

**TRAUMA AND THE PATHOGENESIS OF OCD:  
A LITERATURE REVIEW**

**Mariaan Janet Mavrothalassitis**



Assignment submitted in partial fulfillment of the requirements for the Masters Degree in  
Clinical Psychology at Stellenbosch University

Supervisor: Dr. J. Wait

December 2001

## **DECLARATION**

I declare that the work used in my assignment is my own, original work and it has never been used, in partial or complete form, to obtaining a degree at any other university.

Signature

Date

## **Abstract**

Post-traumatic stress disorder (PTSD) is the most recognised mental disorder stemming from severe psychological trauma. One of the differential diagnoses of post-traumatic stress disorder, amongst others, is obsessive-compulsive disorder (OCD). These two disorders overlap at some point in terms of symptomatology. More specifically, both are characterized by recurrent intrusive thoughts. It has been hypothesized that trauma may also be a significant source of OCD development.

OCD and PTSD are disorders that present in adulthood, as well as in childhood and adolescence. It is shown that PTSD and OCD can present comorbidly in adulthood and it is theorized that it may also be the case in childhood and adolescence. Evidence of OCD developing in the context of trauma and theories of how this might have happened are presented. It is shown how complicated it is to distinguish between OCD developing in the wake of trauma and PTSD and the importance of such a distinction.

## **Abstrak**

Post-traumatiese Stresversteuring (PTSD) is een van die mees erkende sielkundige versteurings wat ontwikkel na die blootstelling aan sielkundige trauma. Obsessiewe-kompulsieweversteuring (OCD) is, onder andere, een van die differensiële diagnoses van PTSD. Die twee versteurings oorvleuel ten opsigte van simptomalogie. Meer spesifiek word beide gekenmerk deur herhalende indringende gedagtes. Daar word tans gehipotiseer dat trauma nie net 'n rol in die ontwikkeling van PTSD speel nie maar ook 'n oorsaaklike rol het in die ontwikkeling van OCD.

OCD en PTSD is versteurings wat kan voorkom tydens volwassenheid, asook tydens die kinderjare en adolessensie. Daar word bewys gedoen van PTSD en OCD wat saam voorkom gedurende volwassenheid en daar word geteoretiseer dat dit ook die geval mag wees tydens die kinderjare en adolessensie. Bewys word gelewer van OCD wat ontwikkel na blootstelling aan trauma en teorieë ten opsigte van die ontwikkeling word aangebied. Die onderskeid tussen OCD wat na trauma blootstelling ontwikkel en PTSD is ingewikkeld, dog is die onderskeid baie belangrik in vele opsigte.

## Index

	<b>Page</b>
1. Introduction	6
2. Children, Adolescents and PTSD	8
3. Children, Adolescents and OCD	10
4. Phenomenology, Overlap and Distinctions	12
5. Trauma and the pathogenesis of Obsessive Compulsive Disorder: Clinical Cases	21
6. Trauma and the pathogenesis of Obsessive Compulsive Disorder: Theories of Development	26
7. Conclusion	31
8. Reference List	32
9. Addendum	35

## **TRAUMA AND THE PATHOGENESIS OF OCD**

### **INTRODUCTION**

According to the Diagnostic and Statistical Manual of Mental Disorders-IV (American Psychiatric Association, 1994) the essential features of obsessive-compulsive disorder (OCD) are recurrent obsessions and compulsions that are severe enough to be time consuming or cause marked distress or significant impairment. At some point of the disorder, the person (usually) recognises that the obsessions and compulsions are excessive and/or unreasonable.

OCD is listed in the DSM-IV (APA, 1994) as one of the differential diagnoses of post-traumatic stress disorder (PTSD). This implies that the two disorders may overlap at some point in terms of symptomatology. More specifically, both are characterized by recurrent intrusive thoughts. However, the nature of these recurrent intrusive thoughts differ between the two disorders: In OCD they are experienced as inappropriate and are not related to an experienced traumatic event, whereas in the case of PTSD, intrusive thought patterns only follow after exposure to an extreme traumatic stressor. The distinction seems simple enough, but is it really that simple?

What would the case be if OCD developed in the aftermath of trauma?

In general, PTSD is the most recognised mental disorder stemming from severe psychological trauma. As indicated earlier, the prime causative factor of PTSD is exposure to a stressor, a traumatic event (APA, 1994). To return to the above-mentioned question - there exist, a small number of clinical cases, where OCD indeed did develop in the context of a traumatic event (Pitman, 1993; De Silva & Marks, 1999; Rheaume, Freeston, Leger & Ladouceur, 1998). In this context, the matter of distinction between OCD and PTSD gets even more complicated as further overlap in symptomatology and the resultant ritualistic mental and/or behavioural acts is evident.

These similarities in symptomatology may have caused many misdiagnoses (and thus rendered treatment less effective).

With these findings as background, it has recently been hypothesized that trauma may also be a significant source of OCD development (Pitman, 1993; De Silva & Marks 1999; Rheume, et al., 1998). As early as 1903, a distinction was made by Janet (in Pitman, 1987; Pitman, 1993; Kardiner in Pitman, 1993) between so-called "constitutional OCD" (OCD that has been present before traumatization) and "acquired OCD" (OCD developing in the context of psychological traumatization).

The question is raised how one would distinguish between OCD that developed in the context of trauma, from PTSD, and what the implications for conceptualisation and treatment would be. However, thus far the issue of "trauma induced" obsessions and compulsions has received very little attention in the descriptive literature (Pitman, 1993).

Despite this scarcity of information, it is apparent that not only adults, but children and adolescents as well, may present with comorbid PTSD (Pfefferbaum, 1997; Le Heuzey, 1999; Pelcovits & Kaplan, 1996) and OCD symptomatology (Heyman, 1997; Leonard, Lelane & Swedo, 1993). However, the clinical picture with regards to traumatically induced obsessions and compulsions in children and adolescents specifically, remained unexplored.

The aim of this assignment is to review the available PTSD and OCD literature, with regards to children and adolescents, in order to clarify some of these issues. As well as review the current trauma-related OCD literature and theories of trauma-related OCD development.

To avoid ambiguity the term "trauma" will be used as it pertains to psychological trauma and the term "intrusive cognitions" will refer to both images and thoughts. The term "thoughts" will be used specifically to refer to lexical cognitions, and the term "images" will be used to refer to mental images.

## **Children, Adolescents and PTSD**

This section will give a brief review of some of the current PTSD literature with regards to children and adolescents.

