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THE ORIGINS OF INFLATED RESPONSIBILITY
IN OBSESSIVE COMPULSIVE DISORDER

Fiona Jane Bailcy, BA(Hons)

This thesis is submitted for the degree of Doctor of Psychology (Clinical), in partial
fulfilment of the requirements for that degree

School of Psychology
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December 2002
I certify that the thesis entitled

The Origins of Inflated Responsibility in Obsessive compulsive Disorder

submitted for the degree of

Doctor of Psychology (Clinical)

is the result of my own work and that where reference is made to the work of others, due acknowledgment is given.

I also certify that any material in the thesis which has been accepted for a degree or diploma by any other university or institution is identified in the text.

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ACKNOWLEDGEMENTS

Enormous gratitude goes to Dr Kathleen Moore for her investment, tireless contribution, and expertise in the supervision of this research. Her precision and thoroughness inspired great confidence and her generosity of time and effort made the process more manageable than it otherwise could have been. Many thanks Kate.

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This thesis is dedicated to the memory of my father who taught me the value of learning, the merits of determination and gave me the foundation from which to succeed.
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The pivotal role of inflated responsibility beliefs in the maintenance and treatment of obsessive-compulsive disorder (OCD) has been clearly demonstrated (Rachman, 1993; Salkovskis, 1998; Shafran, 1997; van Oppen & Arntz, 1994). Yet little is known about the origins of these beliefs, their contribution to a sense of inflated responsibility or the symptoms of OCD, or the contribution of personality to inflated responsibility and to OCD. The aims of this thesis were to investigate a model of the inter-relationships among the personality dimensions of neuroticism and psychoticism, inflated responsibility and OCD, and the origins of inflated responsibility to inflated responsibility and to OCD. In order to achieve these aims, a scale was developed to assess the origins of inflated responsibility based upon the five pathways proposed by Salkovskis, Shafran, Rachman, and Freeston (1999) and the additional domains of guilt, vigilance and thought-action fusion (Shafran, Thordarson, & Rachman, 1996; Shafran, Watkins & Charman, 1996; Tallis, 1994). Eighty-four participants with OCD (age $M = 43.36$) and 74 control participants (age $M = 37.14$) volunteered to participate in the two studies of this thesis. The aim of Study 1 was to develop and validate a measure of the Origins of Inflated Responsibility (OIR). The results of the first study yielded a 25-item scale, the Origins of Inflated Responsibility Questionnaire (OIRQ) with five independent factors: responsibility, strictness, protection from responsibility, critical incidents, and peer blame which demonstrated both internal reliability and temporal stability over a 2-week period. In Study 2, participants also completed the Responsibility Attitudes Scale (Salkovskis, Wroe, Gledhill, Morrison, Forrester, Richards, et al. (2000) (a
measure of inflated responsibility), the Padua Inventory (Sanavio, 1988) (to measure of the symptoms of OCD), and the Eysenck Personality Inventory-Revised (Eysenck & Eysenck, 1991). Multivariate Analysis of Variance revealed that the OCD group scored higher on all variables than the control group except for strictness where the groups were not different, and psychoticism where the OCD group scored lower. A series of Multiple Regression analyses revealed that both group and the OIR contributed to inflated responsibility ($R^2 = .56$). When all variables, OIR, inflated responsibility and neuroticism were entered as predictors of OCD, 60% of the variance in OCD was explained however, 49% of the variance was shared by the independent variables suggesting the presence of some underlying construct.

Structural Equation Modelling, where all the constructs in the model were examined simultaneously, revealed that neuroticism contributed to the OIR, inflated responsibility and OCD. The OIR were also significant predictors of inflated responsibility and indirectly through inflated responsibility predictive of OCD. The OIR also directly predicted OCD and when the total effects are considered, their contribution was greater than the total effect for inflated responsibility alone. The results of these studies provide good support for the origins of inflated responsibility proposed by Salkovskis et al. (1999), as measured by the OIRQ developed for use in the current thesis. The results also support the contribution of inflated responsibility and neuroticism, as well as the OIR, to OCD. The large amount of variance shared by the OIR, inflated responsibility and neuroticism suggest that there might be some underlying construct, perhaps of a biopsychosocial nature, that requires further investigation for its role in the onset and maintenance of OCD. The clinical relevance
of these findings is discussed in terms of early prevention strategies and interventions.
CHAPTER 1

Introduction

Obsessive-compulsive disorder (OCD) is an anxiety disorder (American Psychiatric Association; APA, 1994) with an estimated lifetime prevalence between 2% to 3% (Samuels & Nestadt, 1997; Sasson, Zohar, Chopra, Lustig, Iancu, Helmer, 1997).

Despite these high prevalence estimates OCD was, until the 1980’s, considered to be an uncommon condition and “true cases” of obsessional neurosis, as it was then called, were considered rare (Starr, 1999). An increased awareness of OCD among mental health professionals, better assessment tools, and greater opportunities for treatment, has contributed to the increase in reports of OCD (Stoll, Tohen & Baldessarini, 1992) and currently, OCD is the fourth most commonly reported psychiatric disorder (APA, 1994).

The impact of OCD on sufferers is highly debilitating and early reports have tended to underestimate these costs (Hollander, 1997). The tendency of OCD sufferers to keep their illness secret has made it difficult to glean a global understanding of the force of the disorder and its effects on an individual. However, research has indicated more and more the impediments that living with OCD has for occupational, social, relational, and interpersonal functioning (Hollander, 1997; Toro, Cervera, Osejo & Salamero, 1992). Even if only it occurs as a reaction to these problems, it is not surprising that major depressive disorder and dysthymia are often comorbid diagnoses in OCD (Rasmussen and Eisen, 1992). Such comorbidity adds to the impact on the sufferer, contributes to a poorer prognosis and to a more complex treatment regime. It
is also common for other anxiety problems to co-occur with OCD. Panic attacks, agoraphobia, simple phobias and social phobia are common comorbid diagnoses (Brown & Barlow, 1992) and these have also been shown to exacerbate interference in daily functioning (Welkowitz, Struening, Pittman, Guardino & Welkowitz, 2000).

In attempting to understand OCD, theorists have proffered several explanations for its development. Of the various schools of thought, the cognitive-behavioural formulation of OCD is currently widely endorsed and applied in clinical and research settings (Salkovskis, 1999). Several belief domains, or cognitive distortions, have been identified which are understood to be pivotal in the development and maintenance of OCD (Frost & Steketee, 1997). These cognitive distortions include perfectionism (Frost & Steketee, 1997; Rhéaume, Ladouceur & Freeston, 2000; Shafran & Mansell, 2001), overestimation of threat (Frost & Steketee, 1997; Menzies, Harris, Cumming & Einstein, 2000; Steketee, Frost & Cohen, 1998), thought-action fusion (Amir, Freshman, Ramsey, Neary & Brigidi, 2001; Coles, Mennin & Heimberg, 2001; Shafran, Thordarson & Rachman, 1996), and inflated responsibility (Foa, Amir, Bogert, Molnar & Przeworski, 2001; Frost & Steketee, 1997; Salkovskis, 1985; Salkovskis, 1989; Salkovskis, Wroe, Gledhill, Morrison, Forrester, Richards et al., 2000). Inflated responsibility has been defined as “the belief that one possesses pivotal power to provoke or prevent subjective crucial negative outcomes” (Rhéaume, Ladouceur, Freeston & Leclerc, 1995, p. 159) and Shafran (1997) found that it plays a significant role in perpetuating OCD symptoms and maintaining the disorder overall.
Cognitive behavioural therapists have targeted these exaggerated responsibility beliefs in treatment with demonstrated efficacy (Ladouceur, Léger, Rhéaume & Dubé, 1996), however, little is known about the origins of inflated responsibility beliefs.

Currently, the aetiology of individual’s inflated responsibility assumptions and cognitive distortions can only be extrapolated from general cognitive theory (Beck, 1976), as there have been no systematic studies into the origins of inflated responsibility. The aim of this research is to explore several possible sources of inflated responsibility beliefs via the development and validation of a new questionnaire utilising the theoretical origins of inflated responsibility proposed by Salkovskis, Shafran, Rachman and Freeston (1999), Tallis (1994), and Shafran, Thordarson and Rachman (1996). The utility of the new Origins of Inflated Responsibility Questionnaire to predict a sense of inflated responsibility and OCD symptoms will be investigated as well as differences between a clinical group of OCD sufferers and a non-clinical group on these dimensions. These results will inform early intervention and treatment strategies for people at risk of OCD.

Previous research has implicated the personality dimension of neuroticism in anxiety disorders, including OCD (Carey & DiLalla, 1994; Eysenck, 1967; Gray, 1970). The relationship between neuroticism and OCD symptomatology, and neuroticism and inflated responsibility, as well as the origins of inflated responsibility will be examined in the current thesis. The relationship between psychoticism and inflated responsibility will also be examined in an attempt to replicate Scarabelotti, Duck and
Dickerson's (1995) finding that people who are high on inflated responsibility are likely to be low on psychoticism (see section 5.2 for review).

The findings from this thesis will provide a psychometrically reliable and valid instrument for assessing the origins of inflated responsibility, which, in turn, will assist clinicians working with people who have OCD. In addition, the origins of inflated responsibility will contribute to early intervention and parenting programs aimed at a more balanced perspective on responsibility. Finally, an empirical validation of the origins of inflated responsibility will contribute to the explanatory power of the cognitive-behavioural formulation of OCD and will develop further the understanding of the role of inflated responsibility in OCD.
CHAPTER TWO

Clinical Profile, Diagnosis and Epidemiology in Obsessive-Compulsive Disorder

2.1 Clinical profile and definitions

OCD is a debilitating condition that affects some 2%-3% of the population (Samuels & Nestadt, 1997). The essential features of OCD in the International Classification of Diseases-10th edition (ICD-10: World Health Organisation, 1992) and the Diagnostic and Statistical Manual of Mental Disorders-fourth edition (DSM-IV: APA, 1994) are the same however, the DSM-IV categorises OCD as an anxiety disorder while the ICD-10 classifies it as a Neurotic, Stress Related and Somatoform Disorder. Despite these differences in categorisation, the hallmark of OCD in both nosological systems is the presence of obsessive thoughts and compulsive behaviours (Antony, Downie & Swinson, 1998).

Obsessions are described as recurrent and persistent thoughts, images or impulses that the individual finds repellent and abhorrent and which lead to significant distress and anxiety (APA, 1994). Obsessions typically centre on one of several themes, the most common of which relate to contamination, horrific images or impulses of a violent or sexual nature, or a need for symmetry, all of which are generally compounded by doubts and anxiety (APA, 1994). Obsessions are more than just ordinary concerns and worries and their content and recurrence causes significant anxiety and distress. Obsessions are not usually related in any real way to actual events (APA, 1994). For example, the mother who has obsessive thoughts about suffocating her baby is
typically not someone with a history of violence or of child abuse and she is no more likely than anyone else to actually carry out this act towards her child.

Compulsions are repetitive, ritualistic behaviours normally carried out by the individual in response to obsessions. The goal of these behaviours is to reduce or alleviate the anxiety and distress associated with the occurrence of the intrusive thought (APA, 1994, Röper & Rachman, 1976). Although compulsive rituals are typically carried out to alleviate the distress associated with obsessions or to prevent some feared event from occurring, frequently there is no association between the type of behaviour and the feared event (Shafran, 1999). For example, counting backwards from fifty each time a word associated with death is encountered will not in any actual way avert the feared harm to the person concerned.

Compulsions in the context of OCD are differentiated from other compulsive behaviours such as gambling, as the individual derives no pleasure or gratification from carrying out the compulsions (Hollander & Benzaquen, 1997). Although, people with OCD do derive relief from carrying out compulsions and anxiety decreases after carrying out the compulsive act (Rachman & Hodgson, 1980). Most sufferers report feeling driven to perform these acts and rituals despite knowing that they are excessive, unreasonable and irrational (APA, 1994). This insight into the excessive and unreasonable nature of obsessions and compulsive behaviours is, in fact, one of the diagnostic criteria set forth in the DSM-IV. For the few patients with OCD who do not view their obsessions or compulsions as excessive and unreasonable, the condition with poor insight is attached.
The most common compulsions involve repeated washing and cleaning, checking, counting, assurance seeking, ordering, and repeating mental or behavioural actions (APA, 1994). As with other anxiety disorders, the DSM-IV specifies that the obsessions and/or compulsions must cause marked distress and must consume more than one hour a day. The symptoms cannot be better accounted for by another Axis I disorder and they must not be due to a medical or substance induced condition. The following excerpt taken from the author’s case notes (2000) illustrates a typical presentation:

Mrs S. is an 88-year-old woman who had experienced obsessions about contamination and carried out washing rituals from age seven. She had previously been hospitalised for depression but had never received treatment for her obsessions and compulsions. Mrs S. would spend most of her day engaged in some sort of washing or cleaning behaviour. At worst, she would wash her hands up to forty times a day and would shower several times a day for up to an hour at a time. She would wash and change her bed linen every day and would sometimes feel the need to wash it more than once a day if she believed that the clean sheets had somehow become contaminated again. As well as worrying that she might pass on germs and contaminate
her family, Mrs S. was also concerned that if she did not wash, she would be seen as 'unclean' in the eyes of God. As a religious woman, this troubled her enormously and spurred her washing compulsions. It was not until she was exhausted that she was able to stop washing, although the anxiety was ever present.

In addition to the primary symptoms of obsessions and compulsions, other affective symptoms commonly occur. Co-morbid levels of depression, anxiety, fear, worry, and panic can serve as indicators of the severity of the obsessive-compulsive symptoms (Antony et al., 1998).

2.2 Comorbidity and differential diagnosis

There is a growing recognition of the comorbidity between OCD and other psychiatric disorders, particularly other anxiety disorders and mood disorders (Crino & Andrews, 1996) with depression the most frequent comorbid diagnosis (Crino & Andrews, 1996; Milfranchi, Marazziti, Pfanner, Presta, Lensi, Ravagli & Cassano, 1995). Of 154 OCD sufferers, Milfranchi et al. (1995) found that 20% met the criteria for Major Depressive Disorder while Rasmussen and Eisen (1992) found that 31% of 100 OCD sufferers reported current symptoms of Major Depressive Disorder and 67% of that sample showed lifetime comorbidity of Major Depressive Disorder. Epidemiological data reviewed by Samuels and Nestadt (1997) also confirm a high incidence of depression in OCD sufferers with 31.7% having a lifetime history of major depression.
Other anxiety disorders are also common comorbid diagnoses with OCD. Rasmussen and Eisen (1992) found that of a sample of 100 OCD sufferers, 22% experienced simple phobia, 18% social phobia, 12% panic disorder, and 2% separation anxiety. Using DSM-III-R criteria, Brown and Barlow (1992) found that 12% of 25 OCD sufferers had a current comorbid diagnosis of panic/agoraphobia, 24% social phobia, 4% generalised anxiety disorder, 28% dysthymia, and 4% simple phobia. Crino and Andrews (1996) found a high rate of comorbid anxiety disorders in their sample of 108 OCD sufferers with the greatest number (54%) meeting criteria for panic/agoraphobia, then depression (50%), social phobia (42%) and generalised anxiety disorder (31%). Only 14% of that sample had a diagnosis of OCD alone.

Although findings in the area of OCD and personality disorders vary considerably, a general pattern of associations between OCD and Axis II comorbidity, particularly Cluster C personality disorders, has been identified (Black & Noyes, 1997). The group of personality disorders most commonly found with OCD are avoidant, dependent, histrionic, schizotypal and to a lesser degree, obsessive-compulsive personality disorder, and personality disorders are typically diagnosed in 5%-30% of cases (Summerfeldt, Huta & Swinson, 1998). Although it may make intuitive sense that a high degree of obsessional traits such as perfectionism, obsessionality and rigidity that signify Obsessive Compulsive Personality Disorder (OCPD) would be present in people with OCD, Black and Noyes (1997) reported that other personality disorders and personality traits may be more common than obsessional traits in OCD sufferers. In fact, no one to one relationship has been demonstrated between
obsessional personality and the occurrence of OCD (Black & Noyes, 1997). Further, no relationship has been found between obsessional personality traits and the development of OCD (Black & Noyes, 1997). The relationship between the personality dimension of neuroticism and OCD has, however, been demonstrated (Carey & DiLalla, 1994; Eysenck, 1967; Gray, 1970) and this relationship will be explored further in section 5.2.

Other disorders that commonly co-occur with OCD include body dysmorphic disorder, hypochondriasis, Tourette’s syndrome, trichotillomania and impulse control disorders. This group of disorders has come to be known as the OCD spectrum disorders. The argument for the inclusion of these conditions into a grouping of OCD-related disorders is based both on the phenomenological similarities between the disorders usually relating to obsessional and/or delusional-type thinking and/or compulsive and/or repetitive behaviour as well as the high rates of comorbidity between OCD and these disorders (Goldsmith, Shapira, Phillips & McElroy, 1998; Hollander & Benzaquen, 1997).

Although alcohol problems are often found in sufferers of other anxiety disorders, particularly social phobia (Kushner, Abrams & Borchardi, 2000), the rate of alcohol dependence among OCD sufferers has not been as widely investigated. One study by Riemann, McNally and Cox (1992), failed to find a higher rate of alcohol dependence among their sample of OCD sufferers than found in the community.
In summary, the comorbidity rates are higher between OCD and other anxiety disorders, namely panic/agoraphobia and social anxiety (Brown & Barlow, 1992). Mood disorders, including Major Depressive Disorder and Dysthmic Disorder, are also commonly comorbid with OCD (Freeman, 1992). Among Axis II disorders, the Cluster C-type personality disorders are most highly associated with OCD, and avoidant, dependent, and histrionic personality disorders occur most frequently. Unlike in other anxiety disorders, a high occurrence of alcohol dependence in OCD sufferers has not been established (Riemann et al., 1992).

