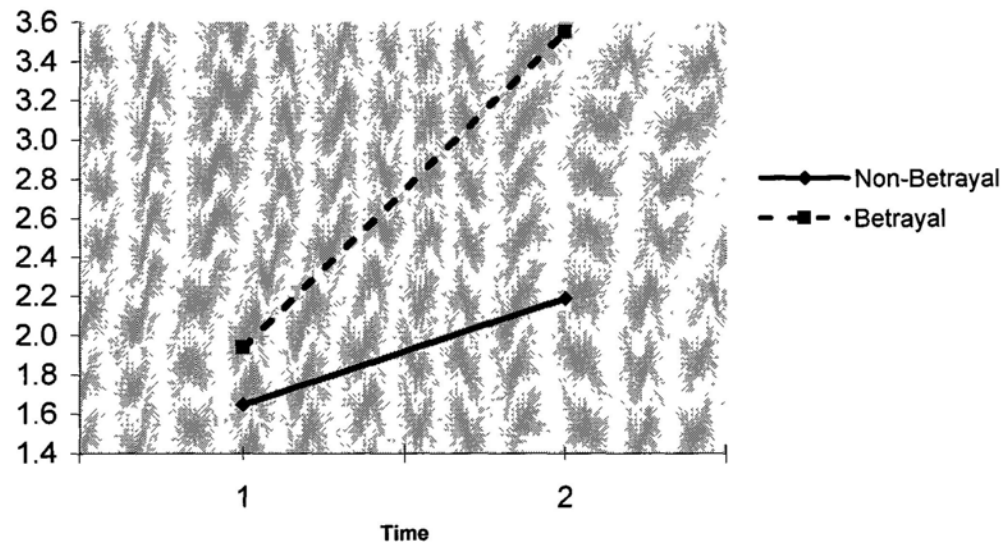


Figure 20: Effect of betrayal on participants' rating of dirtiness in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

Urge to wash, avoidance and actual washing behaviour

Only participants who reported feeling dirty would be asked to further report their urge to wash. Therefore, a subsample of 92 responses (Baseline B, N=22; Baseline NB, N=17; B, N=28; NB, N=23) provided data for this part of analysis.

Urge to wash

An aggregate measure of five items on washing urge was used to assess urge to wash (Fairbrother, Newth and Rachman, 2005; Herba and

Rachman, 2007; Elliott & Randomsky, 2009). This aggregate measure showed good internal consistency in both previous study (coefficient $\alpha=.89$ in Herba & Rachman, 2007) and in this current experiment (coefficient α range from .86 to .92).

Regarding the urge to wash, a significant interaction effect was found (see Figure 21). There is no significant difference between the two conditions (B & NB) at baseline (after sharing a consensual kiss with the boyfriend). While participants in B condition demonstrated a significant increase of washing urge at time 2 (post-manipulation), after witnessing boyfriend kissing another woman, such trend was not seen in participants who found out that the kisser was not her boyfriend.

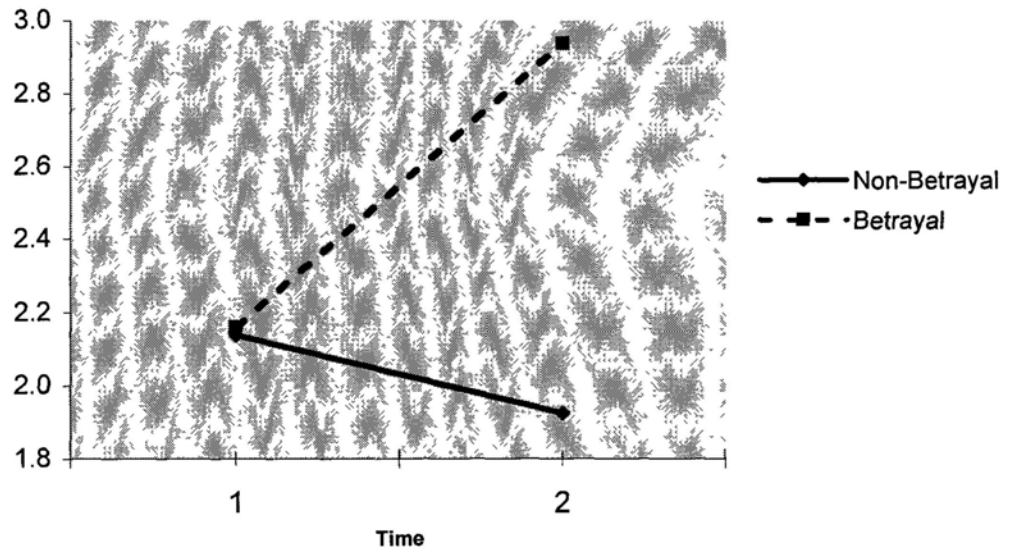


Figure 21: Effect of betrayal on participants' rating of composite score for urge to wash in Experiment 3

(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

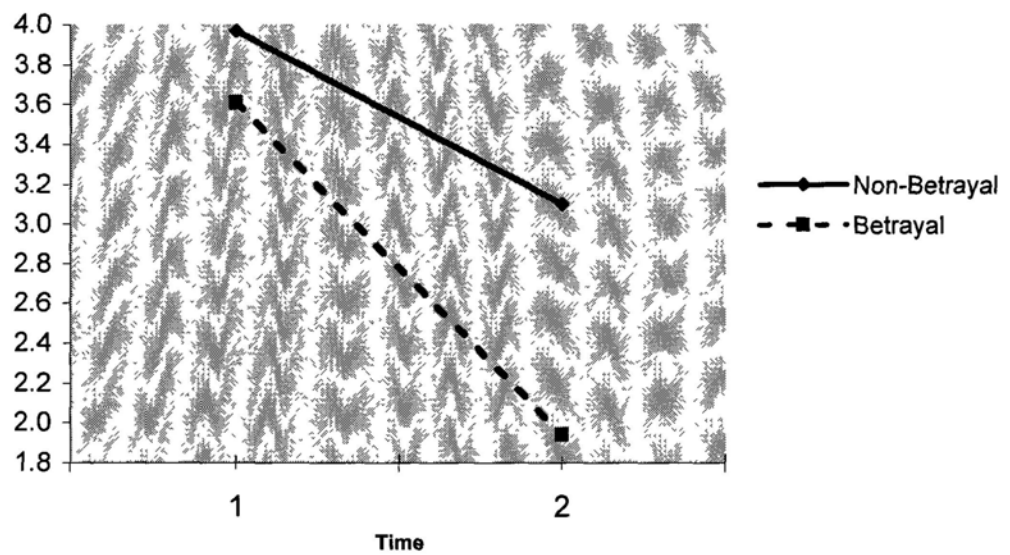


Figure 22: Effect of betrayal on participants' rating of willingness to share drink with kisser in Experiment 3

(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

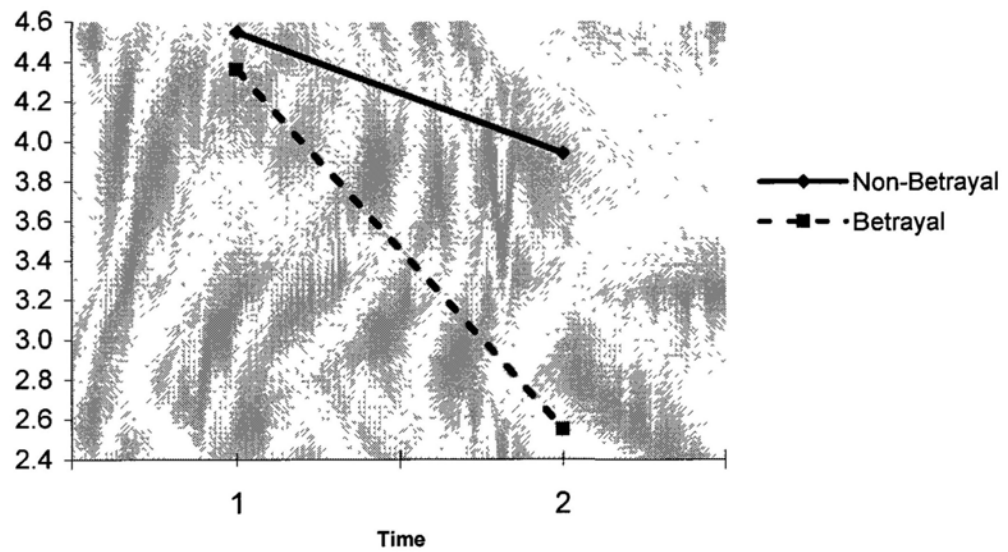


Figure 23: Effect of betrayal on participants' rating of willingness to share chips with kisser in Experiment 3

(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

Avoidance

All participants were asked about how willing they were to share a drink or to eat chip from the same bowl with their boyfriend.

Significant interaction effects were found for both avoidance to drink from the same glass and avoidance to eat chip from the same bowl (see Table 16). There was no significant difference in avoidance behaviour after imagining a consensual passionate kiss with the boyfriend across both conditions. However, significant discrepancy was noted at time 2 (post-manipulation) when participants in B condition expressed significantly

greater resistance to drink from the same glass (see Figure 22) or eat chips from the same bowl with the boyfriend (see Figure 23), compared to their non-betrayal counterparts.

Effect sizes (partial eta squared) of the differences for the three indices of mental contamination ranged between .08 and .40 (see Table 16).

Actual washing behaviour

All participants were offered a cup of water, wet tissue, and direction to washroom during a short break after the experiment and before the debriefing. Participants' washing behaviour was recorded after the break. A piece of behaviour was defined as neutralization if the participant reported that engaging in that specific piece of washing behaviour helped to relieve her distress generated by the experimental manipulation. Since the actual number of participants displaying such washing behaviour was rather small, there was no adequate power for significance testing between experimental conditions and only descriptive statistics were reported here (see Table 17).

There was no participant in both groups engaging in drinking water or washing themselves in the restroom at baseline in order to neutralize the unease created by the experiment. Only one participant in the NB baseline reported to wipe her hands to ease the tension created by the imagined

scenario.

After the experimental manipulation, no participant of both groups resorted to washing in restroom to neutralize. Only one participant in the NB group resorted to wiping hands for neutralization. As for neutralization by drinking, three from the NB group and four from the B group reported so.

Table 17: Number of participants of post experiment washing behaviour in each condition in Experiment 3

Variable	Condition							
	Baseline- NB (N=31)		Baseline- B (N=33)		Non betrayal (N=31)		Betrayal (N=33)	
	Yes	Undo	Yes	Undo	Yes	Undo	Yes	Undo
Accept water from experimenter	20	0	19	0	11	3	13	4
Wipe hand with wet tissue	1	1	1	0	1	1	0	0
Use washroom (e.g. wash hand/ face)	3	0	1	0	2	0	2	0

General Distress

Significant interaction effects between time and betrayal manipulation were found for the following negative emotions: distressed, anxious, disgusted towards boyfriend’s behaviour, disgusted towards boyfriend’s physical presentation, angry, humiliated, sad, cheap , and sleazy (see Table 18). The participants in both conditions did not differ at the baseline on their

negative emotions. However, participants on the betrayal condition reported a significantly higher level of negative emotions at time 2 assessment (post-manipulation) (see Figure 24 to Figure 35). Effect sizes (partial eta squared) of the differences between the two experimental conditions on negative emotions at post-manipulation ranged from .10 to .38 (see Table 18).

Table 18: Means and standard deviations on negative emotions for each condition in Experiment 3

Variables	Condition				Test statistics				
	Baseline		Betrayal		Within Subject		Between Subject		Interaction effect
	Non-betrayal (N=31)	Baseline betrayal (N=31)	Non-betrayal (N=33)	Betrayal (N=33)	- Time	- Condition (NB/B)	t/F (df)		
Distressed	M (SD)	M (SD)	M (SD)	M (SD)	79.66*** (1,62)	11.50*** (1,62)	14.99*** (1,62)		
	1.77 (.72)	1.85 (.91)	2.52 (1.15)	3.73 (1.01)	[.56]		[.20]		
Anxious	M (SD)	M (SD)	M (SD)	M (SD)	47.88*** (1,62)	3.56 (1,62)	13.46*** (1,62)		
	1.97 (.95)	1.82 (.92)	2.45 (1.06)	3.39 (1.17)	[.44]		[.18]		
Disgust (man's physical attributes)	M (SD)	M (SD)	M (SD)	M (SD)	101.82*** (1,62)	8.43** (1,59)	13.39*** (1,62)		
	1.35 (.76)	1.45 (.83)	2.29 (1.22)	3.45 (1.28)	[.62]		[.18]		
Disgust (man's behaviour)	M (SD)	M (SD)	M (SD)	M (SD)	134.67*** (1,62)	38.29*** (1,62)	19.48*** (1,62)		
	1.55 (.62)	2.00 (1.17)	2.68 (1.11)	4.52 (.87)	[.69]		[.24]		

[effect size: partial eta squared]

Variables	Condition				Test statistics			
	Baseline		Betrayal		Within Subject		Between	
	Non-betrayal (N=31)	Baseline betrayal (N=31)	Non-betrayal (N=33)	Betrayal (N=33)	M	M	Subject	Interaction effect
	M (SD)	M (SD)	M (SD)	M (SD)	- Time	- Condition	(NB/B)	
Angry	1.19 (.40)	1.64 (1.11)	2.71 (1.32)	4.42 (.79)	165.01*** (1,62) [.73]	37.63*** (1,62) [.19]	14.41***	(1,62) [.38]
Ashamed	1.77 (.85)	1.76 (.71)	2.03 (1.20)	2.61 (1.39)	9.62** (1,62) [.13]	1.94 (1,62) [.03]	2.74	(1,62) [.04]
Guilty	1.39 (.67)	1.21 (.49)	1.77 (1.06)	2.18 (1.40)	20.20*** (1,62) [.25]	.37 (1,62) [.01]	3.72	(1,62) [.06]
Humiliated	1.19 (.48)	1.52 (.91)	2.03 (1.30)	3.55 (1.25)	59.47*** (1,62) [.49]	25.41*** (1,62) [.29]	10.26**	(1,62) [.14]

[effect size: partial eta squared]

Variables	Condition				Test statistics		
	Baseline		Betrayal		t/F	df	Interaction effect
	Non-betrayal (N=31)	Betrayal (N=31)	Non-betrayal (N=33)	Betrayal (N=33)			
	M	M	M	M			
	(SD)	(SD)	(SD)	(SD)			
	[effect size: partial eta squared]						
	Between						
	Subject						
	- Condition						
	(NB/B)						
Afraid	1.65 (.80)	1.82 (1.01)	2.26 (1.34)	2.67 (1.38)	17.41*** (1,62) [.22]	1.57 (1,62) [.03]	.45 (1,62) [.01]
Sad	1.23 (.50)	1.39 (.86)	2.48 (1.44)	3.94 (1.09)	117.40*** (1,62) [.65]	18.70*** (1,62) [.23]	13.45*** (1,62) [.18]
Cheap	1.42 (.77)	1.67 (.85)	1.97 (.88)	3.18 (1.42)	44.00*** (1,62) [.42]	13.10*** (1,62) [.17]	9.66** (1,62) [.14]
Sleazy	1.26 (.51)	1.58 (.83)	1.94 (1.00)	3.09 (1.53)	44.52*** (1,62) [.42]	13.26*** (1,62) [.18]	6.50* (1,62) [.10]