In a review of the past 10 years of literature on the clinical presentation, assessment and treatment of PTSD in children, Pfefferbaum (1997) described PTSD in children who were exposed to a variety of traumatic experiences. According to this review, Giaconia (in Pfefferbaum, 1997) found that by the age of 18 years more than 40% of youths in a community sample met the criteria for at least one DSM-III-R (Diagnostic and Statistical Manual of Mental disorders-III-R, APA, 1987) trauma, and more than 6% met the criteria for a lifetime diagnosis of PTSD. In this review, it was apparent that little is known about the epidemiology of the disorder in children. Partial symptomatology and comorbidity is common (Giaconia, in Pfefferbaum, 1997) and may be disabling - even if full criteria were not met. Comorbid conditions are common (Breslau et al., Goenjian et al., Hubbard et al., Kinzie et al., Sack et al., in Pfefferbaum, 1997). For example, in a study of more than 300 youths, a lifetime diagnosis of PTSD by the age of 18 years significantly increased the risk of other diagnoses such as depression, anxiety disorders and alcohol and drug dependence (Giaconia, in Pfefferbaum, 1997).

It has been reported that there are a variety of factors that influence response to trauma and that affect recovery after exposure to trauma. These factors include characteristics of the stressor and exposure to it, individual factors, psychiatric history, family characteristics and cultural factors (Pynoos et al., Giaconia et al., Hanford et al., in Pfefferbaum, 1997). Most of the available literature includes descriptions of children's and adolescents' response to trauma exposure, as well as indications that interventions tend to include efforts within schools and/or communities. While assessment has received attention, the longitudinal course of PTSD and treatment effectiveness has not been studied extensively.

Perry and Azad (1999), however, contends that despite increasing attention over the past 10 years, childhood PTSD remains an understudied public health problem.



In another overview of PTSD in children and adolescents, Pelcovitz and Kaplan (1996) noted that, in terms of PTSD symptoms in childhood, children are less likely to experience classic flashbacks. Terr (in Pelcovitz, & Kaplan, 1996) describes one of the universal responses of children to trauma, as vivid, repeated visual memories of the traumatic event. These memories are most likely to be experienced by the child when he/she is not busy. It may also be experienced via tactile or olfactory channels. Also mentioned are repetitive dreams (generally seen in children over age 5 years) that may vividly recreate the trauma or, more likely, may take a disguised form. Children may also show signs of re-experiencing the trauma through traumatic play or through repetitive reenactments.

In addition, Pelcovitz and Kaplan (1996) identified certain risk factors for PTSD in children: Apparently girls are at an increased risk for developing post-traumatic symptoms. While investigating the response of 5687 children to Hurricane Hugo, Shannon et al. (in Pelcovitz & Kaplan, 1996) found that girls tend to experience symptoms associated with emotional processing and emotional reaction to the trauma, while boys were more inclined to experience symptoms related to cognitive or behavioral factors. In contrast to adults (older trauma survivors are less likely to develop PTSD), there is some evidence that older children (who understand the meaning of a traumatic event better) may be more likely to develop PTSD. In terms of assessment, the authors (Pelcovitz & Kaplan, 1996) note that it is important to interview school-aged children and adolescents when their parents are not in the interview room, because there is evidence that children may protect their parents by under-reporting trauma-related symptoms.

Le Heuzey (1999) reiterates the fact that PTSD occurs in children as well as in adults following a stressful traumatic event (which is unique and/or exceptionally severe, or recurrent as in abused children). The main symptoms are repetitive acts, avoidance of trauma-related stimuli and physiological hyper-reactivity. Prevention and recognition of this disorder are important as to prevent its disabling effects on the child (Le Heuzey, 1999, Perry & Azad, 1999).

## **Children, Adolescents and OCD**

The following section provides a brief review of some of the current OCD literature pertaining to children and adolescents.

Leonard et al. (1993) reviewed the phenomenology, treatment and outcome of OCD in children and adolescents. In his review, it was indicated that the specific clinical symptoms seen in childhood OCD are essentially the same as those described in adults, i.e. a waxing and waning course, which may be exacerbated by psychological stress. Children and adolescents with OCD present with both rituals and/or obsessions, and mostly recognize the irrationality of their obsessive thoughts and compulsive rituals. As a result, they often make concerted efforts to hide their disorder. Typically, the very young children (ages 6 to 8 years) could be distinguished from older children, adolescents and adults by having elaborate washing or checking rituals without cognitive obsessions.

It was found that washing rituals were the most common OCD symptom, affecting more than 85% of the children at some time during their illness (Leonard et al., 1993). When specifically asked, the children would acknowledge their excessive washing, but this information would rarely be volunteered. The excessive washing might either be increased frequency of hand washing or bathing, or elaborate, ritualized washing patterns that took several minutes or longer to complete. Leonard et al. (1993) found that it was not uncommon for patients to report that they were "required" to wash in a set pattern and to do it "perfectly". Parents reported increased laundry requirements, increased hot water bills, or toilet stoppages from excessive toilet paper use. For the majority of cases the excessive washing was accompanied by an obsessional concern with dirt, germs, body excretions or environmental toxins. Sometimes obsessions were more unusual, such as concern about possible contamination from rabies, AIDS, spearmint gum, ballpoint pen and battery acid.

At some point in time, repeating rituals were present in more than half of the sample (36,51%). Checking was the next most common ritual, reported by 46% of the children (Leonard et al., 1993)

Most adolescents acknowledged that the behaviour was irrational, yet they felt compelled to complete the act. Ordering, arranging or making things "symmetrical" was endorsed by 17% of the subjects (Leonard et al., 1993).

Other reported obsessions included "scrupulosity" (13%), where the subjects were preoccupied with whether they had done/said "the right thing" (Leonard et al., 1993). For some of the subjects, this obsession took the form of religious preoccupations accompanied by excessive praying. Others had a "somatic" preoccupation, for example that they might have contracted AIDS (when in reality there had been no exposure to the virus). Associated comorbid diagnoses were depression, tic disorder, specific developmental disability, other anxiety disorders, overanxious disorder, separation anxiety disorder, oppositional disorder and attention-deficit disorder (Leonard et al., 1993).

Leonard, Goldberger, Rapoport, Cheslow and Swedo (1990) saw the symptoms of OCD as extreme variants of normal developmental rituals and superstitiousness. According to these authors, ritualised behaviour begins in early childhood and continues throughout development. At a young age it is mostly characterised by bedtime rituals and the requirement that things be just so. Later on, formalised games, collecting, and focused interests predominate. The similarities between normal developmental rituals and OCD rituals that was indicated, include the need for things to be just so, counting and having lucky numbers, and having bedtime as a frequent time for the rituals. In contrast, OCD rituals differ from normal developmental rituals in that there is a later mean age of onset, is distressing if not performed, are ego-dystonic, interfere with one's life, and have the hallmark features of washing, checking, and repeating. In other words, normal developmental rituals have a presumed role in mastering anxiety and enhancing one's socialization, whereas OCD rituals are emotionally distressing, isolating, and incapacitating.