2.3 OCD Symptoms, Symptom Sub-types and Course

Although OCD is applied as a unitary diagnosis, recent investigations have challenged the homogeneity of the disorder, suggesting instead subgroups based on various criteria such as age of onset (Geller, Biederman, Jones, Park, Schwartz, Shapiro, et al., 1998; Rasmussen & Tsuang, 1986; Rosario-Campos, Leckman, Mercadante, Shavitt, Prado, Sada, et al., 2001), gender (Lensi, Cassano, Corredu & Ravagli, 1996), and co-morbidity with other disorders (Holzer, Goodman, McDougle, Baer, Boyarsky, Leckman et al., 1994; Leckman, Grice, Barr, deVries, Martin, Cohen et al., 1995; Rosario-Campos et al., 2001). To date, insufficient or inconsistent empirical evidence has hindered the acceptance of subgroups formed on these bases and observable (behavioural) symptoms are still the sole criteria for classification (Summerfield, Richter, Antony & Swinson, 1999). As such, OCD sufferers are generally assigned a descriptive primary symptom sub-type (e.g. ‘washer’, or ‘checker’) even though it is most common for patients to report at least one other symptom type (Rasmussen & Tsuang, 1986). Rasmussen and Tsuang reported that
59% of their sample of OCD patients (n = 44) identified more than one type of obsession, and 41% reported more than one type of compulsion. The most common obsessions reported in this group were related to contamination (55%), aggressive thoughts (50%), need for symmetry or exactness (36%), somatic fears (34%), and sexual thoughts (32%). The most common compulsive rituals were checking (80%), cleaning (46%), and counting (21%). These findings were replicated by Rasmussen and Eisen (1992) in a larger sample (n = 560). Other studies (e.g., Douglass, Moffitt, Dar, McGee & Silva, 1995; Summerfeldt et al., 1998; Valleni-Basile, Garrison, Jackson, Waller, et al., 1994) have also tended to support the higher prevalence of washing/cleaning and checking over other symptom types.

Several factor-analytic studies have been carried out to determine symptom subgroups. Leckman, Grice, Boardman, Zhang, Vitale, Bondi et al. (1997) reported the results of a large factor-analytic study of OC symptoms in a sample of OCD sufferers. The relationship among thirteen categories of symptoms using the Yale-Brown Obsessive-Compulsive Scale symptom checklist (YBOCS: Goodman, Price, Rasmussen, Mazure, Fleishman, Hill et al., 1989a) was explored using two independent samples (n = 208, n = 98) with both samples yielding exactly four symptom types (factors): (1) obsessions and checking, (2) symmetry and ordering, (3) cleanliness and washing, and (4) hoarding. These four factors accounted for 60% of the overall variance.

Summerfeldt et al. (1999) evaluated several models of symptom structure in a sample of 203 OCD sufferers. Of the four models examined (single factor, two-factor, three-
factor and four-factor models), adequate fit was found only for the four factor model specifying obsessions/checking, symmetry/ordering, contamination/cleaning, and hoarding at the category level. The four factors were based on à priori symptom categories taken from the Y-BOCS. When examined at the item or individual symptom level, the data did not fit the model. This result suggests that there is some degree of heterogeneity among the clusters or à priori factors. The four factor model derived in Summerfeldt et al.'s (1999) study supported the findings of Leckman et al. (1997) and also highlighted that the obsession/compulsion dichotomy is not supported by symptom ratings. The findings of both these studies also suggested that current symptom groupings based solely on overt, behavioural symptoms are inadequate although an alternative, satisfactory model has not yet been identified (Summerfeldt et al., 1999).

Aside from the large degree of symptom overlap, one of the main problems associated with symptom subgrouping is that it ignores the tendency for symptom constellations to change over time (Leckman et al., 1997; Rettew, Swedo, Leonard, Lenane & Rapoport, 1992).

In a recent longitudinal study of OCD sufferers and their symptoms over 6-months, one year, and two years, Mataix-Cols, Rauch, Baer, Eisen, Shera, Goodman et al. (2002) found that, for the most part, patients maintained their symptoms over time. Where symptoms did change however, they tended to change within symptom categories rather than across symptom categories.
Contrary to Mataix-Col et al.'s findings however, Rettew et al. (1992) found that none of the 73 OCD sufferers included in their sample maintained the same symptom constellation from base line to follow-up. They also found that the majority of patients in the OCD sample (85%) described having symptoms from more than one type of obsession or compulsion category. Interestingly, across the entire study period (average 7.9 years from base-line to follow-up, ranging from 2 to 16 years) patients reported an average of 3.0 ± 1.4 obsessions and 3.6 ± 1.6 compulsion categories over time. The following case example taken from Rettew et al. (1992) better demonstrates the overlap and changing nature of OCD symptoms across time.

B. C., a 16-year-old girl, developed symptoms at the age of 6 or 7 years that involved elaborate breathing rituals where she would have to breath in good thoughts and breath out bad thoughts. At age 11, after having seen the movie *The Exorcist*, these breathing rituals became more severe and were associated with obsessions of being possessed and needing to push out bad thoughts... she also became obsessed with being contaminated and would not eat or take medications, saying she saw black spots on them. She began to worry about getting rabies and AIDS and refused to touch her pets. In addition, she began to be obsessed with the fear of something bad happening to herself or her family if she went through a doorway. Soon after
this time she developed ritualistic walking patterns and counting compulsions, needing to count to a certain number on each foot. In school, her work had to be perfect and a new obsession emerged that her handwriting had to be just right. At home, her room and bed had to be ordered a certain way. At age 14, washing compulsions consisting of frequent handwashing and long showers of up to 45 minutes developed... She also began checking doors and lights repeatedly until she was ‘sure’ (p.1052).

Some of difference between the findings of the Mataix-Cols et al. (2002) study and the Rettew et al. (1992) study in that the former employed a sample of adults and the latter a sample of children and adolescents. Furthermore the duration of follow-up was significantly different between the two studies (range of 2-9 years). Overall however, a waxing and waning of symptom types appears to be a common trend among OCD patients, either within symptom subtype or across symptom subtypes (Mataix-Cols et al., 2002; Rasmussen & Eisen, 1992; Rettew et al., 1992; Stein, Forde, Anderson & Walker, 1997) making the categorisation of symptom types, and the application of a primary symptom category to describe patients presentations problematic. The overall picture of symptom progress and development is that of a “constantly evolving configuration” (Rettew et al., 1992, p. 1053) as illustrated by the above case example, with a large degree of overlap between categories and primary symptom types.
2.4 Epidemiology

The tendency for OCD sufferers to be secretive about their obsessive and compulsive problems (Bebbington, 1998; Rasmussen & Eisen, 1990; Starr, 1999) makes it difficult to gain a reliable estimate of prevalence. Sufferers can hide mental rituals and processes and to some extent, even compulsive behaviours can go undetected by others for many years. It has been considered that many sufferers are afraid to present themselves for treatment for their symptoms because they fear others will think them “crazy” or that they will be thought of as “defective” or “weird” (Newth & Rachman, 2001, p. 459). Estimates suggest that, on average, 10 (Moore, 2002) to 17 years (Starr, 1999) pass from the time symptoms first appear until the person presents for treatment or is diagnosed with OCD. Although OCD has been a recognised condition for a long time, it has been slow to be identified as a prevalent psychiatric condition. It was not until the National Institute of Mental Health in the United States undertook a large Epidemiological Catchment Area survey in 1983 (see Rasmussen & Eisen, 1991) that it became apparent that OCD was in fact more common than previously thought with a lifetime prevalence of 2.5%. These figures placed OCD as the fourth most common psychiatric disorder after depression, substance abuse and phobias (APA, 1994).

Weissman, Bland, Canino, Greenwald, Hwe, Lee et al., (1994) conducted a Cross National Collaborative Study over four different continents including seven epidemiological surveys examining the demographics and prevalence of OCD. The findings were remarkably consistent across the different sites. In the United States,
Canada and Puerto Rico the lifetime prevalence rate for OCD was approximately 2%. The rates were the same in Europe and New Zealand. In Korea, OCD prevalence was 1.9% and in Taiwan, 0.7%. With the exception of Taiwan where psychiatric disorders are generally low, OCD lifetime prevalence across the globe is approximately 2%.

Estimates of prevalence of OCD have gradually increased over the past twenty years. Reasons for this have been speculated upon and include the availability of more refined assessment tools, greater awareness of OCD and availability of treatments as well as changes to diagnostic criteria (Stoll, Tohen & Baldessarini 1992). One of the most recent prevalence studies (Stein et al., 1997) using DSM-IV diagnostic criteria was conducted in Canada. A sample of 2,261 respondents from the general community was included in the study. Results indicated that 3.1% of the sample met the DSM-IV criteria for obsessive-compulsive disorder with an estimated one-month prevalence rate of 0.6% with an additional 0.6% demonstrating sub clinical OCD.

Currently in Australia, OCD is estimated to affect 2%-3% of the population (Anxiety Disorders Foundation of Australia, 2000). These figures correspond with prevalence rates estimated elsewhere.

2.5 Demographic Characteristics of OCD

2.5.1 Gender

A summary of findings of gender distribution from several major epidemiological studies was compiled by Antony et al. (1998) and shows that there is a tendency for OCD to be slightly more prevalent among women than men, although not all estimates support this tendency. In the Epidemiological Catchment Area study
reported by Kanno, Golding, Sorenson, and Burnam (1988) gender was not found to be a significant predictor of OCD once other demographic variables (e.g., employment status, socio-economic status) were held constant. Most clinic-based samples of OCD also tend to show a greater frequency of females than males (Antony et al., 1998; Samuels & Nestadt, 1997). However, no conclusive differences can be inferred from these clinical samples as they might simply reflect the greater likelihood of females to seek out mental health services than males (Australian Bureau of Statistics, 1997; Booth & Owens, 2000; Goodwin, Koenen, Hellman, Guardino & Struening, 2002).

A number of studies have examined gender differences in the prevalence rates for particular types of obsessions and compulsions (Castle, Deale & Marks, 1995; Drummond, 1993; Lenci, Cassano, Corredu & Ravagli, 1996). Lenci et al. (1996) reported that more men than women experience obsessions of a sexual nature and also obsessions related to ordering and symmetry. Men were also reported to exhibit more “odd” rituals (examples not given by authors) whereas women tended to report more aggressive obsessions and more cleaning rituals. The finding that more women than men engage in washing and cleaning rituals has been supported by other research (Castle et al., 1995) leading to the suggestion that cultural factors may have a deterministic role in the development of symptom types.

2.5.2 Age of onset

There appears to be consistency among studies examining age of onset for OCD (Antony et al., 1998; Castle et al., 1995). Most studies have tended to find a
significant difference in age of onset for males and females with onset in males beginning earlier (Castle, et al., 1995; Minichiello, Baer, Jenike & Holland, 1990; Rasmussen & Tsuang, 1986; Samuels & Nestadt, 1997). Some studies have investigated possible factors that may contribute to this predominant pattern of differential age of onset for males and females with OCD. Neziroglu, Anemone, and Yaryura-Tobias (1992) found that the age of onset for women seems to differ for those with and without children. In their study, women without children tended to have an earlier onset of OCD. It might be that the presence of OC symptoms is a determining factor in women’s decision not to have children or, it might be that stress associated with childbirth and/or subsequent child raising, contributed to the onset of OCD among women with children (see section 5.1.4 on critical incidents and life events).

Other authors have suggested that age of onset may be related to differing aetiological factors (Noshirvani, Kasvikis, Marks, Tsakiris & Montiero (1991) such as earlier onset in males being possibly related to genetic factors (Samels & Nestadt, 1997) and later onset being related to triggering life events such as birth of a child or critical incidents (Lenzi et al., 1996; Maina, Albert, Bogetto, Vaschetta & Ravizza, 2000). Childhood onset of OCD is usually associated with greater severity (De Silva, Rachman & Seligman, 1977) and also with a poorer prognosis (Rasmussen & Tsuang, 1986). This finding is particularly the case in males. Furthermore, Minichiello et al. (1990) found that age of onset differed among subtypes of OCD, with individuals suffering from obsessions alone or from obsessions and cleaning rituals combined having an older age of onset while those who primarily engage in checking rituals
have the lowest age of onset. Rasmussen and Tsuang (1986) found a bimodal
distributions for age of onset with one peak at ages 12-14 and another peak between
ages 20-22. Table 2.1 presents a summary of findings from a range of studies that
have examined age of onset.

Table 2.1 Mean and Standard Deviation for Age of Onset in OCD

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>Females M (SD)</th>
<th>Males M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rasmussen and Tsuang (1986)</td>
<td>44</td>
<td>22.9 (12.6)</td>
<td>15.5 (5.4)</td>
</tr>
<tr>
<td>Rasmussen and Eisen (1990)</td>
<td>250</td>
<td>20.8 (n/a)</td>
<td>17.5 (n/a)</td>
</tr>
<tr>
<td><strong>Table 2.1 continued</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minichicillo, Bacr, Jenike, and Holland (1990)</td>
<td>138</td>
<td>24.6 (11.9)</td>
<td>19.8 (11.9)</td>
</tr>
<tr>
<td>Noshirvani, Kasvikis, Marks, Tsakiris and Montiero (1991)</td>
<td>307</td>
<td>24.0 (n/a)</td>
<td>21.0 (n/a)</td>
</tr>
<tr>
<td>Rasmussen and Eisen (1992)</td>
<td>560</td>
<td>22.0 (9.8)</td>
<td>19.5 (9.2)</td>
</tr>
<tr>
<td>Castle, Deale, and Marks (1995)</td>
<td>219</td>
<td>26.0 (n/a)</td>
<td>22.0 (n/a)</td>
</tr>
<tr>
<td>Antony, Downie and Swinson (1997)</td>
<td>56</td>
<td>23.54 (11.7)</td>
<td>19.56 (8.70)</td>
</tr>
</tbody>
</table>

*Note. Standard deviations were not available from some original studies. Data were not available for age of onset by OCD subtype*

2.5.3 Cross-cultural studies of OCD

OCD has been identified and described in many different cultures across the world
including Israel (Greenberg & Witztum, 1994), Bahrain (Shooka, Al-Haddad &
Raees, 1998), Egypt (Okasha, Saad, Khalil, Seif El Dawla & Yehia, 1994), Germany
(Grabe, Meyer, Hapke, Rumpf, Freyberger & Dilling, 2000), India (Khanna &
Channabasavanna, 1988), and North America (Karno et al., 1988). Information from
the Cross-National Collaborative Study (Wcismann et al., 1994) conducted across the
US, Canada, Puerto Rico, Germany, Taiwan, Korea, and New Zealand has suggested that there is little cross-cultural variability in the presentation or prevalence of OCD across both developed and developing countries equally.

While it may be the case that the main symptom sub-types can be recognised and identified across cultures, there is evidence to suggest the greater prevalence of particular subtypes within cultures where particular religious or societal norms may prevail. For instance, in a study conducted in Egypt (Okasha, et al., 1994) religious ruminations and sexual obsessions prevailed in a sample of 90 OCD patients accounting for 60% of the content of obsessions. The authors explained that “the religious nature of upbringing and education in Egypt, the emphasis on religious rituals, and the warding-off of blasphemous thoughts through repeated religious phrases... can explain the high prevalence of religious obsessions among our Egyptian sample, even if the subjects are not practicing their religious duties” (p. 194). Furthermore, the emphasis within Islamic culture and faith on cleanliness or purity is, according to Okasha et al. (1994), manifested in most of the compulsive rituals within this sample. Comparisons between the Christian and Muslim participants in their sample revealed that religious and sexual themes predominated as obsessive material in both groups. There were marked differences in rituals, such as cleaning and washing, checking, repeating, and ordering compulsions, with a greater frequency among Muslim participants reflecting the greater role of religious ritual in the Muslim faith and culture as compared with that of Egyptian Christians. These findings were echoed in a later study conducted in Bahrain (Shooka et al., 1998) a predominantly Muslim country, where religious faith is practiced and observed by the
vast majority of the population. Of a sample of fifty OCD patients, obsessions relating to religion and blasphemy were the most frequent (40%) and compulsions relating to washing and cleaning the most predominant (42%). Sexual obsessional content was also relatively common (32%) in this sample. Although these authors offer no explanation for the high incidence of sexual obsessions, they might also be reflective of cultural phenomena. Shooka et al. (1998) placed these results in the context of Bahraini culture highlighting further the role of social norms and moral codes in influencing the content and type of obsessions and compulsions among OCD sufferers.

Steketee, Quay and White (1991) found a group of OCD subjects to be more religious than patients with other anxiety disorders although, no particular type of religion was more prevalent in the OCD group. Higgins, Pollard, and Merkel (1997) compared patients with OCD, panic disorder and other non-anxiety psychiatric conditions and found the majority of patients in the OCD group reported religious conflict compared to the other groups. Their findings also suggested an association between Catholicism and OCD. Rasmussen and Tsuang (1986) found a relationship between factors of strictness and rigidity of upbringing and with religiosity that were associated with the development of OCD, rather than any particular denomination or faith. Similarly, Tek and Ulug (2001) reported that in their sample of 45 OCD sufferers, religion did not appear to be a determinant of the disorder and no relationship was found between OCD symptoms and religiosity. Greenberg and Witztum (1994) examined obsessions and rituals among a highly religious sample of OCD patients from an ultra-orthodox Jewish community in Jerusalem. They suggested that such a cultural setting is fertile
ground for the development of OCD given the important role of repetitious religious practices. However, both rabbis and suffers alike recognised the demarcation between the repetitive performance of normal religious rituals and psychopathological repetition or ritual. The authors concluded that despite the "meticulous observance of rituals, members of the ultra-orthodox community are able to identify themselves as suffering from excessive ritualizing" (p. 217).

It appears that sociocultural factors relating to religion and cultural practice do play a role in influencing the nature of OCD symptomatology and shaping the character of obsessional content however, there is limited evidence to suggest that religion exerts any effect in the genesis of OCD. More likely, aspects of a religious upbringing such as strict adherence to moral and religious codes and practices and rigidity may contribute to the type of obsession or compulsion in vulnerable individuals (Rasmussen & Tsuang, 1986). Of more relevance to the current thesis, which is being conducted using, a predominantly Anglo-Saxon sample of Protestant and Catholic background is the level of strictness, or over protection, that might be experienced also as a function of parental style (see section 5.4 for discussion on parental influences in the development of OCD).

2.5.4 Impact of OCD on functioning

The impact of OCD on functioning has been variously investigated (Hollander, 1997; Moore, 2002; Toro et al., 1992; Welkowitz et al., 2000). In a large-scale study (N = 701), Hollander (1997) found that 88% of OCD sufferers reported significant interference of occupational and social functioning as a result of their disorder.
Between 60%-70% of OCD sufferers in their sample reported “much” or “very much” interference in their ability to work, study, socialize, make friends, and in family relationships. On average, it was found that a person with OCD loses three full years of wages over a lifetime indicating the loss of earning potential (Hollander, 1997). High rates of comorbid depression also significantly contributed to reduce levels of life satisfaction and 92% of the sample also reported lowered levels of self-esteem. Thirteen percent of the sample had attempted suicide.

Hansson (2002) found that OCD sufferers experienced greater detriments of social, occupational and role functioning than the general population but less physical health problems, such as chronic pain, compared with depressed patients. Hansson also commented that little research has been conducted in to the impact of OCD on functioning.