• * denotes p < .05; ** denotes p < .01; *** denotes p < .001

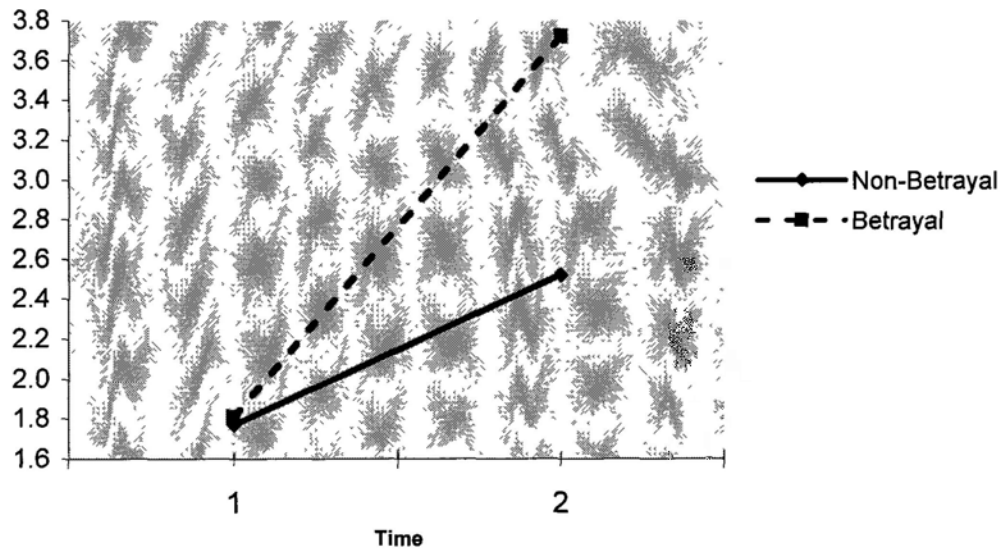


Figure 24: Effect of betrayal on participants' rating of distress in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

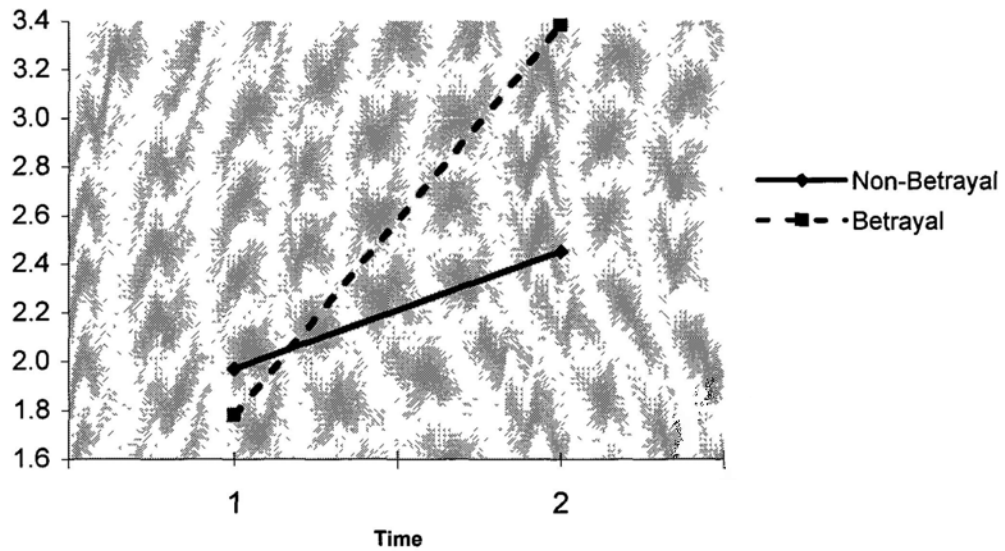


Figure 25: Effect of betrayal on participants' rating of anxiety in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

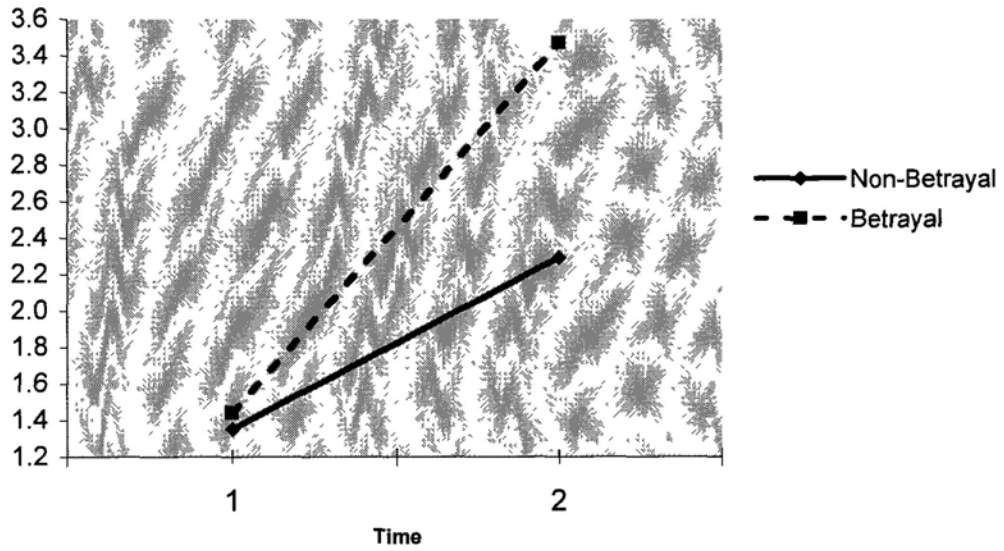


Figure 26: Effect of betrayal on participants' rating of disgust towards kisser's physical presentation in Experiment 3

(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

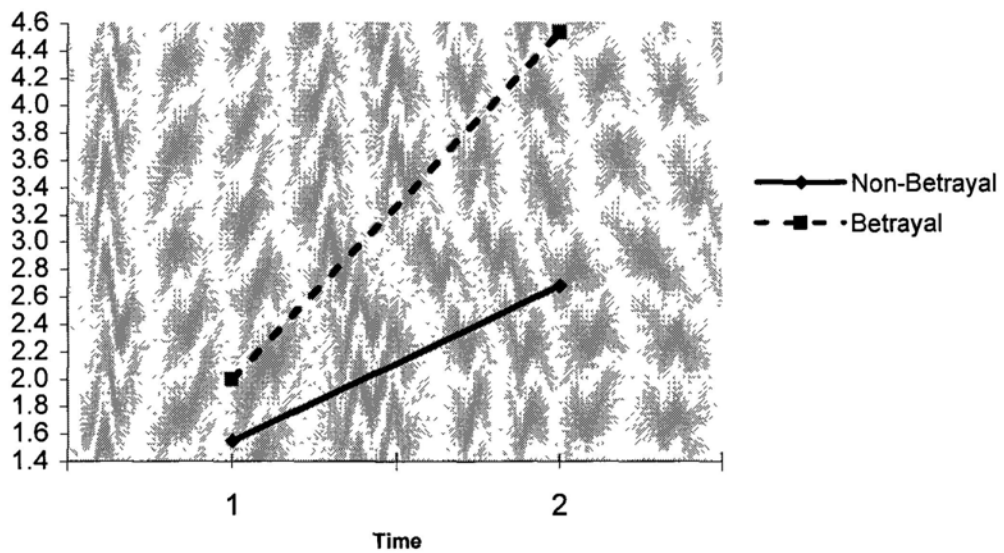


Figure 27: Effect of betrayal of kiss on participants' rating of disgust towards kisser's behaviour in Experiment 3

(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

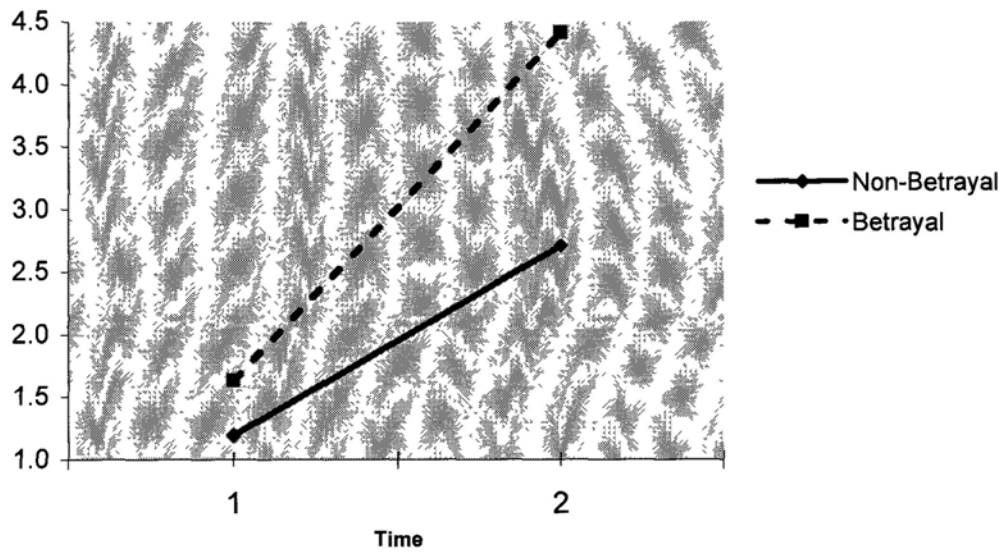


Figure 28: Effect of betrayal on participants' rating of anger in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

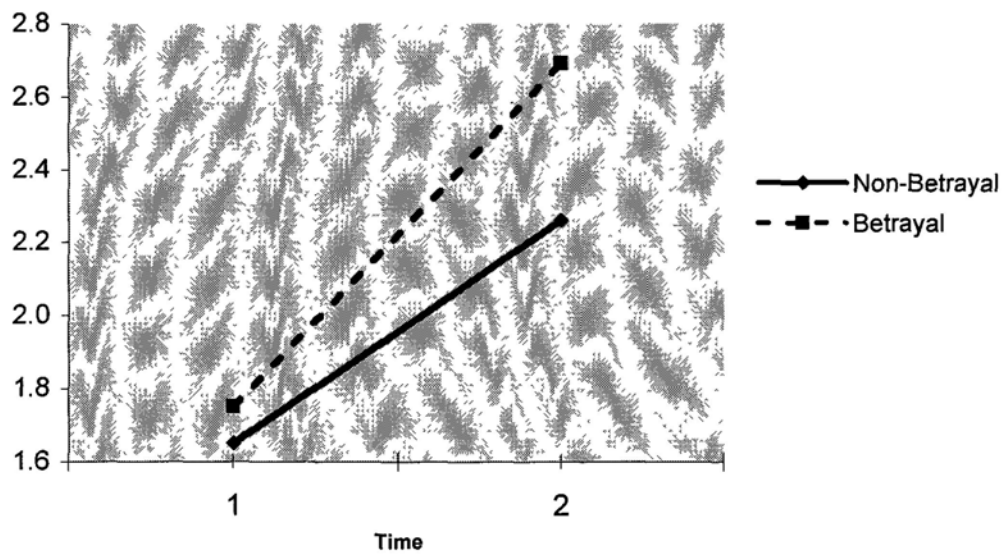


Figure 29: Effect of betrayal on participants' rating of fear in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

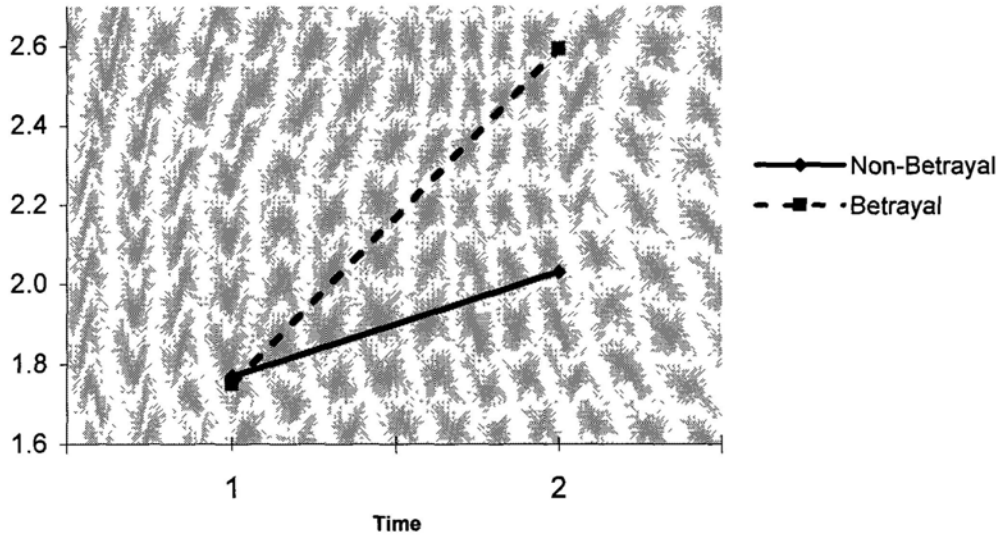


Figure 30: Effect of betrayal on participants' rating of shame in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

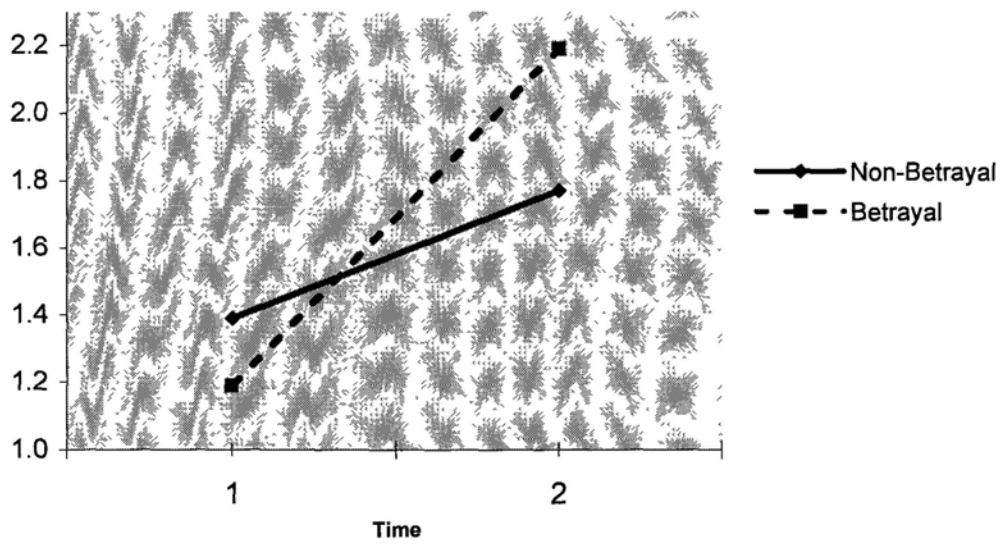


Figure 31: Effect of betrayal on participants' rating of guilt in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