Leonard et al. (1990) report that no continuum between the rituals of normal developmental and of OCD has been documented yet.

In the same vein, Heyman (1997) said that OCD in young people is common and under-recognized. Estimated prevalence rates in children and adolescents are about 1%. The distress to young people caused by the characteristic intrusive, unwanted, and often unpleasant thoughts or fears is often hidden, as children identify these symptoms as peculiar or embarrassing and keep them secret, sometimes for years. Likewise, compulsive behaviours such as washing or checking are usually perceived as unnecessary and often ridiculous, and children may go to great lengths to conceal them. The psychopathology is strikingly similar to that seen in the adult disorder, and many adults diagnosed with obsessive-compulsive disorder report that their symptoms first began in childhood. If children are asked directly, they can often give lucid accounts of their problems, which are easily distinguished from ordinary childhood superstitions or rigidity. In addition to causing acute distress and disruption to education and friendships, obsessive compulsive disorder in children can be highly disabling, associated with chronic psychiatric morbidity, as well as severe long term social impairment, also noted earlier by Leonard et al. (1993).

### **Phenomenology, Overlap and Distinctions**

Intrusive imagery is both a common response to trauma and a hallmark symptom of PTSD. However, its features and underlying mechanisms have not been reviewed systematically. Ever since PTSD was officially recognized as a psychiatric disorder, intrusive thinking has been regarded as a major feature of its phenomenology (VanOyen Witvliet, 1997; De Silva and Marks, in Yule, 1999). Even prior to the official acceptance of PTSD as a diagnostic category, accounts of traumatic stress reaction (e.g. war neurosis) often included vivid descriptions of intrusive thoughts and images (Kardiner, in Pitman, 1993).

Intrusive cognitions have been discussed in the literature in some depth since the work of Rachman over 20 years ago (e.g. Rachman, 1971, 1978, 1981). The early work was focused on unwanted intrusive cognitions, which Rachman and De Silva called “normal obsessions” in their 1978 paper (in Yule, 1999). The term was suggested as the nature and formal properties of unwanted, intrusive cognitions in normal subjects were not very different from clinical obsessions in OCD patients. In other words, obsessions in OCD are essentially intrusive phenomena, and this quality is shared by normal obsessions. While the early work

concentrated on unwanted intrusive cognitions of a negative kind, it was recognized that there are also intrusive cognitions that are not negative or unpleasant, and indeed many of which are not unwanted at all - despite their intrusiveness (e.g. day dreams, romantic fantasies). Rachman (1981) referred to "a wide range of welcome forms of intrusive activity, up to including what artists sometime describe as inspiration" (p 89).

How, then, would one define "intrusive cognitions"? Salkovskis (1990) has offered the following definition:

Intrusive cognitions are mental events, which are perceived as interrupting a person's stream of consciousness by capturing the focus of attention. These cognitive events can take the form of "verbal" thoughts, images or impulses or some combination of the three. (p 91)

By definition, intrusive cognitions intrude into, and therefore interrupt, a person's ongoing mental activity. They are not merely "perceived as interrupting a person's stream of consciousness", as stated by Salkovskis (1990); they in fact do interrupt the stream of consciousness. The cognitions happen to the person; that is, it is not a voluntary event. De Silva and Marks (in Yule, 1999) concur with Rachman's statement (1981) that:

The necessary and sufficient conditions for defining a thought, image or impulse as intrusive are as follows: the subjective report that it is interrupting an ongoing activity; the thought, image or impulse is attributed to an internal origin; and is difficult to control. (p 163)

In the following review I will mainly focus on Reynolds and Brewin's (1998) findings with regards to the intrusive cognition's symptom feature of PTSD. (The depression findings is not of true relevance in this assignment and is only mentioned because it forms a integral part of the study reported on.)

The authors (Reynolds & Brewin, 1998) interviewed patients with PTSD, depression as well as a non-clinical group about their most prominent intrusive cognition, coping strategies and emotional responses. PTSD is usually associated with intrusive memories and it has been

suggested that these may take the form of either ordinary autobiographical memories or flashbacks. Whereas the recall of ordinary trauma memories is under conscious control, flashbacks represent entirely spontaneous and relatively uncontrollable intrusions that are characterized by intense affect and strong sensory elements, and that are experienced as happening in the present (Brewin et al., in Reynolds et al., 1998). In contrast to an enormous amount of research on visual recollections in PTSD, the existence of verbal intrusions is rarely researched, and it is not known whether some PTSD patients are more troubled by thoughts than memories.

The data revealed that patients with depression and patients with PTSD, are much more similar in terms of their intrusive cognitions (than the non-clinical group), and they possibly experience a wider variety of types of intrusions than might have been expected. It was found that levels of intrusion and avoidance were similar in both groups and that the most frequently occurring intrusions were experienced in the form of thoughts. Thoughts were generally in the form of evaluative cognitions (supporting the social-cognitive theories of PTSD). PTSD was also characterized by intrusive memories, often in the form of flashbacks, and often accompanied by evaluative cognitions. There was no difference between the three groups on the reported frequency of intrusions after the event. This is consistent with Brewin et al.'s (in Reynolds & Brewin, 1998) suggestion that high levels of intrusions are a normal immediate response to trauma, and cannot be used to predict who will subsequently develop PTSD.

In contrast to the non-clinical group, the clinical groups reported high levels of intrusiveness and unacceptability (of the intrusive thought) and low levels of controllability. Low perceived controllability has been found to be associated with depressed mood (Edwards & Dickerson, in Reynolds et al., 1998), and to predict the persistence of distressing intrusions (Pourdon & Clark, in Reynolds et al., 1998). The richness and complexity of mental intrusions in these two conditions point to the need for more sophisticated cognitive models of depression and PTSD.

Lipinski and Pope (1994) describe three patients who experienced unpleasant, vivid, repetitive, intrusive mental images. In each case, these images were interpreted at some

point as flashbacks of possible childhood trauma, with the result that the patients were diagnosed as suffering from PTSD, and in one case dissociative personality disorder. All these patients were advised to enter psychotherapy aimed at elucidating the presumed traumatic memories underlying the flashbacks. Yet several lines of evidence suggested that these patients were actually suffering from OCD.

Firstly, the content of the images did not appear to correspond to real past experiences of the patients. Of course, it might conceivably be argued that these patients had actually witnessed stabbing, corpses, etc. as children and then repressed these memories. However, given the absence of objective historical evidence for such experiences in any case, such conjecture would seem implausible.