Using data provided through clinical records and the case reports of 72 children and adolescents with a diagnosis of OCD, Toro et al. (1992) examined several areas of functioning including family relationships, social relationships and academic performance. According to information provided by parents of presenting patients, 60% of children with OCD related to their parents in a conflicting manner (where relationships were classified as either “good”, “average” or “conflicting” with conflicting being assessed as the percentage of conflicts between children and their parents). While this proportion appears high, it was not significantly different to that of other psychiatric disorders used in comparison. Parents also described the type of social relationships of their children who suffered from OCD. Compared with control
groups with other diagnoses, children with OCD demonstrated an absence of conflicting or aggressive relationships with non-parent adult peers and showed greater withdrawal. In examining relationships with similar aged peers, it was found that children with OCD tended to withdraw from social interaction with peers more than those without OCD. In terms of academic or school performance, the majority of children with OCD included in the sample displayed “poor” performance with about 60% demonstrating a decrease in performance during an episode of OCD. Together these results indicate significant social, familial and academic dysfunction coinciding with OCD. Clearly, it is important from research such as the current thesis to understand the factors that contribute to the onset and maintenance of the symptoms of OCD.

In an assessment of family distress and involvement in OCD patients and their problem behaviours, Amir, Freshman and Foa (2000) found that, although there was no relationship between the severity of OCD symptoms and family members’ depression and anxiety, there was a relationship between the degree to which family members accommodated and assisted OCD sufferers in their rituals and their own levels of depression. That is, the more that family members altered their routines to accommodate the rituals of OCD patients, the more depressed and anxious were the family members. Conversely, the more they resisted assisting patients, the more upset OCD patients became, presumably creating further distress in the family environment. These findings highlight the detrimental impact of OCD not only on the lives of sufferers but on their families as well. The negative impact of OCD on familial relationships is likely to impact on overall quality of life for OCD sufferers.
In addition to the impact of OCD on functioning, comorbid psychiatric problems also tend to increase the level of functional impairment (Welkowitz et al., 2000). A recent comorbidity study, and one of the largest, employing a sample of 5867 participants attending a national anxiety screening program (Welkowitz et al., 2000), examined the impact of OCD and comorbid anxiety problems on the daily living of OCD sufferers. Of all participants, a sample of 3212 participants who met the criteria for OCD were compared on measures of interfrencce to the activities of daily living with the remaining 2655 persons who did not meet the full criteria for OCD. It was found that the number of comorbid problems which were in addition to OCD symptoms, greatly impacted on daily living. The reason Welkowitz et al. offered for this was that the more anxiety problems individuals suffer, the more difficulty they have managing daily demands and completing tasks.

Chapter summary

While prevalence estimates across the various studies described in this chapter are varied and present an inconclusive picture, it is acknowledged that OCD is generally more prevalent than previously thought. OCD has been identified across several cultures and the worldwide prevalence appears to be largely consistent, between 2% and 3% although there is some suggestion that prevalence rates are lower in Taiwan. OCD is currently rated as the fourth most common psychiatric condition (APA, 1994). The onset of OCD tends to be in late adolescence and early adulthood with some evidence suggesting differential onset for males and females with males showing earlier onset than females. Comorbidity of OCD to other disorders has been
indicated with depression and other anxiety disorders most frequent comorbid diagnoses reported by OCD sufferers. Research by Toro et al. (1992) into relationships between parents and children with OCD, indicate that conflict often exists and that in relation to peer relations, children with OCD also experience difficulties and tend to withdraw from social interactions. The nature of parental style and experiences with peers will be further explored in this thesis. In sum, there is common understanding that to live with the endless cycle of obsessions thinking and repetitive rituals is debilitating and detrimental to one’s day-to-day functioning. This fact, coupled with the realisation that OCD is the fourth most common psychiatric condition has encouraged exploration into the aetiology, clinical profile, maintaining factors, and treatment of this complex disorder that will be discussed in the following sections.
CHAPTER 3

Contemporary Models of OCD

Despite several aetiological models of OCD, both biological and those posited by supporters of various psychological theories, there is no consensus on what causes OCD. In this chapter, the main aetiological theories will be reviewed, with a focus on cognitive-behavioural therapy (CBT) which will form the theoretical foundation of this thesis.

3.1 The psychodynamic approach to OCD

Early theorists such as Freud (1908: translated by Bunker, 1936) documented rich and perceptive descriptions of obsessional neurosis from their observations of their patients. Freud observed the significant phenomenology of guilt in people with OCD and this notion has been carried through into modern writings (Rachman & Shafran, 1998; Reynolds & Salkovskis, 1991; Savoie, 1996; Steketee, Quay & White, 1991). Freud’s original argument that intense feelings of guilt form the basis of ritualistic behaviours has been not been abandoned in current theories and in fact, it has been shown to have merit as borne out by recent empirical studies (Rachman & Shafran, 1999; Shafran, Watkins & Churman, 1996).

Freud (1913, translated by Bunker, 1936) also ventured a formulation of an obsessional personality type that he differentiated from those people with obsessional symptoms. He believed that a collection of features associated with the “anal erotic character” including obstinacy, parsimony, and orderliness predisposed the individual
to what he then termed 'obsessional neurosis'. In fact, these same traits have made their way into current nosology contributing to diagnostic criteria for Obsessive Compulsive Personality Disorder (APA, 1994). Despite such astute perceptions grounded in clinical observation, and the significant contributions that these early writings have made to current theorising, psychodynamic formulations of obsessive compulsive disorder suffer the same lack of coherence and evidence as for other disorders (Beech & Perigault, 1974). In the absence of proper data gathering and rigorous testing, attempts to identify the source of pathology in patients remains little more than unsubstantiated opinion. As such, Beech and Perigault commented that the observations made by Freud on the intricacies and paradoxes associated with aspects of the disorder outlived his attempts to explain them.

3.2 The biological basis of OCD

A neurophysiological basis to OCD has been advanced although the present findings are inconclusive (Cox, 1997; DeCosta, 1996; Hoehn-Saric & Greenberg, 1997; Insel, 1992; Purcell, Maruff, Kyrios, Pantelis, 1998; Samuels & Nestadt, 1997). The relative efficacy of selective serotonin reuptake inhibitors (SSRIs) over drugs that act on other neurotransmitters (Greenberg, Altemus & Murphy, 1997; Pigott & Seay, 1997) has been used to suggest some biological association between serotonin and obsessions, although the precise nature of this association is not clear (DeCosta, 1996). Furthermore, as the efficacy of SSRIs is the same in the treatment of OCD as for most other anxiety disorders, this lack of differentiated effect fails to indicate specific aetiology of OCD (Gross, Sasson, Choprs & Zohar, 1998).
Brain imaging techniques have highlighted increased activity in the frontal lobes and basal ganglia of individuals with OCD in some studies (Hoehn-Saric & Greenberg, 1997; Rappoport, 1991), although other studies have not found any significant differences between the brain activity of individuals with OCD and those without OCD (Cottraux & Gérard, 1998) rendering conclusions equivocal. Besides, observation of brain abnormalities is not sufficient to indicate specific aetiology, as these abnormalities may well be an artefact of OC symptoms (Insel, 1992). Larger samples of human brains, pre- and post-onset of specific disorders are required before one can begin to attribute causality.

Genetic studies have provided the strongest grounds for presuming a biological basis to OCD. One genetic study by Insel (1992) has shown that the family members of 22% of OCD sufferers also suffer from OCD or OC-like symptoms. However, more work in the area of twin-studies needs to be carried out before any firm conclusions of an inheritable component for OCD can be drawn, as not all studies to date have yielded consistent findings (Billet et al., 1998; Samuels & Ncestadt, 1997). Furthermore, there is some contrary evidence that suggests the possibility that genetics may not contribute directly to the development of OCD but instead, a genetic component might act to increase a person's vulnerability to certain environmental factors (Billet et al., 1998; Eysenck, 1967) which, in some people, may lead to the onset of OCD. This view has been supported by personality theorists (e.g., Eysenck, 1967). In the current thesis the focus will be on personality and early environmental factors, such as the origins of inflated responsibility, as predictors of subsequent inflated responsibility (see section 3.5) and OCD symptoms.
3.3 The diathesis-stress model of OCD

The diathesis-stress model is not linked to any one school of thought but rather combines bio-psycho-social factors to form a general aetiological theory applicable to many disorders. The model focuses on the interaction between biological predisposing factors such as genetic vulnerabilities, psychological aspects such as personality or the presence of certain cognitive schema (described below), and social or environmental factors such as culture and upbringing (Grossarth, Eysenck & Boyle, 1994).

The diatheses-stress model of OCD proposes that significant early events such as critical incidents or serious family discord, interact with other predisposing factors such as personality and genetics to result in psychopathology (Joiner, 1993; Rachman, 1976; Salkovskis, 1998). While this ‘catch all’ theory appears tenable, there is insufficient evidence in the OCD literature to suppose critical incidents or family discord are sufficient contributors to the development of the disorder, rather they may serve as a ‘trigger’ among people who are otherwise vulnerable. Critical incidents might also be implicated in the development of cognitive distortions related to OCD, rather than to OCD directly. This matter will be explored further in the current thesis. However, the notion of precisely what type of event can be considered ‘critical’ requires clarification particularly in relation to the development of OCD. This challenge will be taken up later in subsequent chapters as well as a review and analysis of the existing evidence supporting the role of critical life events (see section 5.2).
3.4 Learning theory and OCD

Learning theory has contributed significantly to current conceptualisations of OCD, and also to its treatment. Traditional learning theory (Pavlov, 1927) asserts that any conditioned stimulus can be paired with an aversive unconditioned response to become a conditioned stimulus. Just as phobias are understood to develop through the association of fear/anxiety to an object or stimulus (Menzies & Clarke, 1995), the behavioural theory of OCD posits that normal intrusive thoughts (discussed below) become associated through this classical conditioning process to anxiety (Rachman, 1976), which then fails to extinguish. Anxiety associated with the intrusive thought, image or memory continues unabated because the individual avoids situations where the feared stimulus is encountered. In the case of OCD, avoidance is achieved through ritualised behaviours such as washing, checking, counting or neutralisation (see section 3.6 for explanation) that prevent the natural decay of anxiety responses and maintain the association between the thought and the anxiety (Salkovskis, 1998).

Mowrer (1960) advanced a two-stage theory of fear and avoidance based on classical conditioning. In his theory, Mowrer maintained that compulsive behaviours were acquired through classical conditioning and maintained through operant conditioning mechanisms. Mowrer proposed that behaviours that reduce fear would be reinforced increasing the likelihood of those behaviours recurring.

Menzies and Clarke (1995) acknowledged that this model accounted for avoidance behaviour whilst accepting that the original acquisition of fear was due to classical
conditioning. However, Mowrer’s two-stage theory was found to be limited in its ability to account for the development of OCD and other anxiety-based disorders (Salkovskis, 1998), highlighting the need for inclusion of elements from other theories. Three significant criticisms of learning theory led to the exploration of other models to account for observations made through clinical practice and research with OCD patients. Behavioural treatment of OCD operates to extinguish fear and avoidance by exposing the person to the feared situation or object (e.g., dirt in an individual with contamination fears) and then preventing them from engaging in ritualised behaviours (e.g., washing). This practice known as exposure/response prevention has demonstrated efficacy (Franklin, Abramowitz, Levitt, Kozak & Foa, 2000; Greist, 1990) however, attrition rates from therapy of this nature are typically high and non-compliance with the treatment is common (Greist, 1990). Secondly, the two-stage model is unable to explain the acquisition of OCD as different from other anxiety disorders (Salkovskis, 1998). Thirdly, considering that obsessions are, by their very nature, cognitive problems driven by distorted thinking, an approach that recognises and incorporates the role of cognitions into its formulation seems appropriate. Finally, the results of a study conducted by Rachman and De Silva (1978) clearly demonstrated the relevance of cognitive theories of OCD that have revolutionised the conceptualisation of OC problems.

Rachman and De Silva (1978) found that 90% of a non-clinical sample reported experiencing intrusive thoughts of the same nature and severity as OCD sufferers. What this indicated to them was that intrusive thoughts, the “raw material of obsessions” (Rachman, 1997, p. 797), were not what differentiated non-sufferers from
obsessive-compulsive sufferers but rather, the way in which intrusive thoughts were interpreted. The findings of this single study, since replicated (Freeston, Ladouceur, Thibodeau & Gagnon, 1992; Freeston, Ladouceur, Thibodeau & Gagnon, 1991; Ladouceur, Freeston, Rhéaume, Dugas, Gagnon, Thibodeau & Fournier, 2000; Parkinson & Rachman, 1981; Salkovskis & Harrison, 1984) highlighted the need for a more comprehensive theory that could accommodate both behavioural and cognitive components in the understanding of OCD. In this thesis, behavioural learning and its association with OCD will be assessed via the impact of early critical incidents on inflated responsibility (see Rationale section 6.1). The cognitive components of perceptions of blame and responsibility from peers and family will also be explored in relation to the origins of inflated responsibility.

3.5 The cognitive theory of OCD

Cognitive theory (Beck, 1976; 1979) has provided some important insights into both the cognitive and the affective aspects of OCD, such as anxiety (Eysenck, 1992), beyond its overt behavioural components. The main tenets of cognitive theory state that 1) emotions result from appraisals of events, not from the event itself, 2) pre-existing cognitive structures such as belief systems and schemata influence appraisals, and 3) appraisal and emotional responses tend to have a reciprocal relationship (Beck, 1979). Beck’s cognitive theory asserts that certain cognitive structures called schemas play an important role in the development of anxiety disorders. Beck and Clark (1988) described schemas as cognitive structures that "guide the screening, encoding, organizing, storing and retrieving of information" (p. 24). Acquisition of schemas is believed to be via early socialisation processes from
interactions with family and peers. Schemas are also thought to develop from the occurrence of significant events such as early trauma that may serve to shape cognitions.

The function of schemas is to filter and/or direct attention to certain information and environmental stimuli. There is evidence to show that the anxious patient will attend to stimuli which present the possibility of threat (Beck & Emery, 1985; Broadbent & Broadbent, 1988; Eysenck, MacLeod & Matthews, 1987) and even ambiguous stimuli will often be interpreted according to this "threat" schema (Beck & Clark, 1988). It follows that the primary dysfunction in anxiety disordered individuals is their cognitive processing of information and environmental cues. Beck and Clark (1988) do, however, stress that while the pathology of anxiety resides in the presence of maladaptive schema, the causal role of schema in the development of anxiety disorders is limited. They proposed, "by possessing latent maladaptive schemas, some individuals evidence a cognitive vulnerability for developing anxiety or depression" (p. 24) rather than the schemas leading directly to the development of anxiety disorders.

It is the task of cognitive psychologists to identify cognitive distortions, or maladaptive schema, that perpetuate and contribute to psychopathology. This approach to the study and treatment of OCD has been prominent in the research literature in recent years with several cognitive distortions being identified in OCD (e.g. Frost & Steketee, 1997; Salkovskis, 1985; 1989; 1997; 1999; Steketee, Frost & Cohen, 1998). Among them, is thought-action fusion (TAF) (Rachman & Shafran,
1999; Shafran, Thordarson & Rachman, 1996), a cognitive distortion found in OCD sufferers and understood to be related to OCD via the interpretation of intrusive thoughts (Smári & Hólmsteinsson, 2001).

TAF refers to the phenomenon in which the person believes that having a forbidden thought is as bad as carrying out the forbidden act (Rachman, 1993). TAF also refers to the belief of many OC individuals that having an intrusive thought will increase the likelihood of a negative event (Amir et al., 2001; Rachman & Shafran, 1999). In a recent study using a sample of undergraduate students, Coles, Mennin, and Heimberg (2001) found that a measure of TAF was able to distinguish between obsessive features and worry as associated with Generalised Anxiety Disorder. It was determined that TAF was strongly related to OCD after controlling for generalised worry.

Another cognitive bias identified in OCD sufferers is their sense of inflated responsibility which refers to an exaggerated sense of personal responsibility for outcomes and events (Rachman, 1993; Rachman & Shafran, 1999; Salkovskis, 1985; 1989; 1999). The importance of inflated responsibility in cognitive-behavioural formulations of OCD has been underscored by researchers in recent times. Inflated responsibility is understood to be a key factor in understanding the cycle of obsessions and compulsions and this concept has been translated further into the treatment of symptoms of OCD (Salkovskis, 1999). The next section highlights the role of inflated responsibility in OCD within the CBT framework.
3.6 The cycle of obsessions and compulsions: The cognitive-behavioural formulation of OCD

The cognitive-behavioural formulation of OCD begins with the observation that intrusive thoughts in the normal population are indistinguishable from obsessional thoughts in terms of their content and frequency (Ladouceur et al., 2000; Rachman & De Silva, 1978; Salkovskis & Harrison, 1984). Although, there has been suggestion by Wroe, Salkovskis and Richards (2000) that OCD sufferers only experience intrusive thoughts more frequently in specific situations, rather than generally, and these situations are likely to be particular to the individual. The key, then, to understanding obsessional disorders is to be found in the way intrusions are interpreted, how they are associated with compulsions and become more frequent (Salkovskis, 1998). Seminal work by Rachman (1997, 1998) on the cognitive theory of obsessions highlights the role of the over-importance attached to intrusive thoughts in the generation and maintenance of obsessions. He asserts that obsessions are caused by misinterpretations of the significance of one's thoughts (i.e. over-importance of thoughts, images, impulses) and that the obsessions will reduce when the misinterpretation of thoughts is addressed. Recent research by Forrester, Wilson, and Salkovskis (2002) has indicated that the occurrence of intrusive thoughts modifies reactions to otherwise ambiguous situations and leads to anxiety and to the need to neutralise (see below for explanation) or ritualise. That is to say, in an otherwise neutral scenario such as, lending a kettle to a friend, the presence of a negative intrusive thought, such as "the kettle's cord might be frayed and my friend could be electrocuted" is more likely to provoke an anxious response in both OCD sufferers and non-sufferers than if an intrusive thought had not occurred. Therefore,
anxiety develops in response to intrusive thoughts when they are automatically interpreted in negative terms of, for example, guilt, blame and responsibility for outcomes (Rachman, Shafran, Mitchell, Trant & Teachman, 1996; Roper & Rachman, 1976; Roper, Rachman & Hodgson, 1973; Salkovskis, 1985; 1989). Beck (1976) termed these spontaneous interpretations ‘negative automatic thoughts’ which lead the sufferer to engage in some sort of action to reduce the sense of anxiety, responsibility, or guilt.