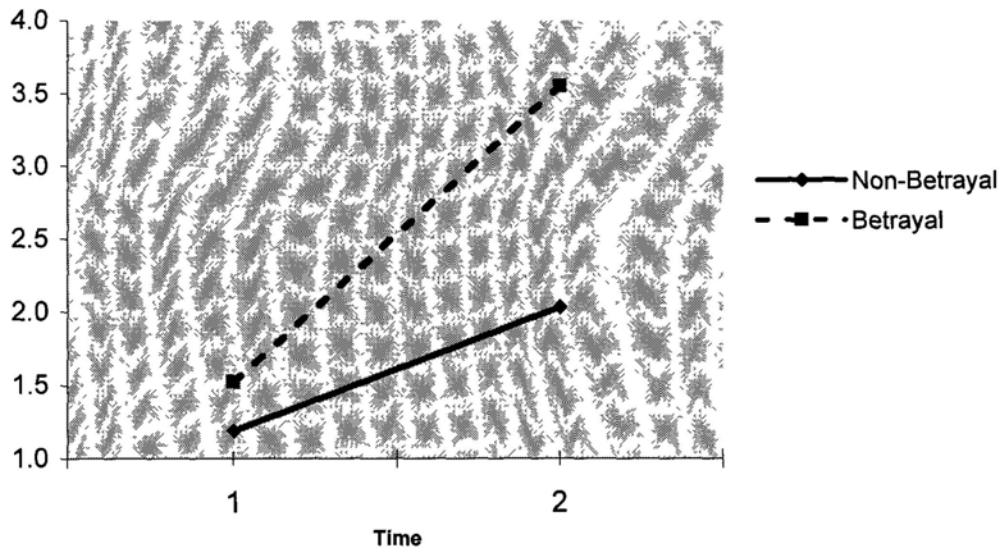


Figure 32: Effect of betrayal on participants' rating of humiliation in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

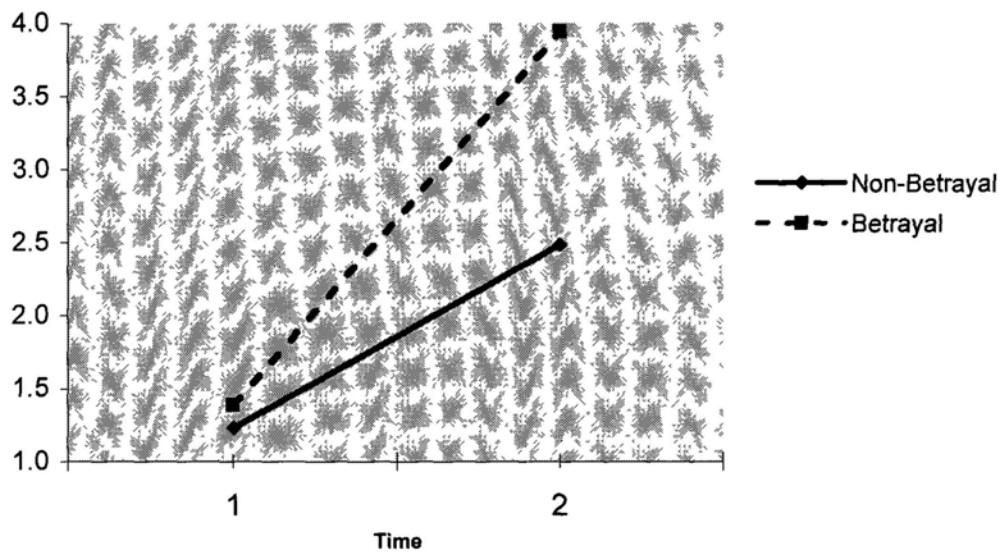


Figure 33: Effect of betrayal on participants' rating of sadness in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

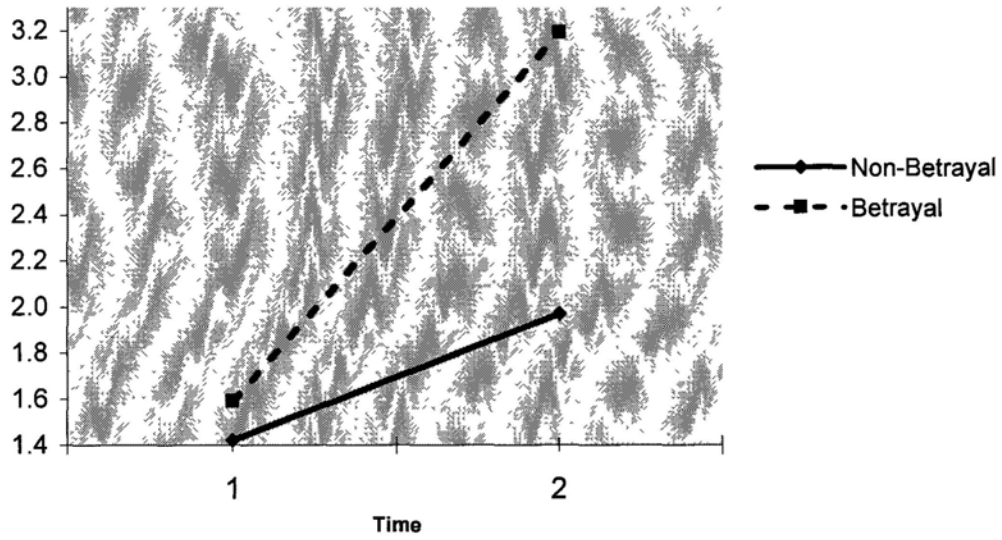


Figure 34: Effect of betrayal on participants' rating of feeling cheap in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

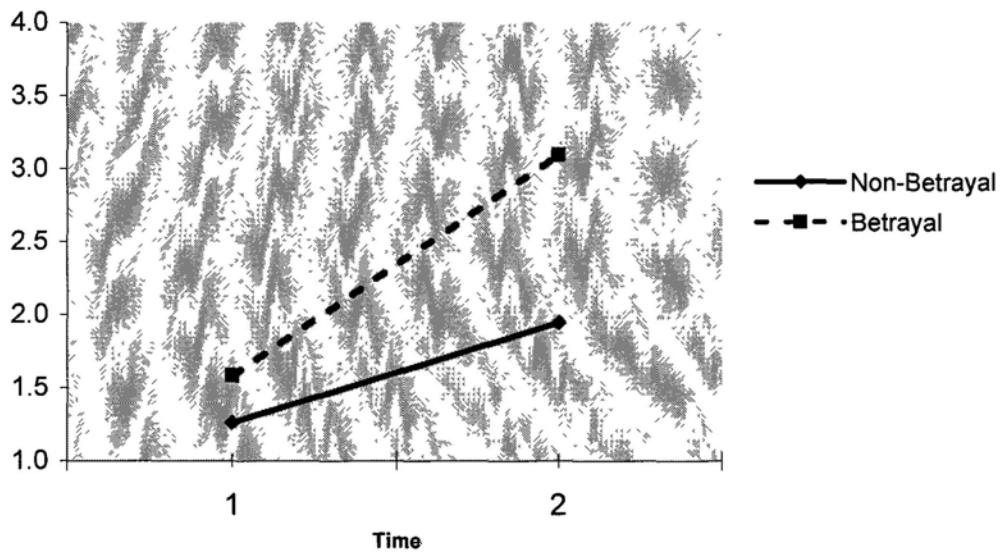


Figure 35: Effect of betrayal on participants' rating of feeling sleazy in Experiment 3
(Note: Time 1 refers to assessment at baseline, and Time 2 refers to assessment after experimental manipulation of betrayal)

Negative appraisal of the kiss

Participants' negative appraisal of the kiss referred to how far the participants evaluated the kiss imposed on them as a violation, deception (i.e. felt being cheated) and betrayal. The three appraisal variables were previously noted to yield strong correlation among each other across the three experiments (see Table 6). Besides, the variables were also conceptually similar to each other. Therefore, the three variables were collapsed together by averaging the three, yielding one composite appraisal index ($M=3.34$, $SD=1.29$ in Experiment 3).

Consistent with the previous two experiments, participants' negative appraisal of the kiss significantly predicted feeling of dirtiness, washing urge, avoidance to share food (drink and chips) and various negative emotions such as distress, anxiety, disgust (towards man's physical presentation), disgust (towards man's behaviour), anger, shame, guilt, humiliation, fear, sadness, cheap, and sleazy (see Table 19).

Table 19: Regression analysis of appraisal variable in Experiment 3

	R ²	B	SD	Beta	T	Sig.
Dirty	.46	.79	.11	.68	7.16	.00
Composite score for urge to wash	.28	.56	.13	.53	4.35	.00
Drink avoidance	.26	-.50	.11	-.51	-4.62	.00
Chip avoidance	.27	-.45	.09	-.52	-4.77	.00
Distressed	.34	.65	.11	.59	5.68	.00
Anxious	.39	.71	.11	.63	6.35	.00
Disgust- Physical	.47	.68	.09	.69	7.39	.00
Disgust- Behaviour	.61	.79	.08	.78	9.93	.00
Angry	.66	.81	.07	.82	11.07	.00
Ashamed	.29	.55	.11	.54	5.00	.00
Guilty	.17	.45	.13	.41	3.55	.00
Humiliated	.79	.82	.05	.89	15.41	.00
Afraid	.23	.48	.11	.48	4.30	.00
Sad	.55	.70	.08	.74	8.72	.00
Cheap	.49	.72	.09	.70	7.74	.00
Sleazy	.45	.65	.0	.67	7.10	.00

Chapter 4 Discussion

Mental contamination is a key concept when understanding a constellation of perplexing clinical phenomena found in psychiatric disorders such as obsessive-compulsive disorder (OCD). While psychological models for OCD are available, the characteristics of mental contamination have not been adequately addressed in these models. Only recently has a new model specifically for contamination fear been proposed (Rachman, 2004, 2006), it is still in its infancy and is in need of further support from experimental evidence.

Building on Rachman's (2004, 2006) model on contamination fear in the West, the first objective of the present dissertation is to validate the phenomenon of mental contamination in a non-Western population, Chinese in this study, by an independent research team in Hong Kong. This dissertation further attempts to add to the literature new knowledge on two specific areas (1) by examining the relationship of mental contamination with contact contamination and (2) by testing the experience of a form of psychological violation, i.e., betrayal, on mental contamination. Three experiments are designed to address these issues separately, using the "dirty kiss" experiment as the experimental paradigm (Fairbrother, Newth & Rachman, 2005).

4.1 REPLICATION OF MENTAL CONTAMINATION

Fairbrother and Rachman (2004) and Fairbrother, Newth and Rachman (2005) demonstrated that feeling of mental contamination could be induced from non-consensual sexual encounters in both victims of sexual assault or university students via experimental manipulation.

Using the “dirty kiss” experiment developed by Fairbrother, Newth and Rachman (2005), Experiment 1 hypothesizes that an imagined non-consensual kiss will induce a subjective experience of mental contamination, including a feeling of dirtiness, negative emotions, (e.g. distress, disgust and etc) and a stronger washing urge. The above hypotheses are largely supported by the results of Experiment 1. As a direct replication of Fairbrother, Newth & Rachman’ study (2005), Experiment 1 successfully reproduces the phenomenon of mental contamination. The feeling of mental contamination is consistently revealed by indices representing cognitive (appraisal of the non-consensual kiss), affective (feeling of dirtiness and negative emotions) and behavioural (washing behaviour) domains.

Participants who visualize a non-consensual kiss with an acquaintance report a significantly higher level of dirtiness. While all participants imagining a

non-consensual kiss report some degree of dirtiness, one-third of the participants in the control condition (imagining a consensual kiss) does not report any feeling of dirtiness.

Participants imagining a non-consensual kiss, on average, report a significantly stronger urge to wash (e.g. rinse mouth, brush teeth, wash face and take shower). Furthermore, stronger reluctance to share a drink or eat from the same bowl of chips with the man who kisses them is reported.

Consistent with the previous studies (Fairbrother and Rachman, 2004; Fairbrother, Newth and Rachman, 2005), the elevated feeling of dirtiness and behavioural responses (i.e. urge to wash, avoidance, and actual washing behaviour) are associated with numerous negative emotions (e.g. distress, anger, shame, fear, humiliation, etc).

This experiment is a replication of the “dirty kiss” experiment conducted by an independent research team other than the authors of the mental contamination theory in the Western population, i.e., Rachman and his associates. First, replication research by different independent researchers is important in science. This tests and ensures the generalization of the findings. In other words, the findings are not the artefacts of a particular way that one research team is conducting research, which unintentionally “manufactures”

certain results. Another independent researcher from a different research laboratory, conducting research somewhat differently, can cross-check whether certain results are not methodological artefacts but genuine results of certain experimental manipulation. Second, the generalizability of the original findings of the “dirty kiss” experiment is further enhanced by researching on a different population, Chinese in this study, as contrasted to previous Westerners. So, mental contamination is not only a Western phenomenon but can also be found in Chinese population.

When compared with Fairbrother, Newth and Rachman (2005), participants in our control condition (imagining a consensual kiss) report a relatively higher level of dirtiness. Upon further inquiries, many participants report that although the kiss is described as consensual in the audiotaped recording, it remains rather “ego-dystonic” to them, as it is rather unusual to kiss a male new acquaintance in their first meeting. This is understandable in the context of the Chinese culture, since attending party and kissing a newly met man is not as common as it is in the Western culture. Despite a relatively higher level of feeling of dirtiness in our sample than in Fairbrother, Newth and Rachman’s sample (2005), a significant group difference between a non-consensual kiss and a consensual kiss remains evident, supporting the

unique impact of the former.

In this experiment, appraisal variables (i.e. how violated or how cheated one perceives as a result of the non-consensual kiss) demonstrate significant predictive power on feeling of dirtiness, urge to wash, and negative emotions. This is consistent with a recent study by Radomsky and Elliot (2009), which indicated that perceived violation predicted feelings of dirtiness and internalizing negative emotions. The findings of this study and those of Radomsky and Elliot (2009) support the contention that the reason behind the power of a non-consensual kiss in eliciting mental contamination is the sense of psychological violation that the former incurs. So the elicitation of mental contamination is a psychological event instead of an actual contact with objectively soiled objects as in the case of contact contamination.