Secondly, all these patients displayed numerous associated symptoms meeting the criteria for OCD. These included hand washing, checking, and cleaning rituals, and obsessions experienced as intrusive and senseless, which patients attempted to suppress or neutralize. Thirdly, all patients experienced improvement or remission of their distressing images when treated with medication (clomipramine or fluoxetine). Other obsessional and compulsive symptoms improved concomitantly with the disappearance of the images in all cases, again suggesting that the images were part of the symptom picture of OCD. It must be noted here that PTSD also responds to these medications, thus this line of argument is basically rendered redundant.

With this evidence as background, the authors (Lipinski & Pope, 1994) suggested that patients with vivid or disturbing mental images (sometimes diagnosed as flashbacks of repressed childhood trauma, micro-psychotic episodes of borderline personality disorder or even as visual hallucinations) should be evaluated for OCD. Misinterpretation of obsessional images may prevent or delay the patient's access to efficient behavioural and pharmacological therapies for OCD.

In terms of the proposed overlap between OCD and PTSD, De Silva and Marks (in Yule, 1999) concluded that, despite the apparent commonalities, there are certain clear differences:

- Intrusive cognitions that take the form of impulses, which are not uncommon in OCD, are relatively rare in PTSD. They are not entirely absent in PTSD though.
- Intrusions in OCD are often senseless, inappropriate and ego-dystonic, this is not generally the case with PTSD. Intrusions in PTSD are as unwanted as those are in OCD, but they are never senseless or inappropriate, and the patient usually identifies with the cognition.
- Intrusions in OCD in most instances lead to a compulsive behaviour, while in PTSD, in a minority of cases the intrusive recollection, or other intrusions, may lead to a compulsive cognition or another form of compulsive behaviour, but in general they do not usually lead to compulsions.
- Intrusions in OCD are in most instances not linked to a specific past experience. In PTSD the intrusions are generally firmly derived from, and based on, specific past experiences.
- Physiological arousal that is connected with the intrusions in OCD is due to the distress about the occurrence of the intrusion. In PTSD, the physiological arousal connected with an intrusion is part of the memory of the past trauma.

De Silva and Marks (in Yule, 1999) emphasized that, although these differences are significant, one must not lose sight of the considerable overlap that exists between the intrusions in PTSD and those in OCD. If OCD were to develop after a traumatic event, the overlap will become even greater - complicating the distinction between OCD and PTSD exponentially.

Amaya-Jackson and March (1993) state that, in terms of comorbidity and differential diagnosis, primary OCD is readily distinguished from PTSD, in that OCD usually lacks a PTSD-magnitude precipitant and trauma-specific intrusion. Rarely OCD may develop in the context of PTSD by secondary generalization. For example, children who have been assaulted sexually, not uncommonly develop obsessional thoughts of contamination and may handle the anxiety associated with these thoughts through washing rituals. Checking rituals in response to obsessional concerns about safety issues also occur. No data is however reported to support this statement.



De Silva (1986) presented an account of the imagery occurring in the context of Obsessive Compulsive Disorder. Data from clinical cases were used to identify the occurring imagery and four distinct types of images were identified:

### The Obsessional Image

These obsessions, or unwanted intrusive cognitions, may consist of a thought, an impulse, a combination of the two, or it may consist of a mental image, or a combination of either of the above (Rachman, in De Silva, 1986). A clinical example of this type of imagery, which De Silva (1986) calls the “obsessional image”, follows:

A young man complained of recurrent intrusive images of himself violently attacking his elderly parents with an axe. He also had the thought that he might actually commit this act. His imagery included images of the victims, of blood flowing and of injuries caused. (p 335)

### The Compulsive Image

The compulsive behaviour can also involve imagery. Taylor (in De Silva, 1986) describes this phenomenon in the following way: “...they (obsessional-compulsive patients) may have to call up the image of some experienced or imagined scene until it has reached a certain level of clarity and detail...” (p 169). This may be seen as a case of a cognitive compulsive ritual (Rachman, 1976). It seems then that the compulsive act can, in some cases, take the form of imagery. According to Taylor (in De Silva, 1986), two types of compulsive images can be identified. The first may be called the “corrective image”. This is an intrusive image, which causes distress, and leads to a compulsive image that corrects, or neutralizes, the original image. An example is given by (Rachman, 1976):

A young woman had the recurrent image of four people lying dead in open coffins in an open grave. This caused intense distress and led to a neutralizing compulsive

behaviour, which was to imagine the same four people standing or walking, quite healthy. When she imagined this, she felt relieved. (p 335)

The second type of compulsive image is called the "independent image". In this case the image once again satisfies all the requirements of a compulsive behaviour but, unlike the corrective image, is not a remediation of a previous obsessional image.

A married man had the recurrent intrusive thought that some serious harm would befall his family. When he experienced this, he had to imagine, in rigid sequence, photographs of his two children and wife, then a photograph of his deceased parents. After this he had to imagine pictures of the Virgin Mary and Jesus Christ, these two with a set of yellow lights around each, and finally photographs of two other persons. (p 336)

### The Disaster Image

Many patients fear that their obsessions, or failure to carry out compulsions, may lead to great disaster. In some cases this "fear of disaster" takes the form of clear and vivid imagery. The following case presented by De Silva (1986), illustrates this idea clearly:

An elderly man had the frequent intrusive thoughts/doubts that he may not have switched off the gas in his house. Along with the anxiety and discomfort he felt as a result of this, he also had the fear that his home would go up in flames. This took the form of a clear and vivid visual image of his house ablaze, with huge red flames and thick black smoke. (p 337)

### The Disruptive Image

Sometimes, while carrying out compulsive behaviour, a patient may find that it is disrupted by an event that invalidates the compulsion, thus requiring the whole sequence to be re-started.

While this disruption can be caused by many factors, there are cases where the disruptive event is a clear and well-defined image. The following is an example:

A middle-aged man had recurrent thoughts/images of past homosexual experiences. This led to feelings of guilt and discomfort, and he had to cleanse his mind with silent prayers uttered in a certain fixed sequence. If images of homosexual acts occurred during this praying, he had to restart the prayers. (p 337)

In conclusion, obsessional-, disaster- and disruptive images are intrusive and spontaneous, while compulsive images (corrective and independent) is actively brought about by the patient. According to De Silva (1986), most images in obsessional-compulsive experiences are visual. However, auditory imagery occurring in the obsession, is also recognized in the literature, e.g. "tunes in the head".