Rachman (1998) elaborates on the cognitive theory of obsessions by providing explanation for the frequency of obsession and their persistence. He asserts that when a person catastrophically interprets the significance of an intrusive thought, a range of otherwise neutral stimuli are converted into potentially threatening stimuli. He offers the example that “[when] a person catastrophically misinterprets his unwanted thoughts about harming other people as signifying that he is potentially dangerous, then a range of formerly neutral stimuli are turned into potential threats (e.g. sharp objects are transformed into potential weapons)” (p. 386). According to Rachman (1998) this pattern of catastrophic misinterpretation of intrusive thoughts provokes the frequent recurrence of obsessions. Furthermore, Rachman (1998) states that the obsessions persist as long as the misinterpretation persists and forms of avoidance are employed such as thought suppression or neutralisation (see below for explanation) (Rachman, 1998).

Cognitive-behavioural theory of OCD posits that compulsive acts or rituals are both learned and voluntary responses to intrusive thoughts (Salkovskis, 1985; 1989).
Compulsions can be either behavioural, such as washing or checking; or mental, such as counting or repeating a word or line but both have the functional purpose of averting danger or harm, associated with an intrusive thought (Rachman, Shafran, Mitchell, Trant & Teachman, 1996). However, among OCD sufferers, there is a small subset of individuals who do not experience compulsions but who experience obsessions alone (Freeston, Léger & Ladouceur, 2001). Freeston and Ladouceur (1999) estimated that 20% of all OCD sufferers experience obsessions without compulsions and they have outlined a cognitive model that can accommodate this phenomenon.

They suggested, in keeping with the CBT model of OCD presented in section 3.6, that intrusive thoughts and/or obsessions are triggered by either internal (e.g., mood, memories, other thoughts) or external (e.g., situations, events, information) cues. The individual then attaches particular meaning to the intrusive thought and also to its occurrence in terms of its importance, its meaning and its consequences. Typically, rituals are acts aimed at reducing anxiety associated with these interpretations. Where overt behavioural rituals do not exist, it has often been thought ritualisation still takes place but in the form of covert or mental rituals. Rachman (1976) proposed the notion of “neutralisation” as “attempts at putting things right” which has been expanded by Salkovskis (1989) to mean: “voluntarily initiated activity which is intended to have the effect of reducing the perceived responsibility” (p. 678). To illustrate, patients who experience recurrent and horrific images of harming their mother may try to cancel or ‘neutralise’ the effects of the intrusive thought by engaging in repetitive counting or other mental rituals such as imagining a counter image of the mother safe
and unharmed. By doing this, they attempt to relieve the sense of responsibility associated with having the intrusive thought, and also anxiety associated with the content of the intrusive thought. In support of this supposition, Salkovskis, Westbrook, Davis, Jeavons, and Gledhill (1997) found that in a sample of non-OCD participants, people who were prevented from neutralising after invoking an intrusive thought showed significantly more discomfort relative to participants in the control condition.

Neutralisation is usually covert (mental) and differs from behavioural rituals in that checking is usually an attempt to avert harm whilst neutralisation is an attempt to undo harm (Rachman, Shafran, Mitchell, Trant & Teachman, 1996). Neutralisation differs also from thought suppression or thought stopping in that it is not an attempt to block or stop an intrusive thought but rather to remove the discomfort associated with the thought. Neutralisation then can be seen as an attempt to put things right and avert the possibility of being blamed for negative outcomes by engaging in covert rituals designed to cancel out the effects of the intrusion.

The concept of neutralisation as an attempt to ‘put things right’ is supported with the experimental evidence that neutralisation operates in the same manner as behavioural compulsions in that they both serve to reduce anxiety following an intrusive thought (Rachman et al., 1996). The functional link between neutralisation and/or overt rituals and the maintenance of OCD has been further demonstrated in a series of experiments in which OCD sufferers with contamination fears were asked to contaminate themselves (Hodgson & Rachman, 1972). Hodgson and Rachman demonstrated that,
as predicted, washing was associated with anxiety reduction. Further studies were conducted to replicate and extend these findings (Roper & Rachman, 1976; Roper, Rachman & Hodgson, 1973). The culmination of these findings led to the conclusion that compulsive acts serve as an anxiety reduction strategy. However, compulsive acts and neutralisation also prevent the possibility of demonstrating that a negative outcome would not necessarily arise from the failure to engage in rituals. In this manner, neutralisation and compulsions operate in the same manner as phobic avoidance leading to an increase in the frequency of intrusive thoughts and the discomfort associated with them thereby perpetuating the cycle of obsessions and compulsions (Rachman et al., 1996; Salkovskis, 1999; Salkovskis et al., 1997). Furthermore, the notion of neutralisation can be easily accommodated into a cognitive-behavioural framework and can help to explain those cases whereby obsessions are present without corresponding compulsions.

*Chapter summary*

In this chapter contemporary models of OCD were outlined with particular focus given to the cognitive-behavioural formulation of OCD which will underpin this thesis. The psychodynamic model of OCD was outlined however, a lack of evidence reduces the relevance of this theory in the discussion of the aetiology of OCD. The biological model of OCD includes neurophysiological and genetic origins of OCD. Overall, findings from both genetic and brain imaging studies have been equivocal limiting firm conclusions as to their contribution in the development of OCD. Rather than a direct relationship between genetics and OCD, it has been suggested by Eysenck (1967) and others (e.g., Billet et al., 1998; Gray, 1970) that genetics may
increase a person's vulnerability to developing OCD via personality. Personality then stands as a predisposing factor to the development of OCD when combined with environmental factors such as early environment and critical incidents. The contribution of Eysenckian dimensions of neuroticism and psychoticism to OCD and to inflated responsibility will be explored in the current thesis, together with the influence of parental aspects and the occurrence of critical incidents. The CBT model of OCD holds that obsessions and compulsions develop from interpretations of events in terms of responsibility for harm and its avoidance. The concept of inflated responsibility and its role in the aetiology and maintenance of OCD has been promoted over several years and it is discussed in the next chapter.
CHAPTER 4
Inflated Responsibility and OCD

4.1 The concept of inflated responsibility

Rachman (1993) observed that when an OCD patient first entered hospital, many of the compulsive symptoms decreased significantly or were altogether absent for a period after which the symptoms returned. The explanation for this, he suggested was that when "the obsessional subject is divested wholly or partly of responsibility for the act [by virtue of being a patient in the care of others] he or she experiences little discomfort" (p. 177). Based on Rachman's observations, Salkovskis (1985) proposed that OCD sufferers hold inflated responsibility beliefs that contribute to the need to neutralise or to engage in compulsive ritual as a way of preventing or cancelling the effects of harm or danger. By carrying out rituals, OCD sufferers would reduce the strong sense of personal responsibility and the possibility of blame for negative outcomes (Salkovskis, 1985).

In order to examine empirically the role of responsibility in relation to OCD, an operational definition was required to promote a consensual understanding of the concept. Salkovskis and colleagues (1992) proposed such an operational definition of inflated responsibility and was re-defined by the Obsessive Compulsive Cognitions Working Group (1997) as "the belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes" (p. 677). The essence of this definition is that people with OCD may believe that they are, or may come to be,
responsible for causing or failing to prevent harm to themselves or to others
(Salkovskis, 1998).

The association between inflated responsibility beliefs and OCD has been examined both experimentally (Lopatka & Rachman, 1995) and in studies using self-report questionnaires (Freeston, Ladouceur, Gagnon & Thibodeau, 1993). Freeston et al. demonstrated that patients with OCD endorse more beliefs related to responsibility than a group of matched controls. Freeston et al. (1992) found that a sense of responsibility was a significant, albeit modest, predictor $r = .28$ ($p < 0.01$) of self-reported OC symptoms in a sample of university students. In the same study, responsibility was also found to be the strongest predictor of overt (behavioural) and covert (cognitive) neutralisation $r = 0.30$ ($p < 0.001$). In another study, Rhéaume, Freeston, Dugas, Letarte and Ladouceur (1995) found that two measures of responsibility that is, beliefs about responsibility and perceived responsibility, correlated moderately with obsessive-compulsive symptoms $r = 0.59$, $p < 0.01$; $r = 0.46$, $p = < 0.01$, respectively. They found that the two measures of responsibility together accounted for 37.7% of variance in scores on obsessive-compulsive symptoms whereas a measure of perfectionism, a competing variable that has also been associated with OCD (Rhéaume, Ladouceur & Freeston, 2000; Shafran & Mansell, 2001), accounted for only 5.4% of the variance in scores for OCD symptoms.

Experimental investigations have concurred with psychometric studies in establishing the role of inflated responsibility in OCD. In the first study of its kind, Lopatka and
Rachman (1995) successfully manipulated responsibility in a sample of 30 OCD sufferers. They hypothesised that perceived responsibility would have a direct effect on the need to check. That is, an increase in perceived responsibility would result in a corresponding increase in the need to check, and that a decrease in perceived responsibility would be followed by a decrease in checking behaviour. All participants were exposed to their feared stimulus under three experimental conditions: high responsibility, low responsibility, and the control condition with no change in the level of responsibility. Responsibility was manipulated using contracts whereby the experimenter either assumed complete responsibility for any potential negative outcome following exposure to the feared stimulus (low responsibility) or else the participant assumed all responsibility for any potential negative outcomes (high responsibility). As predicted, the low responsibility group showed a significant decrease in both the level of distress following exposure and also the urge to check, compared with base-line self-ratings. Increased responsibility was followed by a corresponding increase in distress and urge to check although not to a level of statistical significance.

Following on from this finding, Ladoucuer et al. (1995) manipulated responsibility in two analogue studies. Although the first study yielded inconclusive results, the results of the second study were significant. Participants were asked to colour-code capsules that were to be exported to a developing nation experiencing a widespread virus. In the low responsibility condition, participants were told that the task was merely a practice before the real study and therefore no individual results would be analysed. In the high responsibility condition, participants were told that the research group had
been mandated by a pharmaceutical company to export medications to poor, developing nations where literacy was low therefore requiring a colour-coding system for safer distribution. Participants in this condition were told that their results in classifying capsules could directly influence the administration of medications and it was therefore extremely important that they were accurate. As predicted, those in the high responsibility condition showed significantly more hesitations and checking behaviours than those in the low responsibility condition. Arguably, given the stated rationale behind this exercise it would be common for most people to feel the onus of responsibility and to behave more cautiously.

Even so, Shafran (1997) successfully manipulated the responsibility for threat in another sample of 36 obsessional patients. The experiment was carried out in vivo with patients who had contamination fears and who were asked to touch, for example, the toilet seat. Responsibility was manipulated by the presence or absence of the experimenter. Participants were then entered into one of two conditions: high (exposure plus response prevention alone) or low responsibility (exposure plus response prevention with the experimenter). In the high responsibility condition, she found that the urge to neutralise, discomfort and the probability of threat were significantly higher than in the low responsibility condition. The results of this experiment carried out in vivo added further empirical support to the concept and importance of inflated responsibility in OCD. However, it must also be noted that perceived responsibility for negative outcome and threat were both affected by the manipulation of responsibility and therefore it is unclear which variable was responsible for the change in the urge to check and the corresponding discomfort. The
confounding effect of responsibility and danger expectancies is a point that has been made by others (Menzies, Harris, Cumming & Einstein, 2000).

Using the definition of inflated responsibility validated by Rhéaume et al. (1995), a recent study investigated the link between responsibility beliefs and attitudes and clinical symptoms of OCD (Salkovskis et al., 2000). In that study, participants were assessed according to their assumptions relating to responsibility which were defined as more general beliefs, as opposed to interpretations of specific events, and which were then related to the tendency to assume responsibility for outcomes. Responsibility appraisals of specific situations were also assessed and were thought to be more likely to be related to the interpretation of intrusive thoughts (Salkovskis et al., 2000). The results of the study were consistent with cognitive theory suggesting that people with OCD make appraisals of intrusive thoughts in terms of responsibility thus demonstrating the particular cognitive bias of inflated responsibility. Also, it was found that OC patients were more likely to endorse general responsibility beliefs and assumptions than non-obsessive patients suggesting the specific role of responsibility in OCD compared to other anxiety disordered patients and normal controls (Salkovskis et al., 2000).

4.2 The role of responsibility in the treatment of OCD

The integration of findings from studies into inflated responsibility show positive implications for treatment as recent attempts to address this particular cognitive bias in the clinical setting have been shown to be useful in reducing OC symptoms (Ladouceur et al., 1996). Although the numbers of studies that have explored the role
of inflated responsibility in treatment of OCD are few, the evidence suggests that finding ways to target and reduce inflated responsibility beliefs can have positive effects. These studies are presented in the following section.

4.2.1 Identifying and self-monitoring responsibility beliefs and appraisals

As inflated responsibility is demonstrated to be important in the treatment of OCD, it is necessary firstly for responsibility beliefs to be identified in OCD patients. Salkovskis, Wroe, Gledhill, Morrison, Forrester, Richards et al. (2000) have recently provided a scale to assess the presence of responsibility beliefs and appraisals in OCD patients which can be used in the assessment phase to help identify inflated responsibility. Example of items include: “I could be responsible for serious harm” and “If I don’t act when I foresee danger, then I am to blame for any consequences if it happens”. Other cognitive distortions, such as the over-estimation of danger, are identified and confronted by the therapist in the course of treatment. In fact Jones and Menzies (1998) have argued that the focus of cognitive therapy should be the reduction of danger-related expectancies. It has been found, however, that although the chance of catastrophe might be perceived by the patient as very low, a number of OCD patients still want to perform their rituals if the consequences of not ritualising seem to them too unbearable to take the chance of stopping (Rachman & Hodgson, 1977; Salkovskis, 1989; Van Oppen & Arntz, 1994). Here the concept of inflated responsibility is integral to the understanding of OCD, as it is the inflated sense of personal responsibility that appears to motivate the patient to engage in rituals and neutralising (Rachman et al., 1996), rather than the probability of threat.
Two aspects of responsibility need to be addressed by the therapist. Firstly, is whether the patient overestimates the amount of personal responsibility (Van Oppen & Arntz, 1994), for example, “If my father is hurt in an accident it will all be because of me”. And secondly, whether the patient overestimates the perceived consequences of having been responsible (Van Oppen & Arntz, 1994). For example “If I don’t clean I will pass on contamination to my son who will become sick and die or at least become permanently disabled”. Van Oppen and Arntz (1994) suggested that clarification of these two aspects of inflated responsibility can help patients, as well as clinicians understand further the contribution of responsibility beliefs to their thinking in targeting specific responsibility beliefs.

Once responsibility beliefs have been identified, it is important for the clinician to establish an awareness of the types of situations where the patient takes excessive responsibility (Ladouceur et al., 1996; Salkovskis et al., 1998). Promoting awareness of responsibility situations is achieved through self-monitoring techniques. Freeston et al. (1996) recommended that emotional cues such as feeling guilty or uncomfortable about something help the client to detect excessive responsibility in a situation and the clinical aim is to assist clients in the detailed identification and self-monitoring of obsessional thoughts in order to gain awareness of their appraisals of these thoughts (Freeston et al., 1996; Ladouceur et al., 1996; Salkovskis et al., 1998). Self-monitoring and awareness of obsessions and appraisals are combined with exercises designed to help patients to modify their responsibility beliefs as the situation occurs (Freeston et al., 1996). For example, when touching the toilet cistern or touching a door handle in a public place patients would be asked to reflect on how
they feel at that moment and to consider what would happen if they did not wash afterwards, that is, what would the consequences be, how bad would that be, and is this the only possible outcome?

According to Salkovskis (1999), it is also important during the initial stages of treatment for therapists to try and normalise the occurrence of intrusive thoughts. The therapist needs to explain to patients that most people experience intrusive thoughts and the fact that they experience intrusive thoughts that seem particularly aversive does not make them different from the majority of the population. He also suggested that what makes the intrusive thoughts more frequent and more intense, and what leads to their need to neutralise, is the way in which OCD sufferers interpret the intrusive thoughts and the importance they attach to their occurrence. Strategies for dealing with this initial phase of treatment have been detailed by Salkovskis (1999). Salkovskis also suggested that therapists need to explain to patients that trying to avoid a certain mental image or trying not to think a certain thought usually means that they will indeed think that thought more frequently than they would otherwise. Clearly, an increase in intrusive thoughts leads to an increase in anxiety for the OCD sufferer and increase in the urge to ritualise or neutralise. Of course, just because patients are aware of the process of intrusive thoughts and their cognitive and behavioural consequences, does not mean that they can simply stop ritualising. Often a more direct modification of responsibility appraisals is required in order to move forward in treatment and these are discussed below.
4.2.2 Techniques for challenging inflated responsibility beliefs

In keeping with traditional cognitive-behavioural treatment approaches such as those of Beck (1976) and Ellis (1994), erroneous appraisals of events, including obsessions and intrusive thoughts, are challenged and then replaced with more balanced or rational alternative appraisals. Salkovskis (1999) suggested that the possibilities to be discussed with the client are that 1) the intrusive thought might mean that they are at risk of committing a crime, an act of violence, of being negligent and causing harm, or 2), it could be that they are individuals who are worried about such harm and that their problems are coming from this particular anxiety and concern, rather than from any actual reality of causing harm.

Another valuable way to tackle inflated responsibility beliefs, suggested by Van Oppen and Arntz (1994), is through the use of the pie-chart technique. They argued that this technique offers a visual representation of the patient’s cognitive bias towards inflated personal responsibility for harm. With this technique, all factors contributing to the patient’s perceived catastrophic event are identified and listed. Van Oppen and Arntz explained that after a circle or “pie” is drawn, the patient fills in pieces of the pie, dividing it according to how much a factor contributes to the negative outcome. This process might include factors that could contribute to a road accident such as poor weather conditions, other drivers, the time of day, and presence of pedestrians on the road. The patient’s own contribution to the event should be drawn last. Van Oppen and Arntz suggested that this visual aid can help to challenge over-estimation of responsibility beliefs when the patient sees that their own contribution is relatively small. The example is given of a nurse who believed that if
she did not wash repeatedly she would pass on herpes to her children and then meningitis, which would lead to their death. By being able to focus on the other factors that would contribute to the contamination of her children with herpes, she was able to see that her own contribution to her children becoming ill with either of these diseases was relatively small compared with other possible contributing factors. She did not actually have herpes herself but feared that she might at some point contract it on the ward and then infect her children.