4.2 RELATIONSHIP BETWEEN CONTACT CONTAMINATION AND MENTAL CONTAMINATION

Experiment 2 focuses on investigating the effect of physical presentation of the kisser and its interaction with the consensus of the kiss. First, Experiment 2 shows that kissing a physically dirty man, regardless of whether the kiss is consensual or not, elicits a sense of dirtiness, associated behaviour (e.g., urge to wash), and negative emotions. This confirms the presence of contact contamination, in which contact with dirty, infected or dangerous substances would instantly unleash fear of contamination, feeling of dirtiness, and associated behaviour.

Second, consistent with the findings of Experiment 1, a significant feeling of contamination, urge to wash, avoidance to share food/ drink, and negative emotions emerge after imagining a non-consensual kiss, regardless of whether the kisser was physically clean or dirty. In other words, results inform us that a non-consensual kiss with a physically clean man, explicitly portrayed in Experiment 2, continues to elicit mental contamination.

Another piece of evidence supporting the above premise comes from the finding that a non-consensual kiss significantly elevates the participants' rating

on the kissers' physical dirtiness. It means that even when the kisser is explicitly described as physically clean, a non-consensual kiss can make the participants to perceive the kisser as physically dirty. It is exactly how Rachman (2004, 2006) describes mental contamination: it looks clean, but feels dirty. It further illustrates that contamination fear aroused by a non-consensual kiss is mental in nature.

This indicates that the elicitation of mental contamination does not require any contact with soiled, infected or harmful stimuli. It is not a clinical phenomenon based upon contact contamination or developed out of it, despite that many individuals with mental contamination also report contact contamination.

Nevertheless, the mental contamination induced in the current experiment still involves imagined physical contact (i.e. kiss). It awaits further testing to see if mental contamination can also be elicited without any contact (i.e. even in imagined form). A possible extension of the current experiment is designing a scenario that is equally repugnant to the participants but does not involve any physical contact (e.g. sexual harassment in verbal forms or dirty gaze to private body parts of the participants).

Third, the current results do not support an interactive hypothesis of

physical cleanliness and consensus of the kiss. In other words, a non-consensual kiss with physically dirty man does not produce a significantly raised level of contamination, as indicated by most indices, with few exceptions (i.e., two types of negative emotions). This implies that contact contamination and mental contamination are quite separate phenomena, independent of each other, so that their combination does not particularly produce any synergic effect. In fact, while individuals reporting mental contamination often also report contact contamination. The reverse is not true. This indicates that the two forms of contamination are not exactly so closely related. The lesson is that future research efforts have to concentrate on identifying unique factors accounting for the elicitation of mental contamination. Finding factors eliciting contact contamination may not help, since they may not even aggravate the severity of mental contamination, not to mention causing it.

Across all conditions in Experiment 2, the predictive power of appraisal variables demonstrated in the first experiment is replicated. Appraisal variables were able to predict significant feeling of dirtiness, urge to wash, and negative emotions. Once again, the importance of the psychological experience of a psychological violation is highlighted and re-confirmed.

4.3 PSYCHOLOGICAL VIOLATION: EXTENSION OF “DIRTY KISS”

EXPERIMENT

Experiment 3 sets out to investigate another form of psychological violation (in the form of betrayal) and further disentangle mental contamination from contact contamination. Rather than being forced upon a kiss by a new acquaintance at a party, the participants are asked to imagine sharing a consensual kiss with their boyfriend. So there is no “physical violation” as in the case of the previous two experiments in which the non-consensual kiss can be construed as forcefully intruding into the physical boundary of the participants.

Participants in both the betrayal and non-betrayal conditions do not show any signs of contamination after a consensual kiss with boyfriends, and there is no marked group difference in contamination ratings. However, the knowledge afterward about the boyfriends’ betrayal immediately elicits a sense of dirtiness, associated behaviour, and negative emotions, which are not found in the baseline assessment before the knowledge of the betrayal. Such surge of contamination fear is not found in the non-betrayal group.

Consistent with the previous two experiments, participants’ negative

appraisal of the experience as a form of psychological violation (i.e. how far they felt violated, cheated or betrayed) significantly predicts the feeling of dirtiness, washing urge, and negative emotions. The important role of psychological violation in the etiology of mental contamination is once replicated, as in the case of the second and third experiments.

Experiment 3 has several important strengths. First, before this experiment, mental contamination is investigated mainly in the context of sexual assaults (either with victims or imagined unwanted sexual encounter). These studies are limited by the fact that both physical violation and psychological violation are intertwined. Thus, it is difficult to tease out which component is the main, active ingredient leading to mental contamination. Therefore, examining mental contamination subsequent to a consensual sexual encounter is important in further pinpointing the unique role of the psychological mechanism behind that explains mental contamination.

Second, this experiment specifically investigates the role of psychological violation in the form of betrayal. Previous research using the "dirty kiss" experiment indicates the non-consensus of the kiss to be the "key factor" for the elicitation of mental contamination. It is further speculated that it is the sense of psychological violation aroused in a non-consensual kiss that may be

the psychological mechanism leading to a sense of mental contamination.

Questions asking participants whether the non-consensual kiss is appraised as a form of psychological violation have supported the above speculation.

However, psychological violation can take many forms (e.g. betrayal, degradation, humiliation). Preliminary research data (Rachman, 2010) and case in my clinic suggest that individuals can experience mental contamination

as a result of being betrayed. Based on this evidence, Experiment 3 is specifically designed to investigate betrayal, which is construed as a salient form of psychological violation. Betrayal refers to “the sense of being harmed by the intentional actions or omissions of a trusted person” (Rachman, 2010).

In this manner, betrayal also carries the accent of an intrusive violation as it infringes on the boundary of a said relationship. Experiment 3 thus boldly extends the “dirty kiss” experiment by reverting the kiss to something that is not “dirty” initially, in fact, a consensual kiss between a girl and her boyfriend. It

will not produce mental contamination to the participants. This prediction is borne out by the baseline assessment of Experiment 3. Only subsequently when a betrayal by the boyfriend is noticed by the participants, does mental contamination emerge. There is no further non-consensual kiss between the participants and the boyfriend to explain the emergence of mental

contamination. The previous consensual kiss remains their only intimate contact as described in the scenario of Experiment 3. The experimental manipulation clearly pinpoints that the psychological experience of betrayal is related to the emergence of mental contamination. This experiment further disentangles mental contamination from contact contamination. It is the psychological violation involved in the betrayal, and the contact, that causes the mental contamination.

Third, Experiment 3 adopts a within-subject design in which a change in perception, behaviour and emotions concerning the same kiss is captured from among the same individuals. A within-subject design is more powerful, since the changes, introduced by the experimental manipulation, are elicited in the same individuals. So the cause-and-effect relationship between the studied variables is more convincingly demonstrated.

4.4 COGNITION SPECIFIC TO MENTAL CONTAMINATION

The above findings of the three experiments and the discussion have argued that mental contamination is different from contact contamination in the sense that no actual contact for objectively soiled, infected or harmful substances are required for the emergence of mental contamination. Instead, it is the experience of psychological violation involved in the non-consensual kiss and betrayal that triggers the mental contamination. It has also been argued and proved above that the experience of psychological violation is what is behind in eliciting the mental contamination. In this section, further efforts are made to speculate the link between psychological violation and mental contamination.

First of all, in everyday language use, the meaning of contamination or dirtiness is not just limited to something soiled with dirt, foul and unclean (e.g. dirty laundry). It carries another level of symbolic meanings referring to something that is vile (e.g. dirty tricks), obscene (e.g. dirty joke), unscrupulous (e.g. a dirty fighter), and resentful (e.g. a dirty look). Apparently, these meanings of dirtiness carry a (im)moral and violation connotation. Examples of getting rid of “dirt” by physical cleansing are ample throughout human history.

Cleansing is frequently adopted as a religious ritual to purify the soul in a symbolic manner (e.g. in old Chinese dynasties, or in Baptism). Besides, attempts of “washing away” immoral deeds are evident in literature, one of the well known example pertains to Lady Macbeth in Shakespearean play “Macbeth”.

Physical and psychological violations, as defined, are likely to be closely connected to morality or immorality to be exact. Rachman (1994, 2004, 2006) had been alerted to the importance of immorality when elaborating on mental contamination. Besides, the role of violated morality is not novel to OCD, it has been addressed in research for thought action fusion of OCD individuals (i.e. moral TAF) (Berle & Starcevic, 2005). Yet, not all violation of morality would lead to feeling of contamination. For example, individuals may be less likely to feel contaminated when they fail to carry out their duty within a community. In this way, what specifically in the realm of morality would evoke the feeling of mental contamination?

A theory on morality (Shweder, Much, Mahapatra & Park, 1997) proposed three distinct ethics, namely ethics of community, autonomy and divinity. While ethics of community and autonomy focused on violation of another person’s rights as an individual and failures to carry out duties within a

community, ethics of divinity referred to a causation of impurity or degradation to oneself or others.

The ethics of divinity represented the idea that "*every entity in nature enjoys its particular right to exist and to be what it is according to its own nature*" (Shweder, Much, Mahapatra & Park, 1997). Therefore, such ethics could function as a basis for responsibilities and boundaries, as an "existential support for personal identity" (Shweder, Much, Mahapatra & Parke, 1997).

Physical and psychological violation thus constitutes a violation of the ethics of divinity, when an individual's boundary of physical and psychological self is intruded. Thus, sexual assault and betrayal can lead to mental contamination when they make an individual to conclude that desecration of morality has occurred. Such irreverence of morality would cause a moral taint, which is appraised as permanent and irreversible to the person.

Furthermore, violating ethics of divinity could trigger feeling of disgust (Haidt et al., 1993). In turn, disgust sensitivity was shown to be an individual trait (Herba and Rachman, 2007; Elliott and Radomsky, 2009) that would affect the occurrence of mental contamination. Disgust is an emotion, which is commonly believed to originate from food rejection. It has been generalized through cultural evolution, so that elicitors of rejection and disgust in many

cultures include moral violation (Rozin, Haidt, and McCauley, 2000).

Moralization of disgust helps to shun away not only physical contaminants, but also elicitors that cause menace to one's psychological or social well being (Rozin, Haidt, & McCauley, 2000; Miller, 1997). For example, in a study by Rozin, Markwith & McCauley (1994), participants still expressed abhorrence when asked to wear clothes worn by serious criminals, despite thoroughly laundered. This suggests that wrong-doers or moral violation can be treated as a source of pollution or contagion.

From an evolutionary perspective, food rejection is adaptive as ingestion involves "the intimate act of taking something that is outside the self and incorporating it into the self". Following this line of thinking, anything violating an intimate, internalized object or value can lead to a sense of contamination and its related disgust. This may be a possible explanation accounting for contamination as a result of sexual assault and betrayal.

Converging argument comes from the concept of self (Burris & Rempel, 2004), the boundary of self is expandable and flexible. It can encompass the physical body, social groups, owned objects, and familiar surroundings. Both sexual assault and betrayal nail on the violation of an intimate relationship, which might be regarded as an integral part of self. As one's self-boundary is not

merely defined by our physical self, one's mental self (e.g. moral value) can be considered an integral part of self. When one's immanent value is being sullied, it can affect one's mental integrity and lead to reaction of disgust and fear like food rejection or disease avoidance, as in the case of contact contamination. However, in the above situation, it would be a case of mental contamination.

4.5 LIMITATIONS

Several limitations of this study should be noted. This research only tackles one form of mental contamination, namely contamination arising after violation. More studies are needed to see if the current findings can indeed generalize to all forms of mental contamination. For example, can self contamination or fear of morphing be elicited with psychological experiences? What kinds of psychological factors can lead to self contamination and fear of morphing?

Failure to replicate actual washing behaviour

Across all three experiments, although slightly more participants in the experimental groups resort to actual washing behaviours, no actual statistical test can be conducted due to the small number of participants involved. This is not consistent with previous studies (Fairbrother, Newth and Rachman, 2005; Herba and Rachman, 2007), in which more participants were involved in actual washing or rinsing behaviour to counteract the feeling of mental contamination after the experiment.

Two explanations can be made. First, it may indicate that participants in our experiments do not experience mental contamination of equal strength to

that found in participants with Fairbrother, Newth and Rachman's study (2004). Nevertheless, the ratings of dirtiness, composite score for urge to wash and negative emotions in this study do not seem to deviate significantly from those of other related studies (Fairbrother, Newth & Rachman, 2005). Another explanation pertains to the issue of threshold in resorting to actual washing behaviour. It may be possible that participants in this study reporting a similar level of contamination fear, yet, the threshold to actual washing behaviour is higher.

Use of non-clinical participants

Another major short-coming of my present study pertains to the use of non-clinical university students, instead of actual OCD patients. The reason for choosing the former stems from an ethical concern regarding the potential impact of the "dirty kiss" experimental manipulation. It is unsure whether the experiment would aggravate the severity of contamination fear among the patients with OCD. There is no previous study employing the "Dirty Kiss" experiment with clinical patients. Therefore, non-clinical sample is used for an analogue purpose, from which experimental findings would be used to generalize to actual clinical population.

Nevertheless, utilizing non-clinical participants in a study of mental

contamination would incur concerns about the results' applicability in clinical population. In other words, it is important to clarify how far are experiences, like a non-consensual kiss, a kiss with a physically dirty man, or a kiss from an intimate partner who later betrays her, the origins of mental contaminations in OCD patients.

Should the psychopathology in question (i.e. OCD in this case) is shown to be dimensional or incremental in nature (i.e., only quantitatively different from normal behaviour in degree) and not categorical (i.e., qualitatively different from normal behaviour), one would have better confidence in generalizing results from analogue study to clinical populations (Gibbs, 1996). Evidence supporting a continuum postulation in OCD would be examined.

As early as in the 1970's, Rachman and de Silva (1978) has published their first study, probing into the question whether there is continuity between cognitive phenomenon within the normal population and its clinical variant in OCD. In their study (1978), 84% of the non clinical participants reported unwanted cognitive intrusions that were similar to the obsessions of patients with OCD in terms of content and form. Even professionals could not differentiate between normal and abnormal obsessions based on its content. A more recent replication by Calamari and Janeck (1997) also yielded consistent

results with Rachman and de Silva (1978)'s findings.

Later studies (Freeston, Ladouceur, Thibodeau, & Gagnon, 1991; Parkinson & Rachman, 1981; Purdon & Clark, 1993; Salkovskis & Harrison, 1984) also found that a majority (80-90%) of non-clinical populations experience obsession-relevant unwanted mental intrusions. Convergent evidence from thought sampling studies in non-clinical participants (Klinger, 1978; Klinger & Cox, 1987) also showed that a significant portion (22%) of the thoughts were labeled by the participants as strange or distorted. Some (13%) thoughts were considered as "out of character".

It is consistently shown that unwanted intrusive thoughts, impulses or images were common even in non-clinical participants. Furthermore, they are also found to resemble clinical obsession in terms of form and content (Clark, 2004; Papageorgiou and Wells, 2004; Rachamn & Hodgson, 1980; Sarason et al., 1996).