De Silva and Marks (1999) reported on the content of the obsessions and compulsion in OCD. It is said that the nature of the trauma may or may not provide the main concerns on which the obsessions and/or compulsions are built. In the case of Miss M (De Silva & Marks, 1999), the main content of the OCD was directly determined by the nature of the trauma: sexual assault, followed by feelings of 'being dirty' leading to concerns about dirt and contamination and the associated urges to wash and clean. Similarly, in Mrs Y's case (De Silva & Marks, 1999), there is link between the experience of rape and feeling unclean, leading to washing compulsion. In the case of Mr K (De Silva & Marks, 1999), the main content of the OCD was again governed and defined by the nature of the trauma he had suffered. He became concerned about danger and safety, and his checking, doubting and re-assurance seeking were almost exclusively related to this. His diagnosis of OCD was due to the clearly compulsive nature of his behaviour (e.g. compulsive urge to check, checking a certain number of times, temporary relief from anxiety after checking, relief from receiving re-assurance). If he only had the hyper-vigilance along with non-ritualised and non-repetitive checking, one might have understood this behaviour as entirely falling within the realm of PTSD symptomatology. The nature of Mr K's checking, however, was typical of OCD symptomatology (DSM-IV, APA, 1994). In the other two cases cited, Mrs D and Mr X (De

Silva & Marks, 1999), the symptoms of the OCD had no apparent link with the nature of the traumatic event prior to its onset. Mr X came with a history of a major accident in which he sustained physical injury, from which he recovered. He developed psychological difficulties typical of PTSD. At the time of his referral, he reported clear obsessional thoughts and images. These were in addition to specific intrusions about the accident itself, and were not directly related to the event content-wise. These came repeatedly and continually, and he was unable to dismiss them easily. Mr X also engaged in mental rituals aimed at countering and neutralising the obsessions. At the time he was seen he satisfied the diagnostic criteria for both PTSD and OCD.

The relationship between the trauma and the OCD, in these cases, was a temporal and historical one. This is not unusual, as the clinical literature has numerous references to the onset of OCD after or during stressful life events. Thus the content of the OCD could be related directly to the trauma, or not. The focal point of the diagnosis of OCD was the uncontrollability, excessiveness, compulsive and ritualistic nature of the behaviour, as well as the insight that the behaviour was excessive and unreasonable.

While there are many studies of comorbidity in combat veterans with PTSD, studies of PTSD from other sources of trauma (e.g., disasters, crimes and civil violence) are just beginning to merge (Deering, Glover, Ready, Eddleman & Alarcon, 1996). Deering et al. (1996) presented the first formal review comparing patterns of comorbidity in PTSD from different sources of trauma, giving specific attention to the relative frequencies of substance abuse, depression, generalized anxiety disorder, phobic, panic, somatization, psychotic and personality disorders. The findings reveal that although similarities exist, the comorbidity profiles differ according to the type of trauma experienced and the population studied. Additionally, evidence suggests that the associated psychiatric disorders are not truly comorbid, but are interwoven with the PTSD.

It is worth noting that in a general epidemiological survey, it was found that the risk of OCD was ten times greater in those with PTSD than in others (Helzer et al., in De Silva & Marks, 1999). However, the influence of pre-morbid tendencies in the development of OCD following

severe trauma, and the implications thereof for treatment, will not be dealt with in this assignment.

### **Trauma and Pathogenesis of OCD: Clinical Cases**

Epidemiological evidence has pointed to a disproportionate rate of obsessive-compulsive disorder among high-combat exposed Vietnam veterans. Pitman (1993) presented a case report of an individual (traumatized during late adolescence) without previous overt psychopathology, who under the stress of combat developed concurrent OCD and PTSD persisting for more than 20 years. This hallmark case of B.A., a Vietnam combat veteran, as described by Pitman (1983), has highlighted the phenomenological overlap of OCD and PTSD.

A possible criticism of the high incidence of OCD in Vietnam combat veterans is that the current intrusive recollections of PTSD may be mistaken for the recurrent ideas, thoughts and images of OCD. In B.A.'s case, there is little question of such an error. Even though he did have a severe case of PTSD, he showed all the classic OCD symptoms, including obsessions of violence, contamination, and doubt, hand-washing, cleaning, checking, counting, and touching compulsions, attempts to resist these symptoms, and recognition of their unreasonableness. Although he met criteria for two mental disorders, he neither perceived nor gave the impression of a fundamental difference between his intrusive recollections and his obsessions. Rather, they seemed to merge as part of his whole posttraumatic psychopathology. For example, his symptoms of patrolling his property for signs of intrusion may be viewed equally as PTSD re-experiencing and as a checking compulsion.

Apparently there seemed to be nothing that B.A. could do in Vietnam to sooth his restlessness. Initially, this manifested itself in areas specifically related to his safety in combat; he was uncertain whether his rifle was loaded or whether his machine-gun would jam. However, it soon generalized to trivial areas of his life, e.g. whether he had the right number of cigarette packs in his locker. Worse, it persisted long after he was no longer in the

stressful situation. (In terms of differential diagnoses, major depression, dysthymia and panic disorder were considered.)

The devastating long-term impact of PTSD and OCD on his level of functioning was illustrated. In this way, Pitman (1993) elucidated the potential role of emotional trauma in the pathogenesis of obsessions and compulsions.

De Silva and Marks (1999) reviewed the role of traumatic stress in the genesis of OCD in their research. They cite eight clinical cases that appear to fit the "trauma origin"-model of OCD, similar to the case mentioned by Janet (in De Silva & Marks, 1999 and in Pitman, 1993). In each case, the onset of the disorder was preceded by trauma. With one exception, the obsessive-compulsive symptoms started either in the immediate aftermath of the event, or within a number of weeks. Full-blown OCD appears to have developed in the course of time. In all of the cases, OCD co-existed with full-blown PTSD symptoms, at least for some of the time.

More specifically, in the case of Miss M (De Silva & Marks, 1999) a 24 year old single woman, was referred with a history of a serious sexual assault whilst on holiday abroad. Immediately after the traumatic event, she felt 'quite dirty', and spent a long time washing herself and everything she had with her at the time. After her return home, she continued to feel dirty and said that she could not stop or resist the urge to wash repeatedly. She washed both her person and her clothes and other things in her flat; she would spend hours doing this. She also suffered many symptoms of PTSD, including flashbacks, numbing, nightmares, poor sleep and hyper-vigilance. She had in fact, full-blown PTSD for some time after the attack, for which she received some professional help. By the time she was seen by the authors, the main complaint was OCD, and she had a clear diagnoses of the disorder. She had obsessional thoughts about being dirty and unclean, which were linked to washing compulsions. Miss M agreed that her washing was excessive and irrational, yet, despite her attempts to resist the compulsive urges, she continued to engage in these rituals.