According to Van Oppen and Arntz (1994), patients can also be asked to consider whether doing the reverse of their compulsions could bring about an event. For example, if they wanted to harm their baby, could they do so by not washing or if they wanted to cause a car accident could they achieve this by not counting and would this be a good and effective way of achieving this? There may be times when absolute terms such as this need to be avoided as there is often a degree of reality associated with obsessional fears as with the example of the nurse. While the notion that she might pass on some sort of virus to her children is not impossible, it is improbable. The therapist needs to be aware that however remote, there is a small probability that this situation or one similar could take place. It might seem that a discussion of probability might be both informative and reassuring to OCD patients yet this is not the reality as often the consequences seem so dire to the patient that to fail to act to offset danger is too much to contemplate (Rachman & Hodgson, 1977; Salkovskis, 1989; Van Oppen & Arntz, 1994).
A further technique, to challenge the over-estimation of the perceived consequences of having been responsible, the double-standard technique can be effective (Van Oppen & Arntz, 1994). In the double-standard procedure the therapist asks the patient whether they would find someone else guilty if the event happened to the other person. The patient is then asked to compare this verdict with the case when the feared and perceived catastrophe happens to them. Invariably, OCD sufferers do not apply the same standards to others as they do to themselves. This double-standard technique can be used effectively (Van Oppen & Arntz, 1994) to challenge catastrophic estimations of consequence and to challenge negative self-appraisals of guilt, blame and responsibility.

4.2.3 Behavioural interventions to accompany cognitive restructuring

Behavioural experiments can be used to test out the empirical basis of the consequences of being responsible, as illustrated by the example provided by Van Oppen and Arntz (1994) of a patient with cleaning rituals who thought someone might die if her house were unclean. This belief was something that could be tested if she agreed not to clean for several days. Behavioural experiments are an important component of the treatment of OCD and for challenging inflated responsibility. Assurances from the therapist that "nothing bad will happen" are often not sufficient and only serve to reinforce assurance seeking in OCD patients, which, in itself, is a form of ritualising. Aside from which, therapists are not able to guarantee that misfortunes will not occur.
It is often difficult to get a patient to adhere to behavioural programs. When this is the case, the transferral of responsibility for outcomes and consequences from the patient to the therapist can be useful as a way of facilitating compliance with behavioural tasks, but this transferral best be conditional. The experimental manipulation of responsibility demonstrated by Lopatka and Rachman (1995) and Shafran (1999) indicated that responsibility can be transferred to the therapist to alleviate discomfort and urge to neutralise. Some patients will agree to a brief transferral of responsibility to the therapist for a specific, circumscribed purpose. For example, the patient may agree to transfer the responsibility for a particular action, say using the gas stove, on the understanding that it leaves unaltered the patient's responsibility for related actions. Sometimes, patients are unable to agree to such a transfer but will agree to share some portion of the responsibility with the therapist. This sharing or limited transfer of responsibility often produces significant short-term changes in behaviour. Current CBT treatment manuals for OCD caution strongly against the involvement of family members in the carrying out of rituals of OCD patients (Foà & Wilson, 1991; Steketee, 1993), although a recent study recommends the involvement of family members in behaviourally-based treatment (Grunes, Neziroglu & McKay, 2001). Reliance and the transferral of responsibility for completing rituals to other members can serve to reinforce the need to carry out rituals and can also become an encumbrance for families causing further discord and distress in an already overburdened family. Even when the transferral of responsibility does involve the therapist, it should only be used temporarily during which time thoughts, behaviours and reactions can be monitored and compared to a similar period when the responsibility is transferred back to the patient. This exercise can be used to
demonstrate to patients the role of responsibility appraisal in their thoughts and
behaviours. It should not be relied on or over-used as a mechanism for reducing
compulsions as it does not address the underlying cognitions and therefore cannot
lead to long lasting gains.

Some patients are unwilling or unable to share or transfer responsibility and resist it
totally. However, in those cases where it is possible to share or transfer responsibility,
this transfer can be put to effective therapeutic use enabling the patient and therapist
to gain increasing control of the abnormal behaviour. When a lasting reduction of the
inflated responsibility is achieved and the abnormal behaviour weakened or
eliminated, substantial long-term relief follows.

Behavioural treatments usually accompany cognitive restructuring as outlined in the
above section. Exposure/response prevention is the natural parallel component to
cognitive modifications. It is expected that belief changes will provide the basis for
subsequent behaviour modifications. Do the cognitive components of treatment add
anything over and above exposure/response prevention? Previous experimental
manipulations of responsibility (Lopatka & Rachman, 1995; Shafran, 1997)
demonstrated corresponding changes in anxiety and in the urge to neutralise
following the reduction of responsibility via the presence of the therapist. These
successful experiments gave the first significant indication that addressing inflated
responsibility perceptions could have clinical implications for the treatment of OCD.
4.2.4 Outcome studies for cognitive restructuring of responsibility beliefs

The first controlled study of the efficacy of cognitive therapy compared to exposure in vivo with response prevention (Van Oppen, Haan, Van Balkom, Spinhoven, Hoogduin & Van Dyck, 1995) found that while both approaches led to a statistically significant improvement in a sample of 72 OCD patients, significantly more patients from the cognitive treatment group were rated as 'recovered' compared to the exposure/response prevention group. Multivariate analyses indicated that cognitive treatments were more effective than exposure in vivo.

In a more recent treatment outcome study by Ladouceur et al. (1996), inflated responsibility in particular was targeted in cognitive therapy without the application of exposure/response prevention. Of four patients whose major complaint was checking rituals, all reported a clinically significant decrease in interference caused by rituals, a 52-100% decrease in OC symptoms as measured by the Y-BOCS, and a decrease in perceived responsibility beliefs.

Freeston, Léger, and Ladouceur (2001) recently reported results from a small sample (N = 6) clinical study of patients with obsessive thoughts without compulsions in which cognitive therapy was applied. The cognitively-based treatment targeted obsessions via education about the CBT account of obsessions, increasing awareness of appraisal of intrusions, and correction of faulty appraisals such as the over importance of thoughts, inflated responsibility, perfectionism and control, overestimation of threat, and the consequences of anxiety. Significant reductions in
OCD symptomatology from baseline to post-test and from post-test to 6- and 12-month follow-up were observed in all six participants assessed using the Y-BOCS.

Williams, Salkovskis, Forrester, and Allsop (2002) treated six adolescent sufferers of OCD using cognitive-behaviour therapy that included procedures aimed at helping the patient reappraise responsibility interpretations. The treatment also aimed to educate the patient on the CBT understanding of their problem, to normalise intrusive thoughts, and to help the patient to examine the basis of their obsessional fears. It was found that during treatment, appraisals of responsibility changed at the same rate that changes in symptoms occurred suggesting that cognitive change achieved in part through the targeting of inflated responsibility beliefs, is associated with a parallel improvement in overall symptom levels. That the effect was not in the opposite direction is inferred from the treatment target, that is, cognitions and obsessions.

Preliminary studies into the effectiveness of targeting inflated responsibility beliefs and appraisals in the treatment of OCD sufferers have been encouraging. Specific techniques for targeting inflated responsibility appraisals are still being explored and investigated. Cognitive-behavioural treatments have been shown to be the most effective treatment of OCD in combination with pharmacotherapy (Franklin, Abramowitz, Bux, Zoellner & Feeny, 2002; Franklin & Foa, 1998) and it seems that the incorporation of specific strategies to reduce inflated responsibility may prove to be of additional benefit. It has been argued by Menzies, Harris, Cumming and Einstein (2000) however, that inflated responsibility beliefs and exaggerated danger expectancies are intrinsically linked such that experimental methods that have aimed
to manipulate responsibility may have also altered danger expectancies, confusing causality. Menzies et al. proposed that the more precise role of inflated responsibility in OCD is an indirect one in that it affects the estimation of outcome severity, as opposed to probability of risk, which in turn is more closely related to symptomatology. This proposition is contentious and currently, on balance, a greater body of research exists to support the role of inflated responsibility in maintaining OCD, as well as the benefits of targeting inflated responsibility in treatment.

Chapter summary

The concept of inflated responsibility developed by Salkovskis (1985) following the observation made by Rachman in the early 1970's that on entering hospital, many OCD patients experience a decrease in their symptoms, particularly checking compulsions, when divested of responsibility while under the care of others. In support of this hypothesis, several researchers established the link between inflated responsibility and OCD in experimental (e.g., Shafran, 1997) and psychometric studies (e.g., Freeston et al., 1993; Ladouceur et al. (1995), Lopatka and Rachman (1995), and Shafran (1997) successfully manipulated responsibility in experimental settings, demonstrating a corresponding decrease in anxiety and urge to check in conditions where personal responsibility was low. These empirical findings encouraged attempts to target inflated responsibility in treatment of OCD with demonstrated efficacy (Ladouceur et al., 1996; Van Oppen et al., 1995). In so far as treatment is concerned, CBT does not necessitate nor encourage exploration of specific causes to the development of symptomatology in individuals. Nonetheless, the identification of actiological factors to the development of inflated responsibility
may provide a meaningful and useful way to identify individuals who may be at
greater risk for developing particular cognitions important in OCD. Possible origins
of inflated responsibility beliefs are discussed in the next chapter.
CHAPTER FIVE

The origins of inflated responsibility in OCD

The concept of inflated responsibility, first proposed by Salkovskis (1985), together with its pivotal role in the maintenance of obsessions and compulsions has been broadly accepted among researchers. Yet to date, no research has empirically examined the origins of this particular cognitive bias. It is important to redress this deficiency in order to contribute to the understanding of the development of distorted thinking in OCD sufferers. Identifying origins of responsibility assumptions and distortions will help to validate the cognitive-behavioural model of OCD, and in particular, the role of inflated responsibility in OCD. At present, the only information guiding understanding of the origins of inflated responsibility is extrapolations from general cognitive theory (Beck, 1976; Salkovskis, Shafran, Rachman & Freeston, 1999). Secondly, if pathways to the development of distorted thinking that is exemplified by inflated responsibility are determined, it may be that “at risk” individuals can be identified before the onset of psychopathology and early intervention programs can be devised.

5.1 Hypothesised origins of inflated responsibility

As a preliminary step towards achieving an empirically validated understanding of the origins of inflated responsibility, Salkovskis et al. (1999) recently hypothesised five specific pathways to the development of these beliefs in OCD. These pathways are critical incidents including ‘near misses’ in which it was wrongly perceived that the person was responsible, critical incidents where the individual actually
contributed to a misfortune, the burden of too much responsibility in childhood, or the
over-protection from responsibility in childhood, and an upbringing in which codes of
conduct were strongly enforced.

In addition to these five pathways, a further three potential origins of inflated
responsibility will be proposed. Vigilance, that is, a sensitivity and alertness to the
possibility of danger imbued from an early age, thought-action fusion, and guilt will
also be explored.

5.1.1 Excessive responsibility in childhood

Firstly, Salkovskis et al. (1999) propose that an excessive amount of responsibility
placed upon children for the care of family members including parents is a potential
origin of inflated responsibility. This experience may include responsibility for
general well being, for the maintenance of the home, or for the feelings and emotional
well being of family members. These authors suggested that a childhood experience
of heavy responsibility could lead to enduring beliefs about the importance of being
responsible for outcomes and the well being of self and others.

5.1.2 Protection from responsibility in childhood

Salkovskis et al. also proposed that, “childhood experiences in which sensitivity to
ideas of responsibility develops as a result of being shielded from it” (p. 1062) that is
over-protection from harm, difficulties and responsibility may encourage the
development of feelings of being unprepared and unable to cope with common
demands and dangers. In the same way that an excessive amount of responsibility in
childhood may foster a sense of inflated responsibility, so too may the protection
from responsibility promote an excessive sense of responsibility through lack of
experience and exposure to responsibilities. In this manner, it is possible that feelings
of incompetence and the sense of being ill equipped to cope with duties and
challenges will lead to an inflated sense of personal responsibility for consequences
and outcomes. The role of such parenting styles in the development of inflated
responsibility has not been previously investigated however, there are some findings
related to other aspects of parental style and practices in relation to OCD and these
are discussed in the next section.

5.1.3 Previous findings relating to parental style and OCD

Previous research in the area of parental influence and OCD is both limited in number
and has produced inconclusive findings. What is more, the role of parenting styles
and familial environment on the development of cognitive distortions such as inflated
responsibility have not been examined. Toro et al. (1992) found that relationships
with parents and siblings differentiated children with and without OCD. Further
findings have suggested that parenting styles and one's perceptions of the degree of
affection, cohesion, empathy and closeness, among other things, can significantly
differentiate children with and without psychiatric illness (Kashani et al., 1987),
including OCD (Vallen-Basile et al., 1995). Whether these factors play any causal
role in the development of OCD or whether they occur as a corollary to OCD is not
determinable from these studies.
Merkel, Pollard, Weiner, and Staehler (1993) asked 320 OCD patients to endorse a list of adjectives that they considered described their parents. It was predicted that OCD patients would rate their parents in terms associated with Obsessive Compulsive Personality Disorder such as cleanliness, meticulousness and strictness as it was thought that these personality traits would reflect OCD symptoms of checking, cleaning and order. There were few findings in the predicted direction providing little support for the hypothesis of parental practices with respect to influencing the development of OCD. While parental practices may not account for the development of OCD per se, parenting styles may play a role in the development of certain thinking styles or cognitive distortions such as inflated responsibility, which, in turn are related to OCD symptomatology.

Hibbs, Hamburger, Lenane, Rapoport, Krueci, Keysor et al. (1991) found that both high expressed emotion (a measure of criticism or over-involvement of patients’ family members) and psychiatric disorders were frequent in the parents of children and adolescents with OCD when compared to normal controls. Kanner (1962) suggested that children with OCD were reared with an overdose of parental perfectionism and have been taught a strict interpretation of “right” and “wrong”. Rachman (1976) proposed that OCD patients with cleaning rituals would be more likely to emerge in families where the parents are over-protective and he also suggested the role of vicarious learning in relation to cleaning compulsions. Checking rituals, on the other hand, he argued emerge in families where parents set high standards and are over-controlling and over-critical. Although grounded in theory, these hypotheses were not empirically tested by Rachman (1976).
Steckte, Grayson, and Foa (1985) pursued this line of inquiry and tested the hypothesis that parents of OCD patients with washing compulsions would be more over-protective and obsessive, whereas parents of patients with checking rituals would be more meticulous and demanding. It was found that while there were no significant effects for fathers, a significant effect was found for mothers supporting the prediction that 'checkers' identified their mother as meticulous and more demanding in contrast to 'washers'. The hypothesis that over-protectiveness in the parents of washers would be a factor was not borne out by the data. Similarly, a non-significant finding was reported by Vogel, Stiles, and Nordahl (1997) who found that in a sample of 26 OCD patients, no particular parenting style, as assessed by the Parental Bonding Instrument (Parker, Tupling & Brown, 1979), was associated with OCD.

In a more recent study by Turgeon, O'Connor, Marchand and Freeston (2002), it was found that there were no differences between a group of OCD sufferers and a group of panic disorder without agoraphobia sufferers on measures of parental bonding however, compared to the non-clinical control group, OCD sufferers recalled their parents as being more protective. The recipients might view such over-protectiveness as strictness, a factor which has been proposed by other authors (see section 5.1.4).

Finally, Valleni-Basile et al. (1995) found that family cohesion had an inverse relationship with OCD suggesting that disengagement or decreased cohesion in the family may be associated with an increased prevalence of OCD. While this appears to
contradict the findings of the Hibbs et al. (1991) study in which over-involvement from parents was a frequent factor in families of children and adolescents with OCD, these contrasting findings can be accommodated by Salkovskis et al.'s (1999) hypothetical pathways to obsessive compulsive problems. Rather than being contradictory, these findings support the hypothesised contribution of under-involvement and over-involvement of parents to the development of inflated responsibility in OCD. The utility of protection from responsibility and the burden of responsibility in childhood as two separate pathways, as well as strictness in the development of inflated responsibility and in the maintenance of OCD symptoms will be assessed in the current study.

The small number of studies in this area together with inconsistent findings creates an unclear picture of the influence of parenting styles in the development of OCD. Furthermore, no studies have examined the specific role of parental influences in the development of inflated responsibility in OCD. Examining parental influences at this micro level may prove more informative and may yield differential effects than studies aimed at identifying the influence of parental styles in the development of OCD as a whole.

5.1.4 Rigid codes of conduct

Salkovskis et al. proposed that rigid codes of conduct engendered in childhood from not only family but also clergy, school and other authority figures may promote a strong sense of personal responsibility for thoughts, conduct and moral duties. Kanner (1962) suggested that children with OCD have been taught a strict interpretation of
"right" and "wrong" and this finding might be related to levels of strictness. Although no clear findings have emerged into the relationship between religiosity and OCD (see section 2.5.3), religious upbringing may be another domain through which moral codes are taught and enforced. This thesis will investigate the role of a strict upbringing both from within the family and from outside the family in the development of inflated responsibility.

5.1.3 Critical incidents

Salkovskis et al. suggested, "beliefs can occur as a result of discreet or sustained traumatic events" (p. 1059) and that certain critical incidents might give rise to feelings of personal responsibility and culpability. Tallis (1994) proposed that certain critical incidents might be instrumental in the development of inflated feelings of personal responsibility. He argued that the strong belief that in a single event, one contributed significantly to bringing about a negative outcome could have the effect of inflating responsibility for harm and its prevention. Included in this category is the possibility that something almost occurred through action or inaction. The current research relating to the role of critical incidents in OCD is limited however, existing research is presented in the following section.

5.1.6 Previous findings relating to critical incidents, life events and OCD

According to Black (1974), over half of OCD patients report a distinct traumatic event that they have linked to the onset of their symptoms. Almost all patients can also report an increase in symptoms following a significant life change, such as the birth of a child (Leckman, Mayes, Feldman, Evans, King & Cohen, 1999) or other
stressful events (Steketee & Pruyn, 1998). The predominance of some type of stress or stressful event precipitating onset of symptoms concurs with the diathesis-stress model of psychopathology (Grossarth et al., 1994) as presented in section 3.3.

Tallis (1994) presented the cases of two OC patients whose obsessional symptoms of thought-action fusion, guilt, and inflated responsibility appeared to share a common aetiology of specific formative learning experiences. Tallis suggested that powerful early experiences in the lives of the patients might have contributed to the development of thought-action fusion. Secondly, by attributing negative outcomes to mental events or their own actions, obsessional patients inevitably develop an extreme sense of responsibility for their thoughts in turn leading to significant levels of guilt. Although Tallis did not postulate a learning model for the cause of OCD, he did suggest that it might be the case that critical experiences lead to the formation of particular cognitive patterns and distortions, which are symptomatic of obsessional problems.

Despite many clinical examples throughout the literature (Black, 1974; Salkovskis et al., 1999; Tallis, 1994), the number of studies that have been carried out to assess the effects of critical incidents in the development of obsessions and compulsions are few. McKeon, Roa, and Mann (1989) compared the life events scores of a group of 25 OCD patients with a group of matched controls and found a significantly higher incidence of stressful life events in the OCD group one year prior to the onset of illness. More specifically, Umberto, Maina and Bogetto (2000) suggested that life events that lead to an increase in responsibility could trigger onset of OCD symptoms.
Umberto et al. (2000) conducted a review of literature in which the type of life event was reported by OCD patients as significant and found that certain types of events were frequently reported by OCD patients. Most frequently reported were events related to loss, family conflict, and those situations which implied or forced an increase of personal responsibility such as job promotion or increased work duties, pregnancy, marriage, and physical illness (see Lensi, 1996; Neziroglu et al., 1992).