With the above brief review, it is becoming clearer that the primary difference between the unwanted intrusive thoughts in clinical and non-clinical participants differ in degree rather than in kind (Clark, 2005). In this way, the use of analogue sample in studying underlying process in mental contamination should yield reasonable generalizability.

Confounding variables in experimental manipulations

Despite successful confirmation of the initially stated hypotheses, the results can still be confounded by the inclusion of more than one relevant variables in the experimental manipulations. In the Experiment 1, the experimental manipulation involves two possible contributing variables (i.e. a morally disgusting man and a non-consensual kiss vs. a helpful, desirable man and a consensual kiss).

Nonetheless, the morality of the character of the man has been previously examined by a recent study by Elliott and Radomsky (2009). The experimental manipulation in the said study dismantles the (im)moral aspects of the man (e.g., comes to the aid of others versus lies, cheats and steals) from the act (e.g. a consensual kiss versus a non-consensual kiss). Results show main effects for both the non-consensus of the kiss and the immorality of the character as well as an interaction effect. However, post-hoc comparisons indicate that the non-consensual kiss condition produces the worst ratings of mental contamination, regardless of the morality of the character of the man. In other word, the non-consensual kiss appears to be the more powerful variable in bringing about the contamination fear, compared to the morality of the character. These findings strengthen the confidence about the impact of the

non-consensual kiss, or the sense of violation behind it, in contributing to the findings in this study.

Besides, Experiment 2 and 3 may also serve to strengthen confidence in the results of Experiment 1. In Experiment 2, no description of immoral character of the man is included. The other two variables, that is physical cleanliness of the kisser and the consensus of kiss, are included in the experimental manipulations. Therefore, the contamination fear elicited is shown to be a result of physical dirtiness of the kisser and the non-consensual kiss.

In Experiment 3, the only independent variable included is a sense of betrayal (a form of psychological violation). No description of the physical cleanliness, physical transgression, or immoral character of the man is included. Therefore, the significant feeling of contamination elicited in Experiment 3 serves as a stronger claim, suggesting that mental contamination can emerge as a result of betrayal alone (i.e., a psychological violation).

Generalizability of the described scenario

As the described scenario is designed to elicit a feeling of mental contamination in female participants, so a female sample is recruited. From a

clinical and theoretical perspective, the phenomenon of mental contamination is not limited to the female. Yet, despite the success in demonstrating mental contamination in this study and others, it remains unknown regarding whether the current results can be generalized to a male sample. Therefore, it would also be interesting to modify the dirty kiss experiment and see whether a reversed sexual assault would lead to similar responses in male participants.

Measures used in the study

The measures that are used to assess mental contamination (e.g. Mental Contamination Rating – MCR) are specifically developed for the purposes of the study. It would have been advantageous to include well-validated measures to cross-validate measures of this study. However, at the time that this project was conceived, no such measures were available.

Another limitation regarding measures used in this study is a lack of reliable index in differentiating contact and mental contamination. Despite resemblance in phenomenology, Rachman (2006) proposed several identifying features of mental contamination. These included difficulty in locating sites of contamination, refractory responses to washing etc. Unfortunately, no well-validated measures assessing these specific domains in contamination fear are available in the literature.

In the current study, measurement of the feeling of dirtiness relies only on one single item of perceived feeling of dirtiness. There is a need to develop more items. Besides, the current measures also relied heavily on participants' self report of their experience. However, relying on self report measures on emotions, especially in anxiety, might not be adequate. Although behavioural responses (e.g. actual washing behaviour) were also assessed, it might be possible that physiological measures could yield fruitful information.

Although previous experience on unwanted sexual encounter was assessed, our measures did not cover on participants' previous experience of physical aggression or betrayal. These few pieces of information were important so as to control for the confounding effect of these prior experience on their responses to the current experimental manipulation.

The current measures mainly assessed negative emotions aroused by the experimental manipulation. However, it might be possible that participants might experience emotions other than those with negative valence. Therefore, it might be informative and interesting to assess positive emotions associated with experimental manipulation. This would facilitate further exploration on the relationship between mood and the resultant behaviours (e.g. washing).

4.6 FURTHER RESEARCH DIRECTIONS

Further investigation on phenomenology or other reliable indices for mental contamination is worthwhile. This would help to design measures for mental contamination that are so lacking in the current literature. The availability of such measures would lead to better assessment of and differentiation between mental contamination and contact contamination. Such assessment tools would enormously help to build more comprehensive models about the differential evocation and maintenance of both forms of contamination fear.

Given the relative rarity of findings related to mental contamination, many avenues for further research are open. More research effort should be devoted to validating various distinctive features of mental contamination, so as to facilitate clinical assessment and diagnosis of OCD patients with mental contamination.

Besides, it would be of theoretical importance to look at whether psychological violation without a sexual connotation would induce a feeling of mental contamination. Currently, the experimental manipulation used to induce mental contamination involved violation in sexual contexts. Like Lady Macbeth

in Shakespeare's play, the crime is not sexual but is a murder. Features of mental contamination are still described, but Shakespeare's play is a fiction and not a scientific, empirical fact. Nonetheless, it would be interesting to test whether Shakespeare's frictional imagination concurs with empirical evidence. Does murder represent another form of physical and psychological violation, as well as a violation of the ethics/morality of divinity?

Furthermore, in the dirty kiss paradigm, the focus is mainly on the victims of the physical and psychological violation. There are relatively fewer studies on the perpetrators until recently. Rachman (2010) explores whether feelings of mental contamination can be aroused in some "perpetrators" of non-consensual acts involving betrayal. The perpetrators betraying trust of his friends reported increased feeling of dirtiness, urge to wash, feeling of shame and guilt. Lady Macbeth in Shakespeare's play is also the perpetrator, the murderer. It would be of interest to see whether victims and perpetrators develop into different variants of mental contamination (e.g. perpetrators might suffer from self contamination and victims might develop mental pollution). Also mentioned in the earlier session, it would be worthwhile to explore parallel scenarios that can induce feeling of mental contamination in male participants.

Last but not least, since mental contamination has been commonly seen

in patients with OCD, an interesting direction for research would be to look at the relationship between mental contamination and cognitive variables that are found to be important in the pathogenesis of OCD. For example, whether individual with moral thought action fusion (Moral TAF) or inflated responsibility would be more vulnerable to development of mental contamination. These latter two constructs also have obvious moral overtones. Understanding these connections will certainly benefit development of disorder-specific theory and intervention.

4.7 CLINICAL IMPLICATIONS

First, the fact that a non-consensual kiss induces mental contamination in a non-clinical sample shows that mental contamination is an understandable or explainable psychological response to unpleasant events. This information is important in psycho-education for patients suffering from disorders involving mental contamination. The fact that their symptomatology has an understandable and explainable origin helps the patients enormously in regaining their sense of hope about themselves. They understand that there are reasons for their feeling of dirtiness. Also, when the origin of mental contamination is identified, there is more hope of coming up with an effective intervention.

Second, our theoretical speculation suggests that the origin of mental contamination hinges upon an individual's morality, ethics of divinity. This is a clinically important reminder because mental health professionals tend to assess clinical symptoms without looking deeply into each individual's prior values or belief systems related to morality. Awareness of their impact on the clinical symptoms helps the clinicians to engage the patients and facilitate the understanding of each individual's illness model.

Third, the results on the independence between mental contamination and contact contamination lend important implications on how clinicians may communicate with OCD patients especially in cases where no physical contact with a contaminant is present. Given that patients often find it hard to localize the areas of contamination, helping patients understand that contamination fear may arise without a physical contaminant makes them feel less “strange” or more understandable about their own experience. Rather than focusing on looking for substances that contaminate, our results highlight the importance of eliciting therapeutic discussions on possible psychological processes (e.g. thoughts, appraisals, violation, and morality) that produce the mental contamination for the individual patients.

Fourth, the fact that sense of violation and betrayal can change the perception of a previously welcoming event (i.e., a consensual kiss) is clinically important. Clinicians should try to assess the modifiability of this sense of violation and betrayal so that the patients can be helped to modify them or accept and live with them.

4.8 CONCLUDING COMMENTS

In all, the current study aims at expanding the understanding of the clinical phenomenon of mental contamination. First, the dirty kiss experiment is independently replicated in a population other than the Westerners, i.e., Chinese in this study. The results show that mental contamination can be evoked by a non-consensual kiss.

Second, contact contamination and mental contamination are found to be separable. The former is elicited by the dirty presentation of the man, while the latter by a non-consensual kiss. The two variables do not interact, suggesting that each form of contamination has its own origin which does not affect the other. This underscores the independence of the two forms of contamination.

Third, besides a non-consensual kiss, a form of psychological violation, betrayal, is shown to evoke mental contamination, despite a consensual kiss, which previously has no impact on the participants, before the knowledge of the boyfriend's betrayal surfaced. Discussion has been made on the potential link between psychological violation, morality (such as ethics of divinity), and mental contamination. Future research efforts should look at the phenomenon of mental contamination with male and in non-sexual contexts.

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Appendices

Appendix 1: Scripts of Study 1

Control condition: Consensual kiss

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your girlfriend who knows the host. "This is going to be fun, she always builds the best parties". In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall. Around 11 o'clock, you end up alone in the hallway with the guy you met earlier in the beginning. "Hay, I remember you." You are leaning against the wall, and he is standing in front of you, as you both make conversation.

You have never seen him before tonight, and you think he is really cute. You're having a bit of trouble concentrating on the conversation, because you are thinking what it would be like to kiss him.

Then, you realized that although you have never met this guy before, you have heard about him from some of your friends. In fact, on your way to the party tonight, the friend you came with said to you, "There may be a guy here tonight that I hope you meet, apparently he is really nice, a really great guy. He never tries to pick up girls or he picks up lines, or makes up stories, and he never spread out rumors about his experience with girls. He is the type of guy who would go out of his way to help other people, no matter what their race or how old they are, like helping an elderly person cross the street, and carrying grocery home for them. In fact, a friend told that he volunteers at the homeless shelter, and I think he stays at home on the weekend to look after his sick mom. One time my cousin's wallet fall out of his pocket on a bus. He was sitting next to this guy, who returned it to my cousin with the money still

inside. He just sounds like a wonderful person.

As he is talking to you, you notice he appears normal and clean cut. And you think about how he seems to have a strong moral conscience that he never lies, cheats or steals and genuinely cares about people. Gradually, you and he move closer to each other, you start to get the feeling he would like to kiss you too. There is a brief pause in the conversation, and he leans towards you and begins to kiss you on the mouth. You return his kiss, and your bodies pressed together. As he holds you in his arm, your back presses against the wall. It feels nice to have his mouths against yours, and you notice what a good kisser he is. This is exactly the kiss you want to share with him. You continue to kiss until someone else comes down the hallway and he stops kissing you. Before he walks away, he turns to you and says "That was nice, come find me later."

Please take off the headphone and complete the questionnaire inside the envelope.

Control condition: Consensual kiss (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣···呼氣···當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你盡量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就係情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你喺同另一個朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。大約十一點嘅時候，你自己一個人喺走廊，遇番一個啱啱認識嘅男子。“喂，你記唔記得我呀？我哋頭先見過嘅呢。”你挨住走廊”部”牆，佢企喺你面前同你傾起計嚟。

雖然你今晚先第一次見佢，不過你真係覺得佢好有型。你同佢傾計嘅時候有啲心不在焉，因為你一路幻想緊錫佢嘅時候會有乜嘢感覺。

嗰一刻，你忽然間醒起，雖然你唔識呢個人，但係都有聽過朋友講起佢·事實上你今日搭車嚟嘅時候，你朋友同你講：「今晚我想介紹個男仔朋友俾你識，佢個人好好，真係無得頂~佢唔會好花 fit 周圍撩女仔，又唔會作古仔講到自己點受女仔歡迎。無論年紀幾大，或者同佢熟唔熟，佢都會盡力幫你，好似佢會讓位俾老人家坐，得閒又會去醫院做下義工，聽聞佢對屋企人都幾好，仲好孝順添。佢睇嚟就一個咁好既人。」

你一路同佢傾計，覺得佢望落好企理·你唸起佢個人好正直，唔會呃呃 t u m t u m，仲會關心身邊嘅人·不知不覺間，你同佢之間嘅距離越嚟越近。你開始意會到佢都好似想錫你。你同佢都靜左落嚟，大家都有出聲。跟住佢慢慢挨埋嚟，錫落你個嘴度，之後你地大家熱吻起嚟·你同佢嘅身體慢慢咁貼埋一齊。當佢攞實你，你背脊貼住部牆。大家嘴唇緊貼嘅感覺好好，佢對你亦都好溫柔。你地一路錫落去，直到有人喺走廊嘅另一邊行過嚟，你地先至停低落嚟。佢行開個陣同你講：「我地陣間再見！」

請你將耳筒放低，並填寫信封入面嘅問卷。

Experimental Condition: Non consensual kiss

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your girlfriend who knows the host. "This is going to be fun, she always builds the best parties". In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall. Around 11 o'clock, you end up alone in the hallway with the guy you met earlier in the beginning. "Hay, I remember you." You are leaning against the wall, and he is standing in front of you, as you both make conversation.

You have never seen him before tonight, and you think he is really cute, but you are not interested in him sexually.

Then, you realized that although you have never met this guy before, you have heard about him from some of your friends. In fact, on your way to the party tonight, the friend you came with said to you, "There may be a guy here tonight that I hope you don't meet. Apparently, he is really wired and a major jerk. He tries to pick up every girl he sees ?as he pick up lines and makes up stories, and he spread rumors that he had slept with girls that he has not even met. He is the type of guy who would go out of his way to hurt other people, especially people of a different race. I heard a few times that he tries to take advantage of girls when they were drunk, and I think he has been recently spending a lot of time around under-aged girls. One time, my cousin's wallet fell out of his pocket on the bus, he was sitting next to this guy, who returned it to my cousin but stole the money out first. He just sounds like a horrible

person.”

As he is talking to you, you notice he appears normal and clean cut. But you think about how he doesn't seem to have a moral conscience. He lies, cheats or steals without any remorse and he doesn't care about other people. Gradually, he moves closer to you, you get the feeling he would like to kiss you. You are not interested in him sexually, so you begin to walk away. But he grabs you and begins to kiss you on the mouth. You try to push him away and are unable to, and he presses his body against yours. As he restrains you with his hands and arms, your back presses against the wall. You feel his tongue presses against your tongue, and move to the back corners of your mouth. You do not want this kiss to happen. He continues to kiss you aggressively but you cannot push him off you. Eventually, someone else comes down the hallway and he stops forcefully kissing you and releases you from his grip. Before he walks away, he turns to you and says “That was nice, I'm going to find you later.”

Please take off the headphone and complete the questionnaire inside the envelope.