In case of Ms J (De Silva & Marks, 1999), an 18-year-old woman came for treatment of OCD. Her symptoms followed being held at knifepoint during a robbery at home shortly after her father abandoned the family without warning or information on his whereabouts. During the robbery she feared she would be killed, but managed to escape unharmed. Her mother was also in the house at the time. Ms J developed intrusive thoughts and images, nightmares and hyper-vigilance that lasted for some months after the event. She developed OCD symptoms that worsened over time, though the symptoms of PTSD resolved. She felt compelled to pray in a ritualistic manner so as to avoid further harm to herself or her mother. She also felt compelled to 'concentrate fully' when praying and had to repeat the prayer if any doubts about her concentration appeared during prayer. She also developed washing, counting and touching rituals. As a child she had been very particular about how she liked her room arranged, but she had not shown full-blown OCD symptoms, or indeed any definite obsessional traits prior to the robbery and her father's disappearance.

Janet (in Pitman, 1987) also cited the case of a 59-year old woman that developed obsessions after seeing the charred body of her daughter who had perished in a fire.

It is worth referring once again, as supporting case evidence, to the early observations of Kardiner (in Pitman, 1993) on the psychological sequelae of war. This included the recognition that some of those afflicted by war-induced traumatic neurosis, had what he called "defensive ceremonials" (p 102).

A recent Australian study (Jones & Menzies, 1998) found that, in a sample of 23 patients with obsessive-compulsive (OC) washing, 3 (13%) had an onset following a traumatic experience. Tallis (1992) also reports cases in which obsessional-compulsive behaviour developed after the exposure to a traumatic event. Tallis (1992) actually reported on inflated responsibility, guilt and the psychological fusion of thought and action feature prominently in contemporary accounts of obsessional phenomena, two cases are reported in which the presence of these features is explained. One of the cases is cited, as the critical (traumatic) event happened during her childhood.

The subject was a 49-year-old woman. Obsessional symptoms included intrusive thoughts, number rituals and repeated checking of household appliances. Typically, checking and ritualizing occurred in response to thoughts of being responsible for harm coming to others. As in the other case, the subject had enormous difficulty distinguishing thought from action. These thoughts were particularly troublesome when the subject was given more responsibility than usual. Exploration of the origins of this characteristic revealed a critical learning incident. As a child her father had continually sexually abused her. When she was 15 years of age, she recalled forming an intense wish that he would 'go' or be "taken away" and prayed to this effect. Within a week, her father was involved in an accident. He was instantly killed. Thereafter the subject experienced extreme guilt and self-blame. This guilt was so unbearable that she reported wanting to die.

In both cases, inflated responsibility, guilt and the psychological fusion of thought and action appear to share a common etiology. Both women experienced "wishing harm" to others, which was shortly followed by the actual occurrence of harm/trauma. For obvious reasons, this apparent relationship engendered feelings of inflated responsibility and related guilt.

Rheaume et al. (1998) described 13 case examples that provide evidence of this phenomenon, OCD developing in the context of critical incidents/trauma, which they call "bad-luck" experiences. The authors said that their clinical experience with OCD patients has shown them that a sizeable proportion of patients reported previous experiences such as accidents, very unusual events, or serious mistakes. In some cases these events, were spontaneously reported in early interviews. In other cases these events may only have been revealed at a later stage in therapy and may have only then led to the discovery of previous critical events that seem to have shaped beliefs.

Two of the cases cited by Rheaume et al. (1998) are presented. The first case presents a distal traumatic/critical learning event (events that occurred years prior to the onset of the disorder) as presumed causative factor:



A 47-year-old single man suffered from religious obsessions related to the fear of committing a mortal sin, dying without receiving absolution for sins and ending up in hell for eternity. He used a wide range of mental neutralization strategies where he examined his conscience and behaviour for the previous day, trying to resolve mental conflicts and to reassure himself. When he doubted that his actions had been sinful, he prayed excessively, made an act of contrition and went to confession repeatedly. He reported that he was a boarder in a religious school at the age of 16 years, and the priests at the establishment disseminated propaganda against sexuality and that masturbation was totally forbidden. Anxious to follow church rules the patient had asked one of the priests the following question: "Does having sexual thoughts constitute a sin?" The priest had replied: "Yes, the simple fact of thinking sexual thought was the equivalent of committing the act". This information coming from a representative of the church caused the client to repress his sexual thoughts that occurred despite all his efforts. (p 4)

Accepting unconditionally this information from an authority figure contributed directly to the onset of his attempts to neutralize these unacceptable sexual thoughts.

The second case, has a proximal traumatic/critical learning event (a specific incident providing not only the stimulus for a thought but the content and, by the consequences, the basis for the continuing evaluation of subsequent thoughts) as presumed causative factor:

The patient was a woman in her early twenties who reported aggressive, harming impulses that started approximately five years before. The onset was associated with a configuration of events, one of which was very dramatic. In the months after starting her studies in a junior college, which she reported as a very stressful period, she had her first experience smoking marijuana. This was associated with a perceived loss of control that upset her greatly. Within a week or so of this first experience of perceived loss of control, one of her classmates killed a teenager from the same neighbourhood in a very violent and bloody way. The obsessive thoughts started almost immediately where she thought that she also could lose control and do something similar. When she presented for

treatment five years later, she had never reported these thoughts to anybody else and she had in fact come to the conclusion that she was not dangerous. However, she remained concerned that even if she was not dangerous, these repeated thoughts meant that there was something wrong with her. (p 8)

In this case, the specific event had provided a content to the thoughts but at the moment of consultation it was the presence of the thoughts that was particularly troubling to the patient.

### **Trauma and Pathogenesis of OCD: Theories of development**

The early learning theory view was that a traumatic learning experience caused, via classical conditioning, certain stimuli to become anxiety-arousing, and that the behaviours which provided relief from this anxiety were strengthened and maintained, becoming compulsions (Eysenck & Rachman in De Silva & Marks, 1999). Even earlier theorists suggested that OC problems were caused by emotional shock (De Silva & Marks, 1999).

Pitman (1993) has postulated that OCD symptoms constitute latent response tendencies in humans that may be activated by several factors, including extreme stress.

The experimental animal literature also suggested stereotyped behavioural responses in relation to unrelated and/or non-specific aversive situations (Pitman, 1993). Data emerging from recent epidemiological studies point in the same direction, albeit only suggestively. Also, the high incidence of OCD in combat-exposed soldiers suggests that extremely stressful experiences may have led to the development of OCD in individuals who would conceivably not otherwise have developed the disorder (De Silva & Marks, 1999).