Rasmussen and Tsuang (1986) also reported that in adults, increases in responsibility such as the birth of a child, promotion to a new job, and significant losses such as the death of a family member were the most common precipitants of OCD. These authors found that almost all of their 44 participants reported an increase in obsessive-compulsive symptoms following a significantly stressful life event.

Khanna et al. (1988) compared the frequency of life events between 32 OCD patients with a matched non-clinical control group and found an excess of life events in the OCD group six months prior to onset, but no difference at one year prior to onset. This result raises the possibility that critical life events can act as a fairly rapid trigger for the onset of OCD symptoms or, there may also be memory and priming effects present in retrospective studies.

Rettew et al. (1992) examined individual symptoms of children and adolescents with severe OCD and followed the course of their symptom development and the constellation of symptoms across time. Within the study the authors also explored the relationship between significant triggering events reported by participants and the
onset of symptoms and category of symptom type. While 38 percent of patients and/or their family members believed that a specific event had precipitated the onset of obsessive-compulsive behaviour, it was determined that only one instance could be described as “traumatic” or as an event beyond normal experience for children. The most common events reported involved stressful family situations or some sort of life change (i.e., moving to a new area). Rettew et al. found, however, that the content of OC symptoms often involved elements of the reported triggering event. They give an example of a house fumigation reported to be responsible for a fear of air contaminants. At follow-up it was found that in no case was the specificity of the symptoms content maintained and often more general symptoms had developed.

Based on these findings it would appear that critical incidents could not explain the particulars of current symptom constellation neither did they influence the course of symptom profiles over time. However, it is common for symptoms types to change over the course of illness as has been discussed previously (see section 2.3). These negative findings do not, however, invalidate the hypothesis that critical incidents do contribute to the initial development of OC symptoms or negative beliefs and cognitive biases that perpetuate the disorder. That the event is ‘traumatic’ may not be prerequisite for the onset of OCD but rather that the event is significant to the individual. This interpretation is likely to be highly idiosyncratic and subjective. In accordance with this thesis, it is supposed that implicit in the significant event is the feeling of responsibility and subsequent guilt for having caused, or failed to avert some misfortune or harm.
In relation to critical incidents, Salkovskis et al. further proposed that "an incident in which it wrongly appeared that a person's thoughts and/or actions contributed to a serious misfortune" (p. 1065) could lead to the same levels of inflated responsibility following an event in which one's actions or inaction actually contributed to a negative outcome. These events might occur outside the family environment such as situations at school and with friends, as much as within the family environment and will be investigated in the current research.

5.1.7 Thought action fusion, guilt, and vigilance

Associated with the sense of responsibility are feelings of guilt, blame and punishment. These themes have been identified by other authors (Steketee et al., 1991; Tallis, 1994) as being related to inflated responsibility. However, Salkovskis et al. suggested that rather than direct origins to inflated responsibility, guilt and blame may be interacting factors that serve to further inflated responsibility in already prone individuals. The role of guilt and blame in the development of inflated responsibility will be explored in this thesis.

The cognitive distortion of thought action fusion (Shafran et al., 1996) is also associated with a sense of inflated responsibility and may be instrumental in its development. Salkovskis et al. suggested that TAF is a variation of inflated responsibility, rather than an origin of inflated responsibility. However, it may be that individuals who hold beliefs related to TAF are likely to develop inflated responsibility beliefs if the tendency towards this particular cognitive bias pre-exists inflated responsibility.
A further theme of ‘need for vigilance’ is posited in this thesis to contribute to inflated responsibility as it is considered by the researcher that messages or beliefs upheld in the family that relate to an overprotective parenting style might engender a strong sense of personal responsibility for avoiding harm. The association of over-protection from responsibility to inflated responsibility was put forward by Salkovskis et al. but it is proposed here that messages of vigilance might be a separate, albeit related aspect of a protective family environment that can be considered independently. ‘Vigilance’ used in the current context pertains to investing the individual with personal responsibility for avoiding harm whereas over-protection pertains to attitudes and behaviours of the parent to avoid harm to the child and preventing them from assuming responsibility for their own care.

5.2 Personality, OCD and inflated responsibility
To account for why it is that not all individuals who have been subjected to a particular, environment, style of parenting, and/or exposed to critical incidents do not develop a sense of inflated responsibility or OCD, it must be assumed that some individuals will exhibit an increased propensity or vulnerability to developing obsessional behaviour. Predisposing factors in the study of psychopathology are usually understood in terms of personality and genetics (Carey & DiLalla, 1994; Clarke, Watson & Minika, 1994; Eysenck, 1967; Gray 1981). Such a view supposes a general factor which is genetically derived, and from which certain personality traits emerge that increase the probability of developing a certain type of disorder. In this
way, certain personality types are considered to be vulnerability factors in the development of OCD (Eysenck, 1967).

Alternative models to the predisposing vulnerability model have been proposed. The "pathoplasty" model suggests that particular personality characteristics modify the course, degree of severity, manifestation, and outcome of a disorder without actually having a direct aetiological role (Clarke et al., 1994). Another model, known as the "scar hypothesis" (Akiskal, Hirschfeld & Yerevanain, 1983) asserts that converse to the other two models, psychopathology affects personality in that the experience of psychological disorder can alter personality in important ways such as increased insecurity or dependency (Clark et al., 1994). Finally, the continuity hypothesis suggests that personality and disorder represent a continuum whereby disorder is simply an exaggerated and extreme version of personality traits such that, sub-clinical populations will display the same personality traits but to a lesser degree (Clark et al., 1994; Klein, Wonderlich & Shea, 1993). By far and away the most popularly endorsed and most widely investigated view is that of a general predisposing factor in the form of certain personality factors with biological origins (Clarke et al., 1994; Maher & Maher, 1994; Zinbarg & Barlow, 1996).

Freud (1908), although not proposing a genetic basis for personality, did propose that people who are prone to developing anxiety related disorders (neuroses) display certain collections of personality traits. Those diagnosed with obsessional neurosis were described as being over-sensitive, excessively concerned with cleanliness and order, pedantic, conscientious, uncertain, indecisive, rigid, and fond of hoarding.
Typically these kinds of associations between personality traits and disorder are observed post-onset complicating the distinction between pre-morbid personality traits and disorder. In 1974, Black reviewed seven studies in which obsessional personality traits (although variously defined) were assessed in relation to obsessional patients before onset of illness. Overall he concluded from these studies, that 71% of patients demonstrating obsessional personality traits later developed OCD. Such an approach however, is limited in that identifying associations between patterns of traits and OCD is not sufficient to draw conclusions of causality. Further investigations are required to establish a comprehensive model of personality and OCD which is validated in studies using longitudinal designs begun in childhood or, an alternate but by no means perfect method, causal modelling (also referred to as structural equation modelling, SEM). Such investigations may reveal general factor or hierarchical model of personality and psychopathology.

Despite the methodological shortcomings, Black's (1974) results do lend support to a general factor model of personality and disorder. A general factor model of personality supposes the presence of broad, underlying states from which individual traits emerge. The most prominent of the general factor models of personality is that of Hans J. Eysenck who conducted a series of extensive analyses beginning in the late 1940s. Eysenck (1967) identified two very broad dimensions of personality, which he labelled *neuroticism* and *introversion*. The dimensional opposites of these factors are psychoticism and extraversion respectively. Relevant to the study of OCD is neuroticism, which, like the other dimensions, is believed to have its basis in physiology and stands as a vulnerability factor in the development of anxiety
disorders (Carey & DiLalla, 1994). Eysenck (1967) and Gray (1970) both postulated that people who are high on neuroticism, or high on neuroticism and introversion, are prone to developing neuroses, including OCD. Results from a number of twin studies of personality have consistently yielded significant correlations from $r = .40$ to $.60$ between monozygotic adult twins on personality traits (Carey & DiLalla, 1994). Data from twin studies suggest that 40% or more of the variance in personality is genetic in origin with the remaining source of variance attributed to environmental factors (Carey & DiLalla, 1994; Lochlin, 1992).

Most studies into personality and OCD have almost entirely concentrated on personality disorder and OCD. Very few studies have explored personality dimensions or traits and OCD. This dearth was the case in 1974 when Black was reviewing the literature on personality and OCD and there continues to be a gap in the literature to date. Several notable exceptions include studies by Hirschfield and Klerman (1979), Pollack (1979) and Watson, Clark and Carey (1988) who all found a positive relationship between neuroticism and obsessive-compulsive symptoms and OCD. Several studies have explored the relationship of personality and OCD using the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) or its precursor the Maudsley Personality Inventory (MPI; Eysenck, 1959). Results have been consistent in demonstrating support for the relationship between neuroticism and anxiety disorders however verification of causal sequences is elusive in the absence of longitudinal data (Clarke et al., 1994).
Most studies in the area of personality and psychopathology have been cross-sectional using samples of patients who are either in an acute phase of a disorder or following an episode (Black, 1974; Clark et al., 1994; Summerfeldt et al., 1998; Watson, Clark & Harkness, 1994). Very few studies have examined pre-morbid personality and neuroses to form a prospective picture of personality and psychopathology. Of interest, Gunderson, Triebwasser, Phillips, and Begin (1994) cited five studies that assessed personality prior to the development of depression. Results indicated that only neuroticism was associated with later onset of depression in all five studies. Prospective longitudinal studies of anxiety, however, appear to be limited. Nevertheless, the results of the studies into depression do support the supposition that neuroticism is a predisposing factor that underlies affective disorders. Considering the high co-morbidity rates between depressive disorders and anxiety disorder, particularly OCD (APA, 1994), it may be that the developmental link between neuroticism and depression can be extended to anxiety disorders also. This link cannot be presumed however and requires empirical investigation.

As with any discussion of personality as a precursor to psychological disorder, several methodological and conceptual issues warrant mention. As several authors have pointed out (Black, Noyes, Pfohl, Goldstein & Blum, 1993; Summerfeldt et al., 1998; Tallis Rosen & Shafran, 1996), the common conceptualisation of symptoms and personality traits as discreet and distinct becomes less tenable when one considers the fact that onset of OCD occurs mostly in late adolescence or early adulthood (APA, 1994). In cases where obsessional symptoms and compulsive rituals have been enduring or at least partially present for most of the individual’s life, the separateness
of symptoms of the disorder and aspects of personality become less clear (Summerfeldt et al., 1998) confounding assessment of personality. Furthermore, as mentioned previously, it is difficult, if not impossible to examine definitively personality as a predictor of a disorder as assessments are usually only made in clinical groups when symptoms are already present. Clearly this methodological shortcoming limits any findings from self-report studies of personality and disorder. As a result, most studies in relation to personality and OCD have not moved beyond the basic observation that certain categorical or dimensional personality traits correlate with OC symptoms (Tallis et al., 1996). Nevertheless, prospective studies conducted into depression lend strong support to the notion of a general underlying factor of neuroticism which is highly associated with the anxiety disorders and with OCD (Watson et al., 1988; Hirschfield & Klerman, 1979; Pollack, 1979; Eysenck, 1967) and causal modelling is a modern tool whereby the simultaneous examination of multiple constructs can contribute to the notion of causality.

While the role of inflated responsibility in OCD has been investigated, and separately the relationship of individual differences to OCD symptomatology, only one study (Scarrabelotti, Duck & Dickerson, 1995) has attempted to combine the two streams to explore the ability of Eysenckian personality constructs to predict responsibility beliefs. As discussed previously, the implication of neuroticism in OCD goes to obsessions and compulsions rather than to any particular driving cognition, such as inflated responsibility.
The study by Scarrabelotti et al. (1995) investigated the role of psychoticism, the dimensional opposite to neuroticism, to inflated responsibility because of the traits of irresponsibility, immaturity and anti-authoritarianism that define this construct (Eysenck & Eysenck, 1978). Arguably, responsibility falls on the psychoticism (P) scale and has an inverse relationship with it. That is, people low on P will be high on feelings of personal responsibility. Results from Scarrabelotti et al.’s study indicated that psychoticism was not a good predictor of obsessions and compulsions, but that decreases in psychoticism were significantly related to increases in responsibility as measured by a brief scale devised for the purposes of the study. This finding is congruent with Eysenck’s (1967) conceptualisation of neuroticism and psychoticism as bipolar dimensions. These preliminary results indicate the role of personality in inflated responsibility cognitions but they require replication.

Chapter summary

The important role of inflated responsibility in OCD has been discussed in previous chapters. Little is known about the origins of inflated responsibility beliefs in OCD although Salkovskis et al. (1999) have put forward several hypotheses. They have suggested 1) the influence of parental over-protection from responsibility and 2) over-burden of responsibility in childhood, 3) critical incidents where the person has actually contributed to misfortune through action or inaction, 4) critical incidents where the individual wrongly believes they contributed to misfortune and 5) a strict upbringing in which codes of conduct were strongly enforced as potential sources of inflated responsibility. Salkovskis et al. (1999) provided anecdotal clinical case-reports to support these possible aetiological pathways in the development of inflated
responsibility, but these await empirical validation. In addition to the five hypothesised pathways of Salkovskis et al., the areas of 6) systematic experiences of guilt and blame, 7) thought-action fusion, and 8) vigilance are possible pathways to inflated responsibility. Furthermore, 9) the contribution of personality variables to the development of inflated responsibility warrants consideration as previous research (e.g. Eysenck, 1967; Scarrabelotti et al., 1995) has indicated the role of neuroticism in OCD and possibly the contribution of low levels of psychoticism to inflated responsibility (Scarrabelotti et al., 1995). Empirical studies are required to establish the relative contribution of these nine broad domains comprised of personality, parental style and upbringing, and critical life events to the development of inflated responsibility. It is argued that the results of such a study would help to validate the cognitive-behavioural formulation of the development of inflated responsibility beliefs, and also provide for the opportunity for preventative programs to be devised in clinical settings. The following chapter outlines the aims and rationale for the current studies and presents the studies' main hypotheses.
CHAPTER SIX
Rationale and aims

6.1 Towards an understanding of the origins of inflated responsibility

OCD is a debilitating disorder experienced by some 2%-3% of the population (Samuels & Nestadt 1997). Recent work has identified a sense of inflated responsibility as a correlate of OCD and interventions directed at reducing this sense of inflated responsibility have been efficacious (Ladouceur et al., 1996; Van Oppen et al., 1995).

Specifically, Salkovskis (1985; 1989) posited that individuals with OCD maintain assumptions that lead them to interpret events in such a way that they assume responsibility for harm, or its avoidance, to themselves or others. Cognitive behavioural theorists such as Rachman (1976; 1993) and Salkovskis et al. (1999) have asserted that particular assumptions and beliefs are acquired during early experiences and early socialisation processes. Once developed, these assumptions provide a framework though which all information is interpreted. These early developed assumptions can greatly influence the way in which an individual perceives and responds to environmental stimuli (Beck & Clark, 1988). An inflated sense of responsibility is thought to be one of the central cognitive distortions in OCD that serves to perpetuate the cycle of obsessions and compulsions (Rachman, 1997; Rachman & Hodgson, 1977; Salkovskis, 1985; 1989).
Salkovskis et al. (1999) have proposed several aetiological pathways for the development of inflated responsibility in OCD which has been found to be a pivotal cognitive distortion in the maintenance and development of OCD. These pathways are critical incidents including ‘near misses’ in which it was wrongly perceived that the person was responsible, critical incidents where the individual actually contributed to a misfortune, the burden of too much responsibility in childhood, the over-protection from responsibility in childhood, and an upbringing in which codes of conduct were strongly enforced.

In addition to the pathways proposed by Salkovskis et al. (1999), the theoretical factors of thought-action fusion (TAF; Rachman & Shafran, 1999), vigilance, and guilt and blame (Steketee et al., 1991; Tallis, 1994) can be hypothesised as additional pathways to inflated responsibility.

In terms of vigilance, the manner in which this is manifested is likely to include specific ‘messages’ conveyed to children and adolescents to do with being alert to possible harm, vigilant, and wary of risks. For example, the message that “danger is just around the corner” and one must remain vigilant at all times to avoid carelessness and harm to self or others and might be considered an aspect of this construct.

The concept of thought-action fusion, characterised by such messages or notions as “a sinful thought is the same as a sinful act” could also foster inflated responsibility beliefs.
A frequent experience of blame and guilt for actions and consequences where the individual has been scapegoated and made to feel guilty and responsible for negative outcomes might be related to a sense of inflated responsibility. It is possible that these ‘messages’ and experiences come from peers and school as much as from parents.

To account for the onset of OCD and inflated responsibility in some people but not others who may have experienced similar origins of inflated responsibility, a general vulnerability factor needs to be considered. Personality is believed to stand as a significant contributing factor in the development of psychopathology. Following Eysenck’s (1967) theory of personality, heritable vulnerabilities are believed to predispose some individuals to psychological disorder, and particularly to certain types of disorder. Neuroticism is believed to be a common personality dimension shared by individuals with anxiety disorders (Eysenck & Eysenck, 1991). Although prospective studies between personality and OCD do not exist, it is plausible that a similar association as has been found between personality and depression might also occur for OCD given the high co-occurrence of the two disorders (Gunderson et al., 1994). Psychoticism has been inversely related to inflated responsibility (Scarabelotti et al., 1995) in that people low on psychoticism are likely to be higher on inflated responsibility.

The aims of this thesis are two fold: 1) to develop and validate a measurement of the origins of inflated responsibility based on theoretical pathways proposed by Salkovskis et al. (1999), in addition to the areas of guilt and blame (Steketee et al., 1991; Tallis 1994), TAF (Rachman & Shafran, 1999), and vigilance as an aspect of
being protected from responsibility in childhood (see study 1, Chapter 7) and 2) to
test a model of inflated responsibility and OCD which incorporates personality and
cognitive factors (see study 2 Chapter 10).

6.2 Methodological difficulties in assessing aetiology

Aetiological models of psychopathology are typically difficult to validate as often
they rely on the retrospective accounts of individuals. A number of researchers (see
Brewin, Andrews & Gotlib, 1993 for review) have voiced misgivings about the
accuracy and veracity of self-reported recollections of childhood experiences in
anxious or depressed patients. In fact, some researchers have stated equivocally that
mood states can alter and affect memories and impressions to such a degree that one
must “seriously question the stability of parental rearing style measurement”
(Gerlsma, Emmelkamp & Arrindell, 1990, p. 270). Others have asserted that the
“validity of retrospective data obtained from depressed patients and their families is
questionable at best” (Burbach & Bourdin, 1986, p. 146).