Experimental Condition: Non consensual kiss (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣· · ·呼氣· · ·當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你儘量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就係情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你喺同另一個朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。大約十一點嘅時候，你自己一個人喺走廊，遇番一個啱啱認識嘅男子。“喂，你記唔記得我呀？我哋頭先見過嘅呢。”你挨住走廊”部”牆，佢企喺你面前同你傾起計嚟。

雖然你今晚先第一次見佢，不過你真係覺得佢好有型。你同佢傾計嘅時候有啲心不在焉，可惜，佢並唔係你喜歡嗰類型。

嗰一刻，你忽然間醒起，雖然你唔識呢個人，但係都有聽過朋友講起佢·事實上你今日搭車嚟嘅時候，你朋友同你講：「我識有個好怪嘅男子，佢今晚都會嚟，我真係希望你唔好遇到佢，佢見親女仔就撩，又會作古仔講到自己點受女仔歡迎，有啲女仔佢連見都未見過，佢竟然周圍同人講佢地有過親密關係。佢又會成日整蠱人地，尤其係一啲睇落好蝦嘅人，好似小朋友同老人家咁。我仲聽過佢會襯嘅女仔飲醉酒嘅佔佢地便宜，近排佢仲成日群埋班妹妹仔。佢睇嚟真係一個好衰既人」

佢一路同你傾計，佢望落好企理·不過你唸起呢個人唔係咁正直，似乎會講大話，鍾意周圍呢呢 t u m t u m，又唔會去關心身邊嘅人。不知不覺間，你同佢之間嘅距離越嚟越近。你意會到佢好似都想錫你。但係你根本對佢無興趣，你想走開。佢即刻捉住你，仲錫落你個嘴度。你嘗試推開佢，但係根本推唔開。佢成個人「澤」落你身度·雙手用力捉住你，推你埋堵牆度。你仲感覺到佢將條脷一路伸入你口入面，壓住你條脷。你好唔想呢件事咁樣發生。佢一路夾硬錫你，你又一直推唔開佢。直到有人喺走廊嘅另一邊行過嚟，佢先至停低落嚟放開你。佢行開個陣仲同你講：「陣間我會再搵你！」

請你將耳筒放低，並填寫信封入面嘅問卷。

Appendix 2: Scripts of Study 2

Condition CC: Consensual kiss with a physically clean man

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your girlfriend who knows the host. "This is going to be fun, she always builds the best parties" In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall. Around 11 o'clock, you end up alone in the hallway with the guy you met earlier in the beginning. "Hay, I remember you." You are leaning against the wall, and he is standing in front of you, as you both make conversation.

You have never seen him before tonight, and you think he is really cute. You're having a bit of trouble concentrating on the conversation, because you are thinking what it would be like to kiss him.

As he is talking to you, you notice he appears normal and charming. His hair appears well groomed and stylish. He appears at ease and humorous that you cannot help smiling back to him.

Gradually, you and he move closer to each other, so close that you can feel his breath and smell his cologne. He runs his fingers through your hair and looks into your eyes. You start to get the feeling he would like to kiss you too. There is a brief pause in conversation, and he leans towards you and begins to kiss you on the mouth. You return his kiss, and your bodies pressed together. As he holds you in his arm, your back presses against the wall. You feel his

body warmth and feel his big warm hand caressing on your waist. His face feels clean against your skin. You feel his tongue in your mouth. You continue to kiss until someone else comes down the hallway and he stops kissing you.

Please take off the headphone and complete the questionnaire inside the envelope.

Condition CC: Consensual kiss with a physically clean man (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣···呼氣···當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你儘量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就係情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你係同另一個朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。大約十一點嘅時候，你自己一個人喺走廊，遇番一個啱啱認識嘅男子。“喂，你記唔記得我呀？我哋頭先見過嘅呢。”你挨住走廊”部”牆，佢企喺你面前同你傾起計嚟。

雖然你今晚先第一次見佢，不過你真係覺得佢好有型。你一路同佢傾計，但係你根本心不在焉。因為你一路想入非非，幻想緊佢錫你嘅時候嘅情況。你一路同佢傾計，你覺佢睇落好正經同有好靚仔。佢嘅頭好企理同時款。一身打扮整齊入時。佢個人好從容同有幽默感，我一路同佢傾計，好多時候都忍唔住笑。

不知不覺間，你同佢之間距離越嚟越近。你可以感受到佢嘅呼吸，同一陣濃烈的古龍水味。佢一路用手撥你啲頭髮，雙眼一路望住你。你意會到佢都對你有感覺，而且佢好似想錫你。佢同你都靜左落嚟，大家都有出聲。佢慢慢挨埋嚟，錫埋你個嘴度。你有迴避，你接受佢嘅熱吻，讓大家嘅身體貼埋一齊。當佢用力地抱實你，你背脊貼住部牆。你感受到佢嘅體溫，佢用隻又大又溫暖嘅手攬住你條腰。佢塊面同你貼住嘅時候，你感覺到佢嘅皮膚好清爽乾淨。你感覺到佢將條利伸入你口中。你們繼續依偎在一起擁吻，一直到他留意到有人在走廊的另一面走過嚟，佢先至停低落嚟。

請你將耳筒放低，並填寫信封內嘅問卷。

Condition CD: Consensual kiss with a physically dirty man

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your girlfriend who knows the host. "This is going to be fun, she always builds the best parties" In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall. Around 11 o'clock, you end up alone in the hallway with the guy you met earlier in the beginning. "Hay, I remember you." You are leaning against the wall, and he is standing in front of you, as you both make conversation.

You have never seen him before tonight, and you think he is really cute. You're having a bit of trouble concentrating on the conversation, because you are thinking what it would be like to kiss him.

As he is talking to you, he impresses you to be care free and sincere. His hair appears frizzy and unkempt. His clothes is shabby and seems to need washing/ seem have not been washed for a while. He appears at ease and humorous, that you cannot help smiling back to him.

Gradually, you and he move closer to each other, so close that you can feel his breath and smell the odor of stale cigarette. He runs his fingers through your hair and looks into your eyes. You start to get the feeling he would like to kiss you too. There is a brief pause in conversation, and he leans towards you and begins to kiss you on the mouth. You return his kiss, and your bodies pressed together. As he holds you in his arm, your back presses against the wall. You feel his body heat and feel his big sweaty hand caressing on your

waist. Although his face feels greasy against your skin. You then feel his tongue in your mouth and you notice his mouth taste of sour beer and his tongue feel coated. You continue to kiss until someone else comes down the hallway and he stops kissing you.

Please take off the headphone and complete the questionnaire inside the envelope.

Condition CD: Consensual kiss with a physically dirty man (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣···呼氣···當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你儘量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就係情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你喺同另一個朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。大約十一點嘅時候，你自己一個人喺走廊，遇番一個啱啱認識嘅男子。“喂，你記唔記得我呀？我哋頭先見過嘅呢。”你挨住走廊”部”牆，佢企喺你面前同你傾起計嚟。

雖然你今晚先第一次見佢，不過你真係覺得佢好有型。你一路同佢傾計，但係你根本心不在焉。因為你一路想入非非，幻想緊佢錫你嘅時候嘅情況。你一路同佢傾計，你覺佢係一個不拘小節，唔做作嘅人。佢嘅頭髮鬆曲蓬鬆而凌亂。一身打扮 *ler fer*，可以話係有啲殘舊同污糟。佢個人好從容同有幽默感，我一路同佢傾計，好多時候都忍唔住笑。

不知不覺間，你同佢之間距離越嚟越近。你可以感受到佢嘅呼吸，同一陣濃烈嘅煙味。佢一路用手撥你嘅頭髮，雙眼一路望住你。你意會到佢都對你有感覺，而且佢好似想錫你。佢同你都靜左落嚟，大家都冇出聲。佢慢慢挨埋嚟，錫埋你個嘴度。你有迴避，你接受佢嘅熱吻，讓大家嘅身體貼埋一齊。當佢用力地抱實你，你背脊貼住部牆。你感受到佢成個人好熱，佢用隻又大又濕嘅手攬住你條腰。佢塊面同你貼住嘅時候，佢有好多面油，你仲拈到佢面上嘅汗。你感覺到佢將條利伸入你口中，你留意到佢口入面嘅酸啤酒，同埋食物嘅味道。你們繼續依偎在一起擁吻，一直到他留意到有人在走廊的另一面走過嚟，佢先至停低落嚟。

請你將耳筒放低，並填寫信封內嘅問卷。

Condition NCC: Non-consensual kiss with a physically clean man

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your girlfriend who knows the host. "This is going to be fun, she always builds the best parties." In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall. Around 11 o'clock, you end up alone in the hallway with the guy you met earlier in the beginning. "Hay, I remember you." You are leaning against the wall, and he is standing in front of you, as you both make conversation.

You have never seen him before tonight, and you think he is really cute, but you are not interested in him sexually.

As he is talking to you, you notice he appears normal and charming. His hair appears well groomed and stylish. He appears at ease and humorous that you cannot help smiling back to him.

Gradually, you and he move closer to each other, so close that you can feel his breath and smell his cologne. He runs his fingers through your hair and looks into your eyes. You start to get the feeling he would like to kiss you. You are not interested in him sexually, so you begin to walk away. But he grabs you and begins to kiss you on your mouth. You try to push him away and are unable to, and he presses his body against you. As he restrains you with his hands and arms, your back presses against the wall. You feel his body warmth and feel his big warm hand caressing on your waist. His face feels clean against your skin. You feel his tongue presses against your tongue,

and move to the back corners of your mouth. You do not want this kiss to happen. He continues to kiss you aggressively but you cannot push him off you. Eventually, someone else comes down the hallway and he stops forcefully kissing you and releases you from his grip.

Please take off the headphone and complete the questionnaire inside the envelope.

Condition NCC: Non-consensual kiss with a physically clean man (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣···呼氣···當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你盡量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就係情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你喺同另一個朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。大約十一點嘅時候，你自己一個人喺走廊，遇番一個啱啱認識嘅男子。“喂，你記唔記得我呀？我哋頭先見過嘅呢。”你挨住走廊”部”牆，佢企喺你面前同你傾起計嚟。

雖然你今晚先第一次見佢，你真係覺得佢好有型。不過，你對佢冇興趣／佢唔係你喜歡嘅類型。你一路同佢傾計，你覺佢看來正經同有魅力。佢嘅頭髮好企理同時髦。一身打扮整齊入時。佢個人好從容同有幽默感，我一路同佢傾計，好多時候都忍唔住笑。

不知不覺間，你同佢之間距離越嚟越近。你可以感受到佢嘅呼吸，同一陣濃烈的古龍水味。佢一路用手撥你啲頭髮，雙眼一路望住你。你意會到佢都對你有感覺，而且佢好似想錫你。你根本對佢冇嗰種感覺，所以你即刻想行開。但係佢好大力咁捉住你，然後夾硬錫落你個嘴度。你嚟試推開佢，但係你推唔開佢。佢用力推你埋牆。你感受到佢嘅體溫，佢用隻又大又溫暖嘅手攬住你條腰。。佢塊面同你貼住嘅時候，你感覺到佢嘅皮膚好清爽乾淨。你仲感覺到佢將條利伸入你口入面。你好唔想呢件事咁樣發生。佢一路夾硬錫你個嘴，你又一直推唔開佢。最後，佢留意到有人在走廊的另一面行過黎，佢先至停低落嚟放開你。

Condition NCD: Non-consensual kiss with a physically dirty man

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your girlfriend who knows the host. "This is going to be fun, she always builds the best parties" In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall. Around 11 o'clock, you end up alone in the hallway with the guy you met earlier in the beginning. "Hay, I remember you." You are leaning against the wall, and he is standing in front of you, as you both make conversation.

You have never seen him before tonight, and you think he is really cute, but you are not interested in him sexually.

As he is talking to you, he impresses you to be care free and sincere. His hair appears frizzy and unkempt. His clothes is shabby and seems to need washing/ seem have not been washed for a while. He appears at ease and humorous, that you cannot help smiling back to him.

Gradually, you and he move closer to each other, so close that you can feel his breath and smell the odor of stale cigarette. He runs his fingers through your hair and looks into your eyes. You start to get the feeling he would like to kiss you. You are not interested in him sexually, so you begin to walk away. But he grabs you and begin to kiss you on your mouth. You try to push him away and are unable to, and he presses his body against you. As he restrains you with his hands and arms, your back presses against the wall. You feel his body heat and feel his big sweaty hand caressing on your waist. His face feels greasy against your skin. You feel his tongue presses against your

tongue, and move to the back corners of your mouth and you notice his mouth taste of sour beer and his tongue feel coated. You do not want this kiss to happen. He continues to kiss you aggressively but you cannot push him off you. Eventually, someone else comes down the hallway and he stops forcefully kissing you and releases you from his grip.

Please take off the headphone and complete the questionnaire inside the envelope.

Condition NCD: Non-consensual kiss with a physically dirty man (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣···呼氣···當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你盡量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就係情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你喺同另一個朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。大約十一點嘅時候，你自己一個人喺走廊，遇番一個啱啱認識嘅男子。“喂，你記唔記得我呀？我哋頭先見過嘅呢。”你挨住走廊”部”牆，佢企喺你面前同你傾起計嚟。

雖然你今晚先第一次見佢，你真係覺得佢好有型。不過，你對佢冇興趣／佢唔係你喜歡嘅類型。你一路同佢傾計，你覺佢係一個不拘小節，唔做作嘅人。佢嘅頭髮鬆曲蓬鬆而凌亂。一身打扮 *ler fer*，可以話係有啲殘舊同污糟。佢個人好從容同有幽默感，我一路同佢傾計，好多時候都忍唔住笑。

不知不覺間，你同佢之間距離越嚟越近。你可以感受到佢嘅呼吸，同一陣濃烈的香煙焦油味。佢一路用手撥你啲頭髮，雙眼一路望住你。你意會到佢都對你有感覺，而且佢好似想錫你。你根本對佢冇啲種感覺，所以你即刻想行開。但係佢好大力咁捉住你，然後夾硬錫落你個嘴度。你嘗試推開佢，但係你推唔開佢。佢用力推你埋牆。你感受到佢成個人好熱，佢用隻又大又濕嘅手攬住你條腰。佢塊面同你貼住嘅時候，佢有好多面油，你仲拈到佢面上嘅汗。你感覺到佢將條利伸入你口中，你留意到佢口入面嘅酸啤酒，同埋食物嘅味道。你好唔想呢件事咁樣發生。佢一路夾硬錫你個嘴，你又一直推唔開佢。最後，佢留意到有人在走廊的另一面行過黎，佢先至停低落嚟放開你。

請你將耳筒放低，並填寫信封內嘅問卷。

Appendix 3: Scripts of Study 3

Control condition: Non-betrayal

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your boyfriend who knows the host. "This is going to be fun, she always builds the best parties". In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall.