As mentioned in the preceding section, Tallis (1992) reported on inflated responsibility, guilt and the psychological fusion of thought and action. It is necessary to know that it was not Tallis's (1992) intention to suggest that OCD is caused by specific learning experiences as, according to him "this position is untenable" (p 144). However, it may be the case that unusual experiences contribute significantly to the development of certain features associated

with OCD, namely inflated responsibility, guilt and thought-action fusion (Rachman, 1976, 1993). Furthermore, the presence of these unusual experiences may go some way towards explaining the delusional quality of some obsessional ideas and their tenacity. If specific learning experiences of the kind described in the two cases presented by Tallis (1992), do have a role to play in the development of certain obsessional symptoms, then it is necessary to ask why similar case accounts have not featured more significantly in the OCD literature. To date, with the exception of a few authors (e.g. Rheaume et al., 1998; De Silva & Marks, 1999; Rachman, 1997; Pitman, 1993) there has been scant consideration in the OCD literature of how specific learning experiences may be related to the specific assumptions and emotions that produce obsessional behaviour.

Rheaume et al. (1998) provided an possible explanation of cases where the symptoms of OCD had no apparent link with the traumatic experience. These authors suggested that certain critical experiences – such as accidents, very unusual events, and serious mistakes – might lead to faulty assumptions, which in turn contribute to the development of OCD.

Rheaume et al. (1998) suggested that there could be at least two possible levels where specific events may contribute to the development of faulty assumptions, the first more distal, the second more proximal. Figure 1 (Addendum 1) presents a schematic representation of how both types of critical incidents may contribute to the development and progression of OCD. As mentioned in the cases presented in the preceding section, in the distal case, events that occurred several years prior to the onset of the disorder may serve as basis for subsequent faulty appraisals of obsessional thoughts. In the more proximal case a specific incident may provide not only the stimulus for a thought but the content, and, by the consequences, the basis for the continuing evaluation of subsequent thoughts. It should be noted that this schema does not imply that obsessions are due to critical events, rather it implies that such incidents can influence the content and appraisal of the intrusive thought.

In his recent analysis of the genesis of obsessions Rachman (1997) has postulated four vulnerability factors for the development of OCD. These are elevated moral standards, including striving for moral perfectionism; particular cognitive biases, such as action fusion

and elevated sense of responsibility, depressed mood and anxiety-proneness. It is likely that several vulnerability factors operate jointly and contribute to the development of a clinically significant OC problem.

In the case of those individuals whose subsequent OCD symptoms reflected the content of the traumatic experience, De Silva and Marks (1999) speculated that the posttraumatic reaction may, over time, give way to OCD, as in the case of B.A (Pitman, 1993) and Miss M (De Silva & Marks, 1999). It is also possible that trauma-related intrusions give way to or turned into non-trauma related obsessions. After all the two phenomena share many formal properties such as intrusive, unwanted, distressing, repetitive, hard to dismiss or control (De Silva & Marks, 1999).

Rachman (1997) said that "frank" obsessions are caused by catastrophic misinterpretations of the significance of one's intrusive cognitions. It is possible that in some, the common post-trauma intrusions led to such catastrophizing. This is especially likely when the intrusions persist (De Silva & Marks, 1999). The persistence of the intrusion may have led to the secondary effect of the person developing catastrophic interpretations (for example, "I am going insane"). This may be at least one of the pathways in which a traumatic event leads to a frank OC problem.

Questions are raised whether it is correct that obsessions can be caused by the misinterpretation of the significance of one's intrusive thoughts or whether deliberate manipulations of the significance given to the thoughts confirm the predicted increase/decrease in obsessions.

One might ask whether, due to the obsessive/compulsive nature of the disorder, there is room in the sequence of actions/events for interpretation of the intrusive cognition. Rachman also does not take in to account the possible genetic component of the disorder.

The model presented by Rheaume et al. (in De Silva & Marks, 1999) suggested another, not dissimilar, pathway. It is possible that, with time trauma-related reparative activities (for

example, washing to clean herself after a sexual assault) became stereotyped rituals. The same would apply to trauma related avoidant, vigilant and preventative activities. In some cases, the co-existence of PTSD and OCD for a period of time may reflect the fact that in this transformation there may be an overlap period, sometimes even a prolonged one, before OCD become the sole psychiatric disorder (De Silva & Marks, 1999).

De Silva and Marks (1999) also proposed that there is a dynamic connection between PTSD and OCD and not simply a static one. In a portion of cases of OCD, a history of traumatic experience had an etiological role. This latter experience may also have caused the development of PTSD. The most common and most likely scenario is for the trauma to lead to PTSD first and later to OCD. As mentioned before there is often a period of time when the two conditions co-exist and may do so for a long time if untreated (De Silva & Marks, 1999). However, this assumption may only be true for some cases. These assumptions are based on De Silva and Marks (1999) experience working with clinical cases.

As Rachman (in De Silva & Marks, 1999) has shown in his paper on emotional processing, stressful or traumatic experiences not fully processed and absorbed by the individual can leave him/her with residual effects, including psychological disorder. The most potent manifestation of such effects is of course PTSD, which by definition is trauma-related. Rachman (in De Silva & Marks, 1999) further stressed that unresolved or unprocessed experiences can also lead to obsessions and other symptoms and syndromes. This notion partly accommodates the phenomena of traumatic experiences leading to OCD. The theory does not explain though why some individuals with PTSD develop OCD and others not. Vulnerability factors and the nature of the traumatic event may be relevant here. In proposing a psychological approach to the study of comorbidity of psychological/psychiatric disorder, Rachman (1991) has drawn attention to the value of exploring the connectedness of the two disorders, not simply determining their co-occurrence. He made the distinction between a static connection that may exist between two conditions and a dynamic connection that may be present. The determination whether the reported co-occurrence is a static connection or a dynamic one "would provide the basis for making accurate prognoses (for example, if problem A is treated successfully, will problem B disappear or persist?)" (Rachman, 1991).

De Silva (1986) said while it is tempting to assume that the obsessional image is a reflection, and perhaps a re-activation, of a trauma or stressful experience, the presence of such impersonal and senseless images makes it difficult to consider this as a general explanation. Also, a portion of patients did not report traumatic experiences that have led to, or fed into, their disorder. So any link with stress must be, in many cases indirect and/or remote. There is, however, compelling data from the study of intrusive cognitions in non-clinical subjects in stressful situations that encourages one to seriously consider the role of stress in the generation of obsessional beliefs (De Silva, 1986).

The dramatic increase of imagery during stress (Horowitz & Becker, in De Silva, 1986) suggested that the imagery mode might be activated more easily by stress. Further evidence supporting a strong stress-imagery relationship came from the data on the high number of intrusive experiences in Vietnam War veterans (Pitman, 1987).