Memory is generally understood to contain three core processes: encoding, storage
(consolidations, re-coding), and retrieval (Tulving, 2000). Distortions in memory can
occur at all three stages. Prior events, beliefs, or memories can influence the manner
in which an event is encoded into memory. Cognitive psychologists have referred to
this phenomenon as retroactive interference (Baddeley, 1996). Distortions in memory
can also be brought about by proactive interference. In this case the storage of an
older memory or its retrieval is affected by the encoding of a new memory. In short,
retrospective reports are not immune to distortion and this distortion may arise at the encoding, storage and retrieval end of memory.

Brewin et al. (1993) reviewed the literature on retrospective reports and psychopathology and argued that claims against the general reliability of retrospective reports are exaggerated and unfounded. They cited evidence to indicate that, with very few exceptions, memory biases have not been found in studies of anxious patients. Brewin et al. also cited evidence that confirms that the recall of parenting styles among socially phobic individuals does not alter between pre-treatment and post-treatment indicating that recollections of past events are stable across mood state. It can be argued, then, that recollections of childhood events and of parenting styles are not likely to be so distorted or unreliable as to be worthless in the study of possible origins of inflated responsibility as a cognitive distortion in OCD.
CHAPTER SEVEN

Study 1

Development of the Origins of Inflated Responsibility Questionnaire

7.1 Aims

The aim of study 1 is to develop a scale to assess the origins of inflated responsibility beliefs.

Method

7.2 Ethics approval

Ethical approval for the research project was obtained from two independent Ethics Research Committees, one in Australia (Appendix A1) and one in the United Kingdom (Appendix A2). The research was conducted according to the ethical guidelines outlined by the National Human Medical Research Council (NHMRC) of Australia.

7.3 Participants

A clinical sample of 84 OCD sufferers (60% female; 40% male; age \( M = 43.36; SD = 12.6 \)) took part in the study. Participants were recruited through advertisements in the newsletters and Internet bulletin boards of various support groups and associations for sufferers of OCD and other anxiety disorders. Some participants \((n = 35)\) were recruited from across England with the remaining \((n = 49)\) recruited from similar organisations within Australia. Participants identified themselves as OCD sufferers.
and no pre-selection screening was conducted. It must be noted that participants were not diagnosed by a clinician to verify their inclusion in the OCD group. Participants’ inclusion in the clinical OCD group was based solely on their self-reported diagnosis of OCD. As an, albeit less robust, measure to ensure reliability, participants were asked to identify from whom their diagnosis was received. As presented in Table 7.2 over 90 percent of participants in the OCD group reported to have been diagnosed as having OCD by a psychiatrist, psychologist or General Practitioner and only 1.21 percent were self-diagnosed. It is acknowledged that a more reliable method of participant selection would have been to have all participants in the clinical group interviewed and diagnosed by a clinician however, the nature and design of this study precluded this approach. Nevertheless, mean total scale scores on the Padua Inventory correspond with those reported by van Oppen et al. (1995) where OCD participants were rated by a qualified clinician before, during and after treatment. Comparative means are presented in table 7.1 and illustrate that the OCD sample in this study score similarly to those tested post-treatment in the van Oppen et al study (1995). This indicates that the present OCD sample can be reliably included as a clinical sample, although their symptom severity is similar to that of OCD patients who have undergone treatment.

Table 7.1 Comparative Means for OCD Sample on the Padua Inventory: Self-report versus Clinician rated

<table>
<thead>
<tr>
<th></th>
<th>Current OCD sample</th>
<th>Van Oppen et al’s (1995) OCD sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 84</td>
<td>N = 28</td>
</tr>
<tr>
<td>PI Total scale score</td>
<td>50.1 (SD 43.56)</td>
<td>51.5 (SD 27.8)</td>
</tr>
</tbody>
</table>
7.4 Comorbidity data

For the OCD group, 76.3% of respondents indicated that in addition to OCD they also had a secondary diagnosis or psychological condition. These diagnoses are presented in Table 7.2, together with the percentage of cases diagnosed by various clinicians (e.g., 41.66% of all comorbid cases were diagnosed by a psychiatrist). Participants were asked to nominate their secondary diagnoses and only the first diagnosis in order given was included in the analysis.

Table 7.2. Percentage of OCD Group with Secondary Psychological Problems/ Diagnoses and Diagnostian.

<table>
<thead>
<tr>
<th>Other Diagnoses/problems</th>
<th>%</th>
<th>Diagnostian</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>34.5</td>
<td>Psychiatrist</td>
<td>41.66</td>
</tr>
<tr>
<td>Panic disorder</td>
<td>10.7</td>
<td>Psychologist</td>
<td>28.57</td>
</tr>
<tr>
<td>Anxiety</td>
<td>10.7</td>
<td>GP</td>
<td>20.23</td>
</tr>
<tr>
<td>Generalised Anxiety Disorder</td>
<td>4.7</td>
<td>Self-diagnosed</td>
<td>8.33</td>
</tr>
<tr>
<td>Social phobia</td>
<td>3.5</td>
<td>Psychiatric nurse</td>
<td>1.21</td>
</tr>
<tr>
<td>Simple phobia</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trichotillomania</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eating disorders</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Traumatic Stress Disorder</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seasonal Affective Disorder</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Dysmorphic Disorder</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypochondriasis</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \sum = 76.3\% \]

Of the eighty-four participants who identified themselves as having a primary diagnosis of OCD, 60% were female and 40% were male. The greater number of
females to males in this clinical sample reflects a gender bias found in other clinical studies in which more females than males comprised the clinical samples (e.g., Antony et al., 1998). This bias may also reflect broader findings from larger-scale epidemiological studies (e.g., Castle et al., 1995; Samuels & Nestadt, 1997) in which more females than males have been identified as suffering from OCD. As discussed previously in section 2.5.1, the tendency for more females than males to be represented in OCD samples may indicate that more females than males suffer from OCD. Alternatively, it may reflect the greater tendency for women, in general, to seek out mental health services (Goodwin et al., 2002) or, in this case, to volunteer to participate in research. As all participants within the OCD group were recruited via support groups and anxiety disorder organisations, it is possible that females were over-represented in this sample as a function of their association with support services.

7.5 Mental health problems in addition to OCD in the clinical sample

A high rate of OCD participants indicated that in addition to OCD, they suffered from a secondary mental health condition. Some participants nominated more than one secondary diagnosis and in these cases, only the first listed was included. Seventy-six per cent reported a secondary diagnosis. Depression was the most frequently nominated, followed by panic disorder and anxiety. Diagnostic categories were not provided for participants to select from and as a result the conditions nominated by participants do not correspond to DSM-IV diagnoses. For example, 10.7% of OCD sufferers nominated “anxiety” as a secondary condition and therefore the nature of this condition and whether symptoms would reach the threshold for diagnosis of an
anxiety disorder cannot be ascertained. Nevertheless, the data provided do correspond with findings from other studies which rate depression and other anxiety disorders as the most common co-morbid conditions among people with OCD (Brown & Barlow, 1992; Crino & Andrews, 1996).

A sample of 73 non-clinical participants (75% female; 25% male; age $M = 37.14; SD = 13.15$) recruited within Australia also took part in the study. These participants were a non-representative, convenience sample who identified themselves as not having OCD and as not suffering from any other psychological condition (see Appendix B for Plain Language Statement and invitation to participate).

7.6 Design of the Origins of Inflated Responsibility Questionnaire

A pool of 68 questions was developed for inclusion in the Origins of Inflated Responsibility Questionnaire over eight domains. The development of items was guided by the five hypothesised pathways to inflated responsibility proffered by Salkovskis et al. (1999) plus an additional three domains of TAF, vigilance, and guilt and blame hypothesised in this study to be relevant in the development of inflated responsibility (see section 5.1). Questions were devised based on examination of other scales related to inflated responsibility such as the Responsibility Attitudes Scale and the Responsibility Belief Questionnaire (Salkovskis et al., date). The list of items was then discussed and checked with the researcher's supervisor and also assessed for their face validity and relevance by a clinical psychologist. Beyond these preliminary checks, no pilot studies were conducted using the items of the OIRQ.
Questions were framed so that respondents answered in terms of their childhood or adolescence (see Appendix C).

All items were answered on a 9-point Likert scale where "as a child or adolescent" the respondent answered that they 0 = 'never' to 8 = 'always' experienced this. Twelve items were reverse-coded, so that higher scores indicate a stronger sense of each domain.

7.7 Instruments

Participants were asked to provide demographic data (see Appendix D) on age, gender, diagnosis, and from whom they received their diagnosis (i.e. psychiatrist, psychologist). They also completed the 68-item Origins of Inflated Responsibility Questionnaire (OIRQ) developed for this study.

Procedure

7.8 Recruitment and dispatch of questionnaires

Participants both clinical and non-clinical were recruited via several means. Advertisements were placed in newsletters, bulletins and Internet notice boards of various OCD and anxiety disorder support groups and associations (see Appendix E for example letter) requesting people with OCD to participate in a study on OCD and its correlates. Participants were asked in the advertisements to contact the researchers via electronic mail should they wish to take part in the study. In this way, no volunteer was approached personally by the researchers to request participation. As a
result of this process, most volunteers emailed their name and postal address requesting participation in the study. A questionnaire package including a Plain Language Statement and reply-paid envelope was dispatched to them. A small proportion of respondents (< 10%) expressed interest in the study but failed to initially provide their contact details. A follow-up email was sent to elicit these data.

Non-clinical participants were an availability sample and often individuals were approached directly or referred to the study by others. Specific consent was not obtained in writing however it was made explicit to all participants that completion and return of the questionnaire would be taken as consent to participate in the study. Also included in the questionnaire package was a reply paid addressed envelope for return of the study materials at no cost to participants.

Of the 500 questionnaires dispatched to volunteers and groups, a total of 157 were returned indicating an overall response rate of 31.84%. Two weeks later, all participants were again invited to complete and return a second copy of the Origins of Inflated Responsibility Questionnaire. The same response rate was found for time 2.

Time 1 and time 2 responses were matched using a six-letter coding system provided by respondents. This code consisted of the first three letters of their mother’s name and the first three letters of their father’s name (for instance Margaret and John would be MARJOH); gender and age were used as additional verifiers.
CHAPTER 8

Study 1 Results

Data were available from 157 participants: 84 people with a primary diagnosis of OCD and 73 control participants. A principle components analysis (PCA) was then conducted to extract any factors present in the 68-item OIRQ developed for this study.

8.1 Preliminary analyses

Data screening led to the removal of two items. Item 15 “Did you feel that much of the responsibility for what occurred in the family rested on you” was removed as it was replicated in an earlier section of the questionnaire and item 63 “Were there any events in which you feel you might have played a part in making happen” was removed as it was vague and ambiguous.

8.2 Principal Components Analysis (PCA)

The Kaiser Meyer-Olkin Measure of Sampling Adequacy (.85) and Bartlett’s Test of Sphericity ($F,(3000) = 2857.48, p < .001$) both indicated the factorability of the correlation matrix. PCA, using oblique rotation which allows for correlation among the factors (Tabachnick & Fidell, 1996), revealed an initial extraction of 25 eigenvalues greater than unity and 4 eigenvalues that were equal to or greater than 2. Cattell’s Scree Plot suggested the presence of 5 or 6 factors. A series of extractions were conducted from eight factors downwards with a five factor solution providing the final simple solution. As this solution had an uneven number of questions on each
of the factors, the PCA was re-computed using the five highest loadings on each
factor in order to make the scale more parsimonious and the factor means directly
comparable. This solution explained 72.96% of the overall variance, an amount which
exceeds the 60%-65% that Tabachnik and Fidell (1996) recommend is necessary for a
good scale. The independence of the factors is demonstrated by their low inter-
correlations \( r < .46 \) (see Table 8.1).

Table 8. 1. Factor Table from the Rotated Pattern Matrix, and the Percentage of
Variance Explained, Reliability for Each Factor and the Factor Correlation Matrix

<table>
<thead>
<tr>
<th>Item</th>
<th>Responsibility</th>
<th>Strictness</th>
<th>Protection from responsibility</th>
<th>Critical incidents</th>
<th>Peer responsibility &amp; blame</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Do you feel that much of the responsibility for what occurred in the family rested on you?</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Did you feel you were mostly to blame for negative consequences within the family?</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
<td>-.17</td>
</tr>
<tr>
<td>6. Did you feel it was up to you to prevent bad things from happening?</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td>.15</td>
</tr>
<tr>
<td>8. Did you feel that you were to be blamed when things went wrong in the family?</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Were you made to feel responsible for your parents’ feelings?</td>
<td>.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Were codes of conduct strongly enforced at your school?</td>
<td></td>
<td></td>
<td></td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>33. Was morality strongly enforced by your teachers?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.88</td>
</tr>
<tr>
<td>Item</td>
<td>Responsibility</td>
<td>Strictness</td>
<td>Protection from responsibility</td>
<td>Critical incidents</td>
<td>Peer responsibility &amp; blame</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>------------</td>
<td>---------------------------------</td>
<td>--------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>28. Were you expected to follow a strict code of behaviour at your school?</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td>-.13</td>
</tr>
<tr>
<td>30. In general, were your teachers strict?</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Was morality strongly enforced by your parents?</td>
<td>.71</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44. Were you unprepared to cope with difficulties and dangers in life because you were never given responsibility in your family?</td>
<td>.85</td>
<td></td>
<td></td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td>46. Would you say you had a very sheltered upbringing?</td>
<td>.13</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43. Were you prevented from taking responsibility within your family?</td>
<td>.18</td>
<td></td>
<td></td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>50. Do you think you were &quot;wrapped in cotton wool&quot;?</td>
<td>.15</td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49. Was responsibility given to you?</td>
<td>.30</td>
<td>-.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62. Were there ever misfortunes that might have occurred because of something you thought or did?</td>
<td></td>
<td></td>
<td></td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>61. Have any serious incidents nearly occurred because you failed to prevent them?</td>
<td>-.19</td>
<td></td>
<td></td>
<td>.84</td>
<td></td>
</tr>
<tr>
<td>64. Even if you now believe it was a coincidence, have you ever felt responsible for something bad happening because of something you did?</td>
<td></td>
<td></td>
<td></td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Responsibility</td>
<td>Strictness</td>
<td>Protection from responsibility</td>
<td>Critical incidents</td>
<td>Peer responsibility &amp; blame</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>------------</td>
<td>---------------------------------</td>
<td>--------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>65. Even if you now believe it was a coincidence, have you ever felt responsible for something bad happening because of something you failed to do?</td>
<td>.18</td>
<td></td>
<td></td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td>59. Have you contributed to serious misfortunes by doing something to cause them?</td>
<td></td>
<td>-.12</td>
<td></td>
<td></td>
<td>.74</td>
</tr>
<tr>
<td>14. Was it mostly your fault when things went wrong at school?</td>
<td></td>
<td></td>
<td></td>
<td>.13</td>
<td>-91</td>
</tr>
<tr>
<td>13. Was it mostly your fault when things went wrong amongst your friends?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.83</td>
</tr>
<tr>
<td>16. Did you feel that much of the responsibility for what occurred at school rested on you?</td>
<td></td>
<td></td>
<td></td>
<td>.13</td>
<td>-.78</td>
</tr>
<tr>
<td>11. Did you feel you were to blame when things went wrong at school?</td>
<td></td>
<td></td>
<td></td>
<td>.28</td>
<td>-.77</td>
</tr>
<tr>
<td>17. Did you feel that much of the responsibility for what occurred amongst your friends rested on you?</td>
<td></td>
<td></td>
<td></td>
<td>.18</td>
<td>-.74</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>6.96</td>
<td>1.41</td>
<td>1.31</td>
<td>1.05</td>
<td>1.00</td>
</tr>
<tr>
<td>Percent of variance explained</td>
<td>33.04</td>
<td>13.38</td>
<td>12.47</td>
<td>7.57</td>
<td>6.11</td>
</tr>
<tr>
<td>Reliability coefficients α</td>
<td>.90</td>
<td>.90</td>
<td>.86</td>
<td>.88</td>
<td>.91</td>
</tr>
<tr>
<td>Mean</td>
<td>14.6</td>
<td>24.0</td>
<td>22.96</td>
<td>11.91</td>
<td>12.48</td>
</tr>
<tr>
<td>SD</td>
<td>10.68</td>
<td>8.97</td>
<td>9.71</td>
<td>9.42</td>
<td>8.77</td>
</tr>
</tbody>
</table>
Table 8.1 continued
Factor correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>Responsibility</th>
<th>Strictness</th>
<th>Protection from responsibility</th>
<th>Critical incidents</th>
<th>Peer responsibility &amp; blame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibility</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strictness</td>
<td>.18</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection from</td>
<td>.12</td>
<td>.02</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>responsibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical incidents</td>
<td>.40</td>
<td>.15</td>
<td>.08</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Peer blame and</td>
<td>-.46</td>
<td>-.25</td>
<td>-.03</td>
<td>-.44</td>
<td>1</td>
</tr>
<tr>
<td>responsibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Factor one accounted for 33.04% of the variance and was labelled *responsibility*. This factor reflects a family environment where individuals perceived that they were expected to assume a heavy responsibility for averting harm, for their actions, and for the consequences of feelings and events, and for negative outcomes within the family. Also prominent in this factor is the element of blame for negative consequences and outcomes.

Factor two accounted for 13.38% of the variance and was labelled *strictness*. This factor reflects a home and school environment that is perceived as strict and where codes of conduct were strongly enforced.

Factor three accounted for 12.47% of variance and was labelled *protection from responsibility*. The items in this factor relate to ways in which individuals were sheltered and protected from taking on responsibility in life, being “wrapped in cotton wool” and the degree to which responsibility was withheld from them in childhood and adolescence.
Factor four accounted for 7.57% of the variance and was termed *critical incidents.* This factor relates to significant negative incidents which occurred or nearly occurred and for which individuals believed themselves to be responsible. The items tap both actual incidents, whereby individuals know themselves to be responsible for negative outcomes, and also perceived responsibility where a negative outcome may have been coincidental, or a 'near miss' for which individuals hold themselves responsible.

Factor five accounted for 6.11% of the variance and was termed *peer responsibility and blame.* The items of this factor reflect perceptions of blame from peers and within the school environment distinct from the home environment. Each factor demonstrated good internal reliability, as measured by Cronbach's alpha (all $\alpha \geq .86$).

### 8.3 Test – retest of the OIRQ

Two weeks after completing the OIRQ for the first time, participants were requested to complete it again. Data from all respondents were computed into the factors extracted at Time 1 (see Table 8.1) and the test-retest stability coefficients are presented in Table 8.2. All factors demonstrated excellent temporal stability ($\geq .79$) with the exception of critical incidents ($r = .68$), which was adequate (Anastasi, 1982).