Around 11 o'clock, you are having a headache and would like to leave the party early. Nevertheless, you can see that your boyfriend is having great fun with his friends and you don't want to interrupt him. Therefore, you decide to go by yourself and he walks you to leave. While in the hallway, your boyfriend holds you in his embrace passionately, and he leans towards you and begins to kiss you on the mouth. You return his kiss, and your bodies pressed together. As he holds you in his arm, your back presses against the wall. It feels nice to have his mouths against yours, and you feel his tongue in your mouth. You continue to kiss until someone else comes down the hallway and he stops kissing you. Before he walks away, he turns to you and says "Have a good sleep and I will call you tomorrow, Sweet dream."

----- Baseline Assessment-----

On your way back, you want to send an SMS to your boyfriend, but then cannot find your mobile phone. You are not sure whether you have leave your mobile at the party, thus, you walk back to the party.

On your way to dance hall, you saw two persons silhouetted on the wall round

the corner. You soon realize that there are two people round the corner kissing each other. Spontaneously, you slow down your pace and are thinking whether you should continue to approach or back away. It was dark over there; you are standing away about ten feet from them.

But then, you find the back of the guy appear familiar to you, and you immediately realize that it is your boyfriend. He cannot see you as he stands facing back to you, but you can see the girl he is holding in his arm. The girl is standing against the wall and has her arm round the guy's neck. The girl looked petty and appeared drunk. She is resting her head on his shoulder and keeps giggling. Your boyfriend is holding the girl tightly in his embrace and is caressing the girl's body greedily. The music is loud and you cannot hear what they are talking about. They seem to be kissing each other passionately and did not want to stop. Time seems to be frozen. You recall the kiss you have with him and ruminating whether he had put his tongue into her mouth like he did to you.

You hide yourself at a corner, when they suddenly turn around, and you see your boyfriend leaving the party venue with the girl in his arm.

Please take off the headphone and complete the questionnaire inside the envelope.

Control condition: Non-betrayal (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣···呼氣···當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你盡量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就喺情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你喺同男朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。

大約十一點嘅時候，你覺得好頭痛，唸住早啲走。但係你見你男朋友同佢啲朋友玩得好開心，又唔想掃佢慶。所以你話佢知你自己走先，佢於是送你離開派對會場。你同佢行到走廊，佢攬住咗你，慢慢挨埋嚟，錫埋你個嘴度。你接受佢嘅熱吻，大家嘅身體貼埋一齊。當佢用力地抱實你，你背脊貼住部牆。大家嘴唇緊貼嘅感覺好好，佢對你亦都好溫柔。你感覺到佢將條利伸入你口中。你地一路錫落去，直到有人喺走廊嘅另一邊行過嚟，你地先至停低落嚟。佢行開個陣同你講：「你早啲休息，我聽日再打俾你！晚安！」

----- Baseline Assessment -----

係番屋企途中，你想打個短訊俾男朋友，但係你搵唔到你個電話·你唔知係咪漏咗係會場度，唯有沿路行番去搵·

你就快行到會場嘅時候，你見到有兩個黑影係角落頭，你好快意識到有對男女“呢”埋係度 kiss·好自然地，你放慢咗腳步，唸緊自己應該繼續行，定係兜另便行過去·現場周圍都幾黑，你距離對男女大概只有十尺遠左右·

你見到嗰個男子嘅背影很面善，你即刻知道個背影係你男朋友·佢背住你企，所以見唔到你·不過，你就好清楚見到佢攬住咗個女仔·個女仔挨住部牆對住你男朋友，雙手“橋”住你男友條頸，個頭挨住佢膊頭，望住佢笑得好開心·你男朋友攬得個女仔好實，雙手仲不停係對方身上游嚟游去·現場嘅音樂好大聲，你完全聽唔到佢地講“mud”·你淨係見佢兩個好似好 e n j o y，錫到唔願停落嚟·嗰

一刻，你唸番起你男朋友錫你嘅情景，仲一路唸緊佢會唔會好似錫你咁伸埋條脷入人地口裡面。

你見佢地轉身想走，離開會場。你即刻“呢”埋一邊。佢地行近你，你先發現原來嗰個唔係你男朋友，你即刻鬆咗口氣。

請你將耳筒放低，並填寫信封內嘅問卷。

Experimental Condition: Betrayal

Please take a moment to make yourself comfortable in your chair, close your eyes, relax, and take a few slow deep breaths. Slowly breathe in and out. As you exhale, allow yourself to become more and more relaxed. As I read the scenario to you, try to imagine it as clearly and in as much detail as you are able to. I will read slowly so that you have time to fully picture it in your mind. Try to imagine that you are the woman in the scenario and that the events I am describing are happening right now. Try not to picture yourself in the scene, instead, try to imagine you are seeing it through your own eyes.

You are at a party (party sound accompanies). It is a big party, and there are at least 100 people there including some of your friends from school. You've come with your boyfriend who knows the host. "This is going to be fun, she always builds the best parties". In fact, you are having fun. The music is pretty loud and some people are dancing. It's not too hot/ cold, and some people are drinking/ chatting/ smoking outside the dance hall.

Around 11 o'clock, you are having a headache and would like to leave the party early. Nevertheless, you can see that your boyfriend is having great fun with his friends and you don't want to interrupt him. Therefore, you decide to go by yourself and he walks you to leave. While in the hallway, your boyfriend holds you in his embrace passionately, and he leans towards you and begins to kiss you on the mouth. You return his kiss, and your bodies pressed together. As he holds you in his arm, your back presses against the wall. It feels nice to have his mouths against yours, and you feel his tongue in your mouth. You continue to kiss until someone else comes down the hallway and he stops kissing you. Before he walks away, he turns to you and says "Have a good sleep and I will call you tomorrow, Sweet dream."

----- Baseline Assessment-----

On your way back, you want to send an SMS to your boyfriend, but then cannot find your mobile phone. You are not sure whether you have leave your mobile at the party, thus, you walk back to the party.

On your way to dance hall, you saw two persons silhouetted on the wall round the corner. You soon realize that there are two people round the corner

kissing each other. Spontaneously, you slow down your pace and are thinking whether you should continue to approach or back away. It was dark over there; you are standing away about ten feet from them.

But then, you find the back of the guy appear familiar to you, and you immediately realize that it is your boyfriend. He cannot see you as he stands facing back to you, but you can see the girl he is holding in his arm. The girl is standing against the wall and has her arm round the guy's neck. The girl looked petty and appeared drunk. She is resting her head on his shoulder and keeps giggling. Your boyfriend is holding the girl tightly in his embrace and is caressing the girl's body greedily. The music is loud and you cannot hear what they are talking about. They seem to be kissing each other passionately and did not want to stop. Time seems to be frozen. You recall the kiss you have with him and ruminating whether he had put his tongue into her mouth like he did to you.

You hide yourself at a corner, when they suddenly turn around, and you see your boyfriend leaving the party venue with the girl in his arm.

Please take off the headphone and complete the questionnaire inside the envelope.

Experimental Condition: Betrayal (Chinese)

請你俾自己舒服咁坐喺座位上面，咪埋你雙眼，等自己放鬆落嚟，然後慢慢做幾個深呼吸·輕鬆咁吸氣···呼氣···當你呼氣嘅時候，等自己感覺到越來越放鬆。

當我形容以下呢個情景嘅時候，請你盡量仔細咁去想像，令呢個情景清晰咁浮現出來。我會慢慢咁描述，俾你有充足嘅時間去想像呢個情景。請你嘗試去想像你就係情節中嘅女主角，而我所描述嘅事情而家正在發生。

你而家處身喺一個派對當中·呢一個聚會有好多人，在場大概有一百人，當中包括一啲你認識嘅朋友·你喺同男朋友約埋一齊嚟嘅·“今晚一定好開心，上次我哋都玩得好盡興。”事實上，你都覺得好興奮。現場嘅音樂好大聲，有啲人喺度跳舞。會場外面嘅溫度幾舒服，有部份人喺嗰度一邊食煙飲酒，一邊傾計講笑。

大約十一點嘅時候，你覺得好頭痛，唸住早啲走。但係你見你男朋友同佢啲朋友玩得好開心，又唔想掃佢慶。所以你話佢知你自己走先，佢於是送你離開派對會場。你同佢行到走廊，佢攞住咗你，慢慢挨埋嚟，錫埋你個嘴度。你接受佢嘅熱吻，大家嘅身體貼埋一齊。當佢用力地抱實你，你背脊貼住部牆。大家嘴唇緊貼嘅感覺好好，佢對你亦都好溫柔。你感覺到佢將條利伸入你口中。你地一路錫落去，直到有人喺走廊嘅另一邊行過嚟，你地先至停低落嚟。佢行開個陣同你講：「你早啲休息，我聽日再打俾你！晚安！」

----- **Baseline Assessment** -----

係番屋企途中，你想打個短訊俾男朋友，但係你搵唔到你個電話·你唔知係咪漏咗係會場度，唯有沿路行番去搵·你就快行到會場嘅時候，你見到有兩個黑影係角落頭，你好快意識到有對男女“呢”埋係度 kiss·好自然地，你放慢咗腳步，唸緊自己應該繼續行，定係兜兜便行過去·現場周圍都幾黑，你距離對男女大概只有十尺遠左右·

你見到嗰個男子嘅背影很面善，你即刻知道個背影係你男朋友·佢背住你企，所以見唔到你·不過，你就好清楚見到佢攞住咗個女仔·個女仔挨住部牆對住你男朋友，雙手“橋”住你男友條頸，個頭挨住佢膊頭，望住佢笑得好開心·你男朋友攞得個女仔好實，雙手仲不停係對方身上游嚟游去·現場嘅音樂好大聲，你完全聽唔到佢地講“mud”·你淨係見佢兩個好似好 e n j o y，錫到唔願停落嚟·嗰一刻，你唸番起你男朋友錫你嘅情景，仲一路唸緊佢會唔會好似錫你咁伸埋條脷

入人地口裡面。

你見佢地轉身想走，離開會場。你即刻“呢”埋一邊。你見到你男朋友好開心咁攬住個女仔離開派對現場。

請你將耳筒放低，並填寫信封內嘅問卷。

Appendix 4: Consent form

Research Participant's Consent Form

The research that you will be participating in today is part of a Chinese University of Hong Kong, Department of Psychology project conducted by Professor Patrick Leung and Ms. Amy Kwok

This study examines woman's responses to other people's behaviour at a party. In this study, you will be asked to complete a brief questionnaire. You will then listen to a Chinese audio recording describing a situation where undergraduate students are at a party. You will be asked to imagine yourself as vividly as possible as the woman described in the scenario. Some of the events described at the party may or may not make you feel uncomfortable. Such discomforts, however, should be no greater than what we experience in everyday life. If you experience discomfort you can withdraw from participation at any time.

At the end of the study, you will be asked your thoughts about the behaviour of individuals at this party. The entire session should last about 30 minutes, including a few short breaks in between tasks.

Your signature on this form indicates that your participation in our project is voluntary. All information obtained in the course of this experiment will be used for research purposes only and personal information be protected and kept confidential. We will be happy to explain the project in more detail once you have finished. If you have further questions, please address them to the experimenter (Amy Kwok: kwok_amy@yahoo.com) or call Professor Patrick Leung at 2609-6502.

I _____ (_____) understand the procedures described above and agree to participate in this study.

Signature of Participant

Date

Appendix 5: Vancouver Obsessive Compulsive Inventory (VOCI) – Contact Contamination Subscale

Please rate each statement by putting a circle around the number that best describes how much the statement is true of you. Please answer every item, without spending too much time on any particular item.

請細閱以下句子，想想各句子是否能夠形容你的情況，請圈出你認為下列句子有幾能夠貼切形容你的情況。請回答所有問題，並無需在個別題目上花太多的時間。

How much is each of the following statements true of you?	Not at all 完全不能	A little 少許貼切	Some 有點貼切	Much 頗為貼切	Very Much 非常貼切
以下各句子有幾能夠貼切地形容你的情況？					
I feel very dirty after touching money. 接觸錢幣後，我會感到骯髒。	0	1	2	3	4
I find it very difficult to touch garbage or garbage bins. 要我觸摸垃圾或垃圾箱是十分困難的。	0	1	2	3	4
I am very afraid of having even slight contact with bodily secretions (blood, urine, sweat, etc). 我很害怕與身體分泌物（血液，尿液和汗水等）有任何輕微的接觸。	0	1	2	3	4
I use an excessive amount of disinfectants to keep my home or myself safe from germs. 我使用過量的消毒藥水去保障我的家居或自己免受細菌沾染。	0	1	2	3	4
I am excessively concerned about germs and disease. 我過度關注細菌和疾病。	0	1	2	3	4
I feel very contaminated if I touch an animal. 當我接觸完動物後，我感到十分骯髒。	0	1	2	3	4
I avoid using public telephones because of possible contamination. 由於有可能受到污染，我避免使用公眾電話。	0	1	2	3	4
Touching the bottom of my shoes makes me very anxious. 觸摸到自己的鞋底會令我感到十分憂慮。	0	1	2	3	4
I often feel dirty inside my body. 我經常會覺得身體裡面有污穢的感覺。	0	1	2	3	4
One of my major problems is that I am excessively concerned about cleanliness. 我其中一個主要問題是過份關注清潔。	0	1	2	3	4
I often experience upsetting and unwanted thoughts about illness. 我經常經歷一些擾人和不想有的疾病念頭。	0	1	2	3	4
I am afraid to use even well kept public toilets because I am so concerned about germs. 即使是打理很妥當的公共洗手間，我也害怕使用，因為我太擔心細菌的問題。	0	1	2	3	4

Appendix 6: Vancouver Obsessive Compulsive Inventory (VOCI) – Mental Contamination Scale

Please rate each statement by putting a circle around the number that best describes how much the statement is true of you. Please answer every item, without spending too much time on any particular item.