Against this background, if one considers the marked similarities that have been shown to exist between the intrusive experiences of non-clinical subjects and the obsessions (intrusive cognitions) of obsessional-compulsive patients (Rachman & De Silva, in De Silva, 1986), one is tempted to extrapolate from the data on non-clinical samples to the phenomena of imagery in clinical cases. On this basis, it seems likely that the obsessional-compulsive image is stress-linked, or at any rate is a set response to a stressful experience. How stressful experiences can lead to behavioural and experiential consequences until and unless they are emotionally fully processed has been discussed by Rachman (in De Silva, 1986) and from a different point of view by Horowitz (in De Silva, 1986).

It is acknowledged that the consequences of stressful experiences include intrusive cognitions, including images. It is possible to speculate that the specific phenomenon of obsessional imagery will provide us with a particularly promising opportunity for investigating the role of trauma and stress in the etiology of obsessional-compulsive disorders (De Silva, 1986).

By implication clinicians should routinely enquire about traumatic events when assessing patients with OCD and be prepared for the need to treat both OCD and PTSD. Additionally, De Silva and Marks (1999) refer to treatment implications, which will not be focused on as it is beyond the scope of this assignment.

## **Conclusion**

In conclusion, OCD and PTSD are disorders that present in adulthood, as well as in childhood and adolescence. It is shown that PTSD and OCD can present comorbidly in adulthood and it is theorized that it may also be the case in childhood and adolescence. Evidence of OCD developing in the context of trauma and theories of how this might have happened are presented. It is shown how complicated it is to distinguish between OCD developing in the wake of trauma and PTSD and the importance of such a distinction in terms of symptom relief.

This assignment could serve as a basis for future research to advance diagnoses, and by implication treatment, as well as to contribute to the differentiation between current models of OCD pathogenesis. In addition, and probably most importantly, it could serve as a foundation for further research in the pathogenesis of OCD within the context of trauma in an child and adolescent population, as it is apparent that there is limited literature in this regard.

## REFERENCES

- Amaya-Jackson, L., & March J.S. (1993). Post-traumatic stress disorder in children and adolescents. Child and Adolescent Psychiatric Clinics of North America, 2(4), 639-654.
- American Psychiatric Association (1987). Diagnostic and Statistical Manual of Mental Disorders, Third Edition. American Psychiatric Association Washington, DC.
- American Psychiatric Association (1994). Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. American Psychiatric Association Washington, DC.
- Deering, C.G., Clover, S.G., Ready, D., Eddleman, H.C., & Alarcon, R.D. (1996). Unique patterns of comorbidity in PTSD from different sources of trauma. Comprehensive Psychiatry, 37(5), 336-346.
- De Silva, P. (1986). Obsessional-compulsive imagery. Behaviour Research and Therapy, 24(3), 333-350.
- De Silva, P., & Marks, M. (1999). The role of traumatic experiences in the genesis of obsessive-compulsive disorder. Behaviour Research and Therapy, 37, 941-951.
- Heyman, I. (1997). Children with obsessive compulsive disorder should have access to specific psychopharmacological and behavioural treatments. British Medical Journal, 315-444.
- Jones, M.K., & Menzies, R.G. (1998). The relevance of associative learning pathways in the development of obsessive-compulsive washing. Behaviour Research and Therapy, 36, 273-283.
- Le Heuzey, M.F. (1999). Post-traumatic stress syndrome in children. Archives Pédiatrie, 6(5), 573-577.
- Leonard, H.L., Goldberger E.L., Rapoport, J.L., Cheslow, B.S., & Swedo, S.E. (1990). Childhood rituals: Normal development or obsessive-compulsive symptoms? Journal of American Academy of Child and Adolescent Psychiatry, 29(1), 17-23.
- Leonard, H.L., Lenane, M.C., & Swedo, S.E. (1993). Obsessive-compulsive disorder. Child and Adolescent Psychiatric Clinics of North America, 2(4), 655-666.
- Lipinski, J.F., & Pope, H. G. (1994). Do "flashbacks" represent obsessional images? Comprehensive Psychiatry, 35(4), 245-247.



Pelcovitz, D., & Kaplan, S. (1996). PTSD in children and adolescents. Child and Adolescent Psychiatric Clinics of North America, 5(2), 449-469.

Perry B.D., & Azad, I. (1999). Posttraumatic stress disorders in children and adolescents. Cure Opine Pédiatre, 11(4), 310-316.

Pfefferbaum, B. (1997). Posttraumatic stress disorder in children: A review of the past 10 years. Journal of American Academy of Child and Adolescent Psychiatry, 36(11), 1503-1510.

Pitman, R.K. (1987). Pierre Janet on Obsessive-compulsive Disorder (1903). Archives of General Psychiatry, 44, 226-232.

Pitman, R.K. (1993). Posttraumatic obsessive-compulsive disorder: A case study. Comprehensive Psychiatry, 34(2), 102-107.

Rachman, S. (1971). Obsessional ruminations. Behaviour Research and Therapy, 9, 229-235.

Rachman, S. (1976). Obsessional-compulsive checking. Behaviour Research and Therapy, 14, 269-277.

Rachman, S. (1978). An anatomy of obsessions. Behaviour Analysis and Modification, 2, 253-278.

Rachman, S. (1981). Unwanted intrusive cognitions. Advances in Behaviour Research and Therapy, 2, 89-99.

Rachman, S. (1991). A psychological approach to the study of comorbidity. Clinical Psychology Review, 11, 461-464.

Rachman, S. (1993). Obsessions, responsibility and guilt. Behaviour Research and Therapy, 31(2), 149-154.

Rachman, S. (1997). A cognitive theory of obsessions. Behaviour Research and Therapy, 35(9), 793-802.

Rheaume, J., Freeston, M.H., Leger, E., & Ladouceur, R. (1998). Bad Luck: An underestimated factor in the development of obsessive-compulsive disorder. Clinical Psychology and Psychotherapy, 5, 1-12.

Reynolds, M., & Brewin, C.R. (1998). Intrusive cognitions, coping strategies and emotional responses in depression, PTSD and a non-clinical population. Behaviour Research and Therapy, 36, 135-147.

Salkovskis, P.M. (1990). Obsessions, compulsions and intrusive cognitions. In D.F. Peck, & D.M. Shapiro (Eds.), Measuring Human Problems. Chichester: John Wiley & Sons Ltd.

Tallis, F. (1992). Obsessions, responsibility and guilt: two case reports suggesting a common and specific etiology. Behaviour Research and Therapy, 32,(1), 143-145.

VanOyen Witvliet, C. (1997). Traumatic intrusive imagery as an emotional memory phenomenon: a review of research and explanatory information processing theories. Clinical Psychology Review, 17(5), 509-536.

Yule, W. (Ed.) (1999). Post-traumatic stress disorder: Concepts and therapy. New York: John Wiley & Sons Ltd.