請細閱以下句子，想想各句子是否能夠形容你的情況，請圈出你認為下列句子有幾能夠貼切形容你的情況。請回答所有問題，並無需在個別題目上花太多的時間。

How much is each of the following statements true of you? 以下各句子有幾能夠貼切地形容你的情況？	Not at all 完全不能	A little 少許貼切	Some 有點貼切	Much 頗為貼切	Very Much 非常貼切
Often I look clean but feel dirty. 很多時候，我看起來清潔但感覺污穢。	0	1	2	3	4
Having an unpleasant image or memory can make me feel dirty inside. 當有不愉快的影像或記憶時，我內心會感到污穢。	0	1	2	3	4
Often I cannot get clean no matter how thoroughly I wash myself. 很多時候，即使我怎樣徹底清潔自己，仍不能感到潔淨。	0	1	2	3	4
If someone says something nasty to me it can make me feel dirty. 若果有人對我說一些厭惡的說話，會令我感到污穢。	0	1	2	3	4
Certain people make me feel dirty or contaminated even without any direct contact. 即使沒有直接的接觸，有些人仍能令我感到污穢或被沾污。	0	1	2	3	4
I often feel dirty under my skin. 我經常在骨子裡也感到污穢。	0	1	2	3	4
Some people look clean, but feel dirty. 有些人看起來清潔，但感覺污穢。	0	1	2	3	4
I often feel dirty or contaminated even though I haven't touched anything dirty. 即使我沒有接觸任何污穢的東西，我仍會經常感到污穢或被沾污。	0	1	2	3	4
Often when I feel dirty or contaminated, I also feel guilty or ashamed. 通常當我感到污穢時，我亦會感到內疚或羞恥。	0	1	2	3	4
I often experience unwanted and upsetting thoughts about dirtiness. 我經常經歷一些不想有和擾人的污穢念頭。	0	1	2	3	4
Some objects look clean, but feel dirty. 有些東西看起來清潔，但感覺污穢。	0	1	2	3	4
I often feel dirty or contaminated without knowing why. 我經常不明所以地感到污穢或被沾污。	0	1	2	3	4
Often when I feel dirty or contaminated, I also feel angry. 通常當我感到污穢時，我亦會感到憤怒。	0	1	2	3	4

Unwanted and repugnant thoughts often make me feel contaminated or dirty. 一些不想有和令人反胃的想法經常會令我感到污穢或被沾污。	0	1	2	3	4
Standing close to certain people makes me feel dirty and/or contaminated. 站在某些人附近會令我感到污穢和／或被沾污。	0	1	2	3	4
I often feel dirty inside my body. 我經常會覺得身體裡面有污穢的感覺。	0	1	2	3	4
If I experience certain unwanted repugnant thoughts, I need to wash myself. 若我有些不想有的和令人反胃的想法，我需要清潔自己。	0	1	2	3	4
Certain people or places that make me feel dirty or contaminated leave everyone else completely unaffected. 那些令我感到污穢或被沾污的人或地方對其他人完全沒有影響。	0	1	2	3	4
The possibility that my head will be filled with worries about contamination makes me very anxious. 當我想到自己的腦海可能充滿被沾污的憂慮時，我感到十分焦慮。	0	1	2	3	4
I often feel the need to cleanse my mind. 我經常感到需要潔淨自己的思想。	0	1	2	3	4

*Should there be any discrepancy between the two version, please refer to the English version. 中英譯本如有分歧，請以英文版本為準。

Appendix 7: Mental Contamination Report

Now that you have imagined yourself in that scenario, please answer the following questions about how you feel at this moment: 剛才你想像自己身處所描述的情景，並請回答以下有關於你此刻感受的問題。

1. On a scale from 1 to 5, rate the extent to which you feel: 請你以一至五去表示你不同情程的情緒反應

	Not at all 完全沒有	Slightly 少許	Fairly 有點	Quite a bit 頗多	Very Much 非常
Distressed (困擾)	1	2	3	4	5
Anxious (焦慮)	1	2	3	4	5
Disgusted-by the man's physical attributes (對該男士的外表感到厭惡)	1	2	3	4	5
Disgusted -by the man's behaviour (對該男士的行為感到厭惡)	1	2	3	4	5
Angry (生氣)	1	2	3	4	5
Violated (被侵犯)	1	2	3	4	5
Ashamed (羞愧)	1	2	3	4	5
Guilty (內疚)	1	2	3	4	5
Betrayed (被出賣)	1	2	3	4	5
Humiliated (被羞辱)	1	2	3	4	5
Afraid (害怕)	1	2	3	4	5
Sad (悲傷)	1	2	3	4	5
Cheap (低級)	1	2	3	4	5
Sleazy (下賤)	1	2	3	4	5
Cheated (被騙)	1	2	3	4	5

2. Do you feel dirty or unclean? Rate the extent to which you feel dirty/unclean (1 to 5) 你會不會感到污穢或不潔？請選出你感到污穢或不潔的程度

Not at all dirty 完全沒有污穢	Slightly dirty 少許污穢	Fairly dirty 有點污穢	Quite dirty 頗污穢	Very Dirty 非常污穢
1	2	3	4	5

(If you choose "Not at all dirty", go directly to question 6)

(如你選擇「完全沒有污穢」，請直接跳到第六題)

3. **If you feel dirty, can you locate this feeling of dirtiness? -- Please check (✓)**

where you feel dirty: 如果你感到污穢，你能否確定這污穢感的位置？請(✓)出你感到污穢的地方

(You can choose more than one option 可選多於一項)

- | | |
|--|---|
| <input type="checkbox"/> Mouth 嘴 | <input type="checkbox"/> Tongue 舌頭 |
| <input type="checkbox"/> Face 面 | <input type="checkbox"/> Hands 手 |
| <input type="checkbox"/> Arms 手臂 | <input type="checkbox"/> Stomach 胃 |
| <input type="checkbox"/> Diffuse (all over) 範圍廣泛(分散) | <input type="checkbox"/> Difficult to locate 難以確定範圍 |
| <input type="checkbox"/> Internal 內心/身體內在 | <input type="checkbox"/> Other 其他_____ |

4. **If you feel dirty, do you have an urge to do anything about this feeling of dirtiness? Please rate each urge on a scale from 1 to 5**

如果你感到污穢，你有沒有衝動用任何方法去改變這感覺？請以一至五去表示你欲使用以下各方法的衝動

	<i>Not at all</i>	<i>Slightly</i>	<i>Fairly</i>	<i>Quite a bit</i>	<i>Very Much</i>
	完全沒有	少許	有點	頗多	非常
Rinse mouth/spit/drink something 漱口/吐口水/飲水	1	2	3	4	5
Brush teeth/use mouthwash 刷牙/用漱口水	1	2	3	4	5
Wash my face 洗面	1	2	3	4	5
Wash my hands 洗手	1	2	3	4	5
Take a shower 洗澡	1	2	3	4	5
Try to think about something else 嘗試想別的事情	1	2	3	4	5
Try hard not to think about it 嘗試別想它	1	2	3	4	5
Try to think some pleasant experience 嘗試想些愉快的經歷	1	2	3	4	5
Think that it's an experiment 心想這只是一個實驗	1	2	3	4	5
Try to think I am not responsible for it 嘗試想這不是自己的責任	1	2	3	4	5
Other (please specify) 其他(請說明:) _____					

5. **For the urges you endorsed in question 4, think about why you want to do this. What do you think might happen if you cannot do this? Check (✓) off the statement(s) that most apply to you:**

在第四題你提到一些你有衝動去做的事情，試想想為何你想這樣做。若你不能這樣做，你認為又會有什麼情況發生？請從以下選出最適用於你的句子。

- I am worried that, when I leave this room, other people will be able to tell that I feel dirty.**
我擔心離開這房間時，別人會知道我感到污穢
- It would make me feel less distressed or anxious if I do this.**
如果我這樣做了，會減少我的困擾和焦慮

- [] **I am worried about spreading this dirtiness to other things or people.**
我擔心會把這種污穢傳給其他人或物件
- [] **It would prevent me from getting sick if I do this.**
這樣做可以令我避免染病
- [] **I cannot think of a reason.**
我想不到什麼原因
- [] **I have another reason (please specify _____)**
我有其他原因 (請說明: _____)

6. **The man who kissed you sipped your drink before the kiss. How likely are you to take another sip of your drink after the kiss?** 親吻你的男子在吻你之前飲用了你那杯飲品·你會否繼續飲用該杯飲品?

Not at all likely 完全不會 1	Slightly likely 少許可能 2	Fairly likely 有點可能 3	Quite likely 頗大可能 4	Very much likely 極大可能 5
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7. **You've been eating some chips at the party. The man who kissed you has also been eating chips out of the same bowl. How likely are you to eat chips from the bowl again?**

你在派對中食薯片·親吻你的男子也從同一盤子中取出薯片進食·你會否繼續從同一盤子中取薯片食?

Not at all likely 完全不會 1	Slightly likely 少許可能 2	Fairly likely 有點可能 3	Quite likely 頗大可能 4	Very much likely 極大可能 5
---------------------------------------	-------------------------------------	-----------------------------------	----------------------------------	--------------------------------------

8. **How inappropriate would you rate the man's behaviour?** 你認為該男子的行為有幾不恰當?

	Not inappropriate 沒有不恰當	Slightly inappropriate 少許不恰當	Fairly inappropriate 有點不恰當	Quite inappropriate 頗為不恰當	Very inappropriate 非常不恰當
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9. **How dirty would you rate the man's physical presentation?** 你認為該男子的外表有多骯髒?

	Not dirty 不骯髒	Slightly dirty 少許骯髒	Fairly dirty 有點骯髒	Quite dirty 頗為骯髒	Very much dirty 非常骯髒
--	-------------------------	-------------------------------	-----------------------------	----------------------------	--------------------------------

10. **How easy was it to imagine the scenario in your mind?** 剛才描述的情景有多容易去想像?

	Not easy 不容易	Slightly easy 少許容易	Fairly easy 有點容易	Quite easy 頗為容易	Very much easy 非常容易
--	------------------------	------------------------------	----------------------------	---------------------------	-------------------------------

11. **How realistic was the imagined scenario?** 剛才描述的情景有多貼近現實?

	Not realistic 不現實	Slightly realistic 少許現實	Fairly realistic 有點現實	Quite realistic 頗為現實	Very much realistic 非常現實
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12. **How clear/vivid was the imagined scenario?** 剛才描述的情景有多清晰/逼真?

	Not clear/vivid 不清晰/逼真	Slightly clear/vivid 少許清晰/逼真	Fairly clear/vivid 有點清晰/逼真	Quite clear/vivid 頗為清晰/逼真	Very much clear/vivid 非常清晰/逼真
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13. Have you ever been to a party like the one described in the tape? (Circle one)

你會否參加過類似剛才聲帶中所形容的派對？（請圈出一個合適的答案）

Never 從不 1	Rarely 很少 2	Sometimes 有時 3	Often 經常 4	Always 時時 5
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- 14. Have you ever experienced a non-consensual sexual encounter, such as a kiss?** Yes No
 你會否經歷過一些不自願發生的親密行為，例如接吻？ 有 沒有
If so, did it occur at a party? Yes No
 如果有，是否在派對發生？ 是 否
- 15. Has a friend of yours ever experienced a non-consensual sexual encounter?** Yes No
 你有沒有朋友曾經歷過一些不自願發生的親密行為？ 有 沒有
If so, did it occur at a party? Yes No
 如果有，是否在派對發生？ 有 沒有
- 16. Have you ever witnessed a non-consensual sexual encounter, such as a kiss?** Yes No
 你會否目擊過一些不自願發生的親密行為，例如接吻？ 有 沒有
If so, did it occur at a party? Yes No
 如果有，是否在派對發生？ 有 沒有

Personal Information 個人資料

17. Which university year are you studying? 就讀級別：Year 1 2 3 4
 年齡 Age: _____

18. Sexual preference: 性取向

Heterosexual 異性戀 **Homosexual** 同性戀 **Bisexual** 雙性戀

19. Did you ever seek help for psychological distress? Yes No
 你會否因心理困擾而尋求幫助？ 有 沒

Appendix 8: Break Behaviour Questionnaire

Break Behaviour Questionnaire

**[After the break – ask participants the following questions. Record all responses
 VERBATIM!]**

在小息過後，請向參與者發問以下的問題，並逐字記錄參與者的回應

1. **Did you have a glass of water?** **YES** **NO**
 你有沒有飲水？ 有 沒有

If YES, Why? →

如有，為什麼？

2. **Did you use the hand wipe?** **YES** **NO**
 你有沒有用濕紙巾？ 有 沒有

If YES, Why? →

如有，為什麼？

3. **Did you go to the washroom?** **YES** **NO**
 你有沒有去洗手間？ 有 沒有

If YES, Did you wash or rinse? **YES** **NO**
 如有，你有沒有洗手或作任何的沖洗？ 有 沒有

If YES, what part(s) of your body did you wash or rinse? And Why?

如有，你清潔或沖洗了身體什麼部份？為什麼？

BODY PART	WHY?
身體部位	為什麼？

4. Did you do anything else to change or eliminate any negative feelings provoked by the scenarios you listened to? [Get details.]

聽完剛才的片段後，你有沒有嘗試用任何方法去改變或消除所引起的負面感覺？（請詳盡記錄細節）

*Should there be any discrepancy between the two version, please refer to the English version.
中英譯本如有分歧，請以英文版本為準。

Appendix 9: Debriefing form

Party Behaviour Study Debriefing Information

The study you just participated in is part of a series of experimental studies examining a phenomenon called mental contamination. Mental contamination is a form of contamination fear, which is present in nearly half of the people who are suffering from obsessive compulsive disorder. Mental contamination, like all contamination fear is a dimensional construct, forming a continuum, instead of a categorical nature.

Previous belief that contamination fear stem from fear of illness or possible harm after physical contact with soiled, poisonous or infectious substance. Nevertheless, it is later discovered that physical contact or dirty substance is not essential to instill fear of pollution. Mental contamination refers to feelings of contamination that develop without physical contact with a contaminant. Mental contamination can be induced by psychological violation or traumatic experience, and its feeling can be revived by recollection of the event. The feelings of dirtiness in mental contamination are obscure and are accompanied by negative emotions. These feelings can lead to avoidance and washing behaviour.

Mental contamination has been documented among victims of sexual assault, some of whom report feeling dirty and desire to wash in response to recollection of the assault. Experimental study is designed to elicit mental contamination, participants are asked to imagine a non-consensual kiss took place in a party. It shows that imagined non consensual kiss can elicit feeling of dirtiness and higher level of distress compared with participants who are asked to imagine a consensual kiss in a party. Besides, imagined non consensual kiss group shows higher level of avoidance and washing behaviours.

The current study is a replication and extension of the dirty kiss experiment which is the first experiment used to study mental contamination. A number of hypotheses are tested in this study. It is hypothesized that feeling of mental contamination can be elicited by listening to an audiotape, in which a non-consensual kiss is described. No physical contact is necessary for mental contamination to be instilled. Moreover, participants reporting elevated level of mental contamination will also tend to report avoidance and neutralization attempt.

If you have any further questions about this project, please feel free to contact me, Amy Kwok (kwok_amy@yahoo.com) or my research advisor, Professor Patrick Leung (2609-6502, pleung@cuhk.edu.hk). Finally, if you would like to receive a summary of the results of this study, please tell me your address and I will mail you a summary at the conclusion of the experiment.

Further Readings:

Fairbrother, N., Newth, S., & Rachman, S. (2005). Mental pollution: Feelings of dirtiness without physical contact. *Behaviour Research and Therapy*, 43(1), 121-130.

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Rachman, S. (2004). Fear of contamination. *Behaviour Research and Therapy*, 42(11), 1227-1255.

Rachman, S. (2006). *Fear of contamination*. New York: Oxford University Press.