<table>
<thead>
<tr>
<th>Time 1</th>
<th>Responsibility</th>
<th>Strictness</th>
<th>Protection from responsibility</th>
<th>Critical incidents</th>
<th>Peer blame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 2</td>
<td>.86**</td>
<td>88**</td>
<td>88**</td>
<td>.68**</td>
<td>.79**</td>
</tr>
</tbody>
</table>

*p < .01 (2-tailed)*
CHAPTER NINE

Study 1 Discussion

Development of the OIRQ

The aim of Study 1 was to develop a questionnaire to identify the origins of inflated responsibility beliefs. Salkovskis et al. (1999) have provided a comprehensive theoretical rationale for the origins of inflated responsibility across five possible domains however, there are no reports in the literature of an instrument devised to assess these origins of inflated responsibility. In addition to these five origins, three other potential origins of inflated responsibility were proposed: TAF, vigilance and guilt and blame (see section 5.1). In the current study, 68 items were written to address each of these domains. PCA was used and five independent and reliable factors were extracted from the data. These factors were labelled responsibility, strictness, protection from responsibility, critical incidents and peer responsibility and blame. Together these factors explained approximately 73% of the variance which is indicative of an excellent scale (Tabachnick & Fidell, 1996).

The first factor yielded from the exploratory analysis was labelled ‘responsibility’ with some of the items conforming to the notion of early, highly developed responsibility for averting negative consequences and for care of family members. The items “Were you made to feel responsible for your parents’ feelings?” and “Did you feel it was up to you to prevent bad things from happening?” best capture this aspect. Also prominent in this factor is the perception of blame for negative consequences within the family that was highlighted by Salkovskis et al. (1999) as a
possible source for the development of inflated responsibility. Either implicitly or explicitly it is communicated to the child or adolescent that they are responsible for negative consequences over which they have little control and for which they are consistently scapegoated. The items “Did you feel that you were to blame when things went wrong in the family?” and “Did you feel that you were mostly to blame for negative consequences within the family?” capture this pattern.

The second factor extracted from the analyses was labelled ‘strictness’ and reflects the hypothesised domain put forward by Salkovskis et al. (1999). These authors noted that the influence of rigid or strict codes of behaviour may be promoted within the home environment, but may also be inculcated by other authoritarian figures such as school teachers and clergy engendering strong responsibility attitudes not only for actions but for thoughts as well. Items on the strictness factor relate to both these environments although mostly to the school environment. Examples of items include “Was morality strongly enforced by your parents?” and “Were you expected to follow a strict code of behaviour at your school?” This factor did not discriminate between responsibility for thoughts and responsibility for actions but rather, it taps into morality and conduct in general.

The third factor was labelled ‘protection from responsibility’ and it contains items that conform to the idea hypothesised by Salkovskis et al. (1999) that inflated responsibility beliefs can develop from a family environment in which worries are prominent and “responsibility is explicitly or implicitly (but obviously) withheld from the child by the parents” (p. 1062). It is suggested that this message throughout
childhood and adolescence is likely to lead to incompetency in dealing with life’s demands and with potential threats, in turn promoting feelings of inadequacy and guilt. The items of this factor relate to this notion of over-protection from responsibility such as “Were you unprepared to cope with difficulties and dangers in life because you were never given responsibility in your family?” and also to the suggestion that families in which this style is prominent would also have parents who are anxious themselves and prone to over indulgence of anxieties and concerns. This theme is tapped by items such as “Would you say you had a very sheltered upbringing?” and “Do you think you were ‘wrapped in cotton wool’?”

The fourth factor was named ‘critical incidents’ and it relates to events in one’s life that the individual believes have contributed to a strong sense of personal responsibility. As noted by Salkovskis et al. (1999), the important element here is that the person believes that they have played a crucial role in bringing about a negative outcome by either causing it or failing to prevent it. Although Salkovskis et al. discriminated between events in which the individual actually contributed to or failed to prevent a negative outcome as opposed to those events in which they believe they may have been instrumental in bringing about but which may in fact have been coincidental, the current factor did not differentiate these possibilities and independence of these two constructs was not found. For example, the items “Even if you now believe it was a coincidence have you ever felt responsible for something bad happening because of something you failed to do?” and “Have you contributed to serious misfortunes by doing something to cause them?” are contained within the same factor and actual or perceived causality were not differentiated.
The fifth factor was the only one of the five that was not hypothesised directly by Salkovskis et al. (1999) and was labelled ‘peer responsibility and blame’. Salkovskis et al. did consider criticism and blame to be interacting factors in that they could “increase the subjective cost of being responsible” (p. 1066) but they did not hypothesise directly the influence of experiences of blame from peers and/or family. They made the point that criticism or blame alone are not sufficient to lead to inflated responsibility. While this point remains to be explored, a factor comprised of items relating to blame, such as “Did you feel you were to blame when things went wrong at school?” and “Did your friends blame you for things you didn’t do?” was extracted from the current data. None of the items of this scale relate to blame and responsibility within the family but only within the school environment and with peers. In a similar way to factor 1, both themes of high responsibility and blame are combined in this factor and are not clearly differentiated. It must also be noted that perceptions of blame and responsibility are not clearly differentiated from actual instances of responsibility. That is to say, the item “Was it mostly your fault when things went wrong at school?” may relate to feelings and perceptions of blame or may indeed relate to fact that the child was mostly at fault. These possibilities are not clearly delineated by the items of this factor. In sum, perceptions of blame at school and among peers is the essence of this factor.

Of the eight domains initially postulated, four were extracted and an additional factor relating to peer blame and responsibility that was not previously postulated was also extracted. The items of peer blame and responsibility relate specifically to feelings of
blame and responsibility for outcomes among peers. Salkovskis et al. proposed that guilt and blame would be interacting factors with inflated responsibility and suggested that systematic experiences of guilt, blame and scapegoating may have their origins in the school or peer environment as much as in the family environment.

From the original pool of items devised, items relating to guilt and blame, and to responsibility were theoretically separated in the family environment, school environment and among peers. However, that these items combined in the factor analysis suggests that themes of guilt, blame and responsibility were not clearly differentiated. Salkovskis et al. posited that blame alone would not be sufficient to lead to an inflated sense of responsibility and in the current analysis these items did not factor together independently of other items relating to high responsibility both at school, as in factor five, and within the family, as in factor one.

Items relating to thought-action fusion and vigilance were not retained in any of the factors. TAF was described as "[a] subtle and complex variation of inflated responsibility" (Salkovskis et al., 1999 p. 1058) and it was considered by the researcher that the cognitive bias of TAF present in some individuals may stand as a predisposing factor to the development of inflated responsibility and could therefore be explored as a separate domain. The independence of TAF as a factor was not borne out in this analysis as none of the items theoretically related to TAF were retained in the final factor solution.
Similarly, no items relating to the theoretical domain of vigilance were retained in the final factor solution. This suggests that these items were not well devised to accurately capture the theme of vigilance, or it might be that the theoretical domain does not correspond well with other origins of inflated responsibility. It may be that the broader factor of protection from responsibility provides a more accurate representation of this theme and as such respondents were more inclined to endorse these items.

In summary, the five domains of responsibility, strict codes of conduct, overprotection from responsibility, critical incidents and peer blame extracted from the current data are indicative of a scale with good psychometric properties.

Furthermore, the origins of inflated responsibility questionnaire will enable an investigation into the possible pathways to the development of inflated responsibility beliefs in OCD sufferers. Five factors extracted from the current data explained 72.9% of the variance which is greater than the 60-65% of variance that Tabachnik and Fidell (1996) suggest is indicative of a good scale. Furthermore, the factors were relatively independent ($r = .02$ to $.46$) and internally reliable. The temporal stability of these factors was demonstrated over a two-week test-retest period with correlations ranging from $r = .68$ to $r = .88$ (all $p < .01$) further indicating their utility as measures of the origins of inflated responsibility. Response rate at time 1 and time 2 were moderate at 31.4%, and lower to that of other studies employing clinical samples (i.e. Tallis, Rosen, & Shafran, 1996) probably owing to the length of the questionnaircs included.
The utility of the OIRQ to predict a sense of inflated responsibility and symptoms of OCD is required, and this investigation forms the basis of study 2.
CHAPTER 10

Study 2

The Origins of Inflated Responsibility and OCD Symptoms

10.1 Aims and Hypotheses

Based upon the literature presented in the preceding chapters, it is the aim of study 2 to explore predictors of inflated responsibility and of OCD symptoms. From the literature it is hypothesised that

- inflated responsibility will predict levels of OCD symptomatology
- inflated responsibility will be predicted by the Origins of Inflated Responsibility (OIRQ)
- personality will be related to inflated responsibility,
- origins of inflated responsibility, inflated responsibility, and personality (neuroticism), will predict levels of OCD.

In terms of group differences, it is predicted that:

- the OCD group will be higher on measures of OCD, inflated responsibility and on all factors of the Origins of Inflated Responsibility Questionnaire than control participants
- OCD sufferers will be lower on psychoticism than non-sufferers but higher on neuroticism.
Method

10.2 Design

This study was a cross-sectional design to assess the contributions of the origins of inflated responsibility and personality to inflated responsibility, and the impact of the origins of inflated responsibility, personality and inflated responsibility on OCD.

10.3 Participants

Eighty-four participants, (60% female; 40% male; age $M = 43.36$; $SD = 12.6$) who identified themselves as having been diagnosed with OCD together with seventy-three non-clinical participants (75% female; 25% male; age $M = 37.14$; $SD = 13.15$) took part in this study. These are the same participants who took part in study 1.

10.4 Instruments

Data gathered in study 1 using the Origins of Inflated Responsibility Questionnaire (see section 8.2.2 for factor structure and Table 8.2 for items) were used in study 2. In addition, the same groups of participants completed the following established instruments:

The Responsibility Attitudes Scale (RAS: Salkovskis, Wroe, Gledhill, Morrison, Forrester, Richards et al., 2000) is a 26-item questionnaire (see appendix F) which assesses responsibility beliefs in OCD sufferers. Using a 7-point Likert scale ranging from 1 = ‘totally disagree’ to 7 = ‘totally agree’, participants rate the degree to which the responsibility belief generally applies to them. Examples of items include “I often
feel responsible for things which go wrong" and "I must protect others from harm".

The authors reported test-retest reliability using Pearson's product moment correlation coefficient of $r = 0.94$, $p < 0.001$. The internal consistency of the 26 items was reported as Cronbach alpha = 0.92. Comparisons showed that RAS mean scores differentiated between an OCD group ($n = 49$, $M = 4.69$, $SD = 1.01$), a non-clinical control group ($n = 143$, $M = 3.48$, $SD = 1.01$), and between an OCD group and an anxious control group ($n = 38$, $M = 4.00$, $SD = 0.92$).

The Padua Inventory (PI: Sanavio, 1988; see appendix G) is a 60-item scale used to assess both the nature and the degree of severity of OC symptoms and was developed in response to the criticism that existing measures of OC symptomatology did not adequately assess obsessional thinking. The original study identified a four factor model accounting for 32% of the variance. Four subscales were derived assessing (1) impaired control over mental activities, (2) becoming contaminated, (3) checking behaviours, and (4) urges and worries about loss of control of motor activities.

Notably, the PI has been employed across several cultures including Italian (Mancini, Gragnani, Orazi & Pietrangeli, 1999; Sanavio, 1988), Dutch (Van Oppen, 1992), North American (Sternberger & Burns, 1990) and Australian (Kyrios, Bhar & Wade, 1996). These studies confirmed the four-factor structure of the PI in non-clinical samples providing normative comparison data. From the total Australian sample, the PI total mean score was ($N = 303$, $M = 42.7$, $SD = 26.4$).

The Eysenck Personality Questionnaire-Revised (EPQ-R: Eysenck & Eysenck, 1991) 100-item scale was used to assess Psychoticism (P), and Neuroticism (N) (Appendix
H). Eysenck and Eysenck (1991) reported reliabilities for the P, and N scales as .78 and .88 respectively and they highlight the usefulness of this scale in research stating that "[p]ersonality as an explanatory concept...play[s] a vital part in explaining and predicting human conduct" (Eysenck & Eysenck, 1991, p. 22).

Procedure

10.5 Ethical approval and recruitment

Ethical approval for the study was given by the Deakin University Ethics Committee. Participants were recruited following the procedures outlined in Study 1 (Chapter 7). All data were anonymous, and participants were assured that no identifying information would be sought or recorded.
CHAPTER ELEVEN

Study 2

Results

11.1 Data screening

The data were analysed using SPSS/PC (Version 11). The data were examined for missing data, normality, outliers, multicollinearity, and singularity. Several items of the EPQ-R’s P and N scales demonstrated an extreme response bias and these items were removed from further analysis (see section 11.3.1).

11.2 Structure and reliability of scales

In order to reduce error variance, the structure, and subsequently the internal reliability of all scales were examined using Principal Components Analysis (PCA) with direct oblimin rotation and Cronbach’s alpha, respectively.

11.2.1 Eysenck Personality Questionnaire-Revised: (EPQ-R) neuroticism and psychoticism

On the EPQ-R, only the P scale and the N scale were examined due to the proposed relevance of these dimensions to OCD and inflated responsibility (see section 5.4). Examination of the individual items revealed that on several items (e.g., “Do you enjoy hurting people you love?”), more than 90% of respondents had endorsed the same option. Accordingly, 22 items were removed from the P scale before conducting a PCA. The final factor structure for P was confirmed with only 10 items from the
original 32 items. These 10 items all loaded ≥ .30 on the one factor, which explained 38.67% of the variance, with an eigenvalue equal to 3.37. Cronbach’s alpha was = .75, indicating the internal reliability of these 10 items (see Table 11.1).

Similarly on the N scale, there was singularity of responses on several items (e.g., “Do you often worry about things you should not have done or said?”, “Do you worry about your health?”, and “Do you often suffer from sleeplessness”) resulting in nine items being removed. Of the 23 items of the N scale, 14 items were retained in the unifactor structure with an eigenvalue of 6.96, accounting for 38.67% of the variance, with alpha α = .89 (see Table 11.2).

Table 11.1 Factor Table from the Rotated Pattern Matrix, the Percentage of Variance Explained, and Reliability for the Psychoticism Factor.

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Would being in debt worry you?</td>
<td>.38</td>
</tr>
<tr>
<td>14. Do you dislike people who don’t know how to behave themselves?</td>
<td>.40</td>
</tr>
<tr>
<td>18. Should people always respect the law?</td>
<td>.75</td>
</tr>
<tr>
<td>21. Are good manners very important?</td>
<td>.63</td>
</tr>
<tr>
<td>41. Do good manners and cleanliness matter much to you?</td>
<td>.65</td>
</tr>
<tr>
<td>88. Is it better to follow society’s rules than go your own way?</td>
<td>.61</td>
</tr>
<tr>
<td>25. Would you take drugs which may have strange or dangerous effects?</td>
<td>-.42</td>
</tr>
<tr>
<td>29. Do you prefer to go your own way rather than act by the rules?</td>
<td>-.77</td>
</tr>
<tr>
<td>42. Have you often gone against your parents’ wishes?</td>
<td>-.49</td>
</tr>
<tr>
<td>75. Do you think people spend too much time safeguarding their future with savings and insurance?</td>
<td>-.38</td>
</tr>
</tbody>
</table>
Table 11.1 continued

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of variance explained</td>
<td>28.10</td>
</tr>
<tr>
<td>Reliability</td>
<td>.75</td>
</tr>
<tr>
<td>Eigenvalues</td>
<td>3.37</td>
</tr>
<tr>
<td>Mean</td>
<td>2.91</td>
</tr>
<tr>
<td>SD</td>
<td>2.47</td>
</tr>
</tbody>
</table>

Table 11.2 Factor Table from the Rotated Pattern Matrix, the Percentage of Variance Explained, and Reliability for the Neuroticism Factor.

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Does you mood often go up and down?</td>
<td>.66</td>
</tr>
<tr>
<td>8. Do you ever feel ‘just miserable’ for no reason?</td>
<td>.58</td>
</tr>
<tr>
<td>17. Are you an irritable person?</td>
<td>.62</td>
</tr>
<tr>
<td>22. Are your feelings easily hurt?</td>
<td>.77</td>
</tr>
<tr>
<td>26. Do you often feel ‘fod-up’?</td>
<td>.67</td>
</tr>
<tr>
<td>31. Are you troubled about feelings of guilt?</td>
<td>.59</td>
</tr>
<tr>
<td>35. Would you call yourself a nervous person?</td>
<td>.79</td>
</tr>
<tr>
<td>38. Are you a worrier?</td>
<td>.58</td>
</tr>
<tr>
<td>43. Do you worry about awful things that might happen?</td>
<td>.68</td>
</tr>
<tr>
<td>46. Would you call yourself tense or ‘highly strung’?</td>
<td>.69</td>
</tr>
<tr>
<td>80. Do you worry too long after an embarrassing experience?</td>
<td>.58</td>
</tr>
<tr>
<td>83. Do you suffer from ‘nerves’?</td>
<td>.64</td>
</tr>
<tr>
<td>84. Do you often feel lonely?</td>
<td>.63</td>
</tr>
<tr>
<td>87. Are you easily hurt when people find fault with you or the work you do?</td>
<td>.61</td>
</tr>
</tbody>
</table>
Table 11.2 continued

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of variance explained</td>
<td>38.67</td>
</tr>
<tr>
<td>Reliability</td>
<td>.89</td>
</tr>
<tr>
<td>Eigenvalues</td>
<td>6.96</td>
</tr>
<tr>
<td>Mean</td>
<td>7.78</td>
</tr>
<tr>
<td>SD</td>
<td>4.46</td>
</tr>
</tbody>
</table>

11.2.2 Responsibility Attitudes Scale (RAS)

The RAS is a single factor scale comprised of 26 items. Twenty-one items were submitted to PCA as the last five items were erroneously omitted from the questionnaire when printed. This error was detected only after questionnaires had been sent to participants. Despite this oversight, the single factor structure of the RAS was confirmed and alpha coefficient remained high (α = .96) and comparable to the reliability coefficient of .92 reported by Salkovskis et al. (2000) in the original study. The single factor of the RAS accounted for 55.69% of the variance, with an eigenvalue of 11.69 (see Table 11.3).

Table 11.3. Factor Table from the Pattern Matrix, and the Percentage of Variance Explained, Reliability for the RAS

<table>
<thead>
<tr>
<th>Item</th>
<th>RAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I often feel responsible for things which go wrong.</td>
<td>.70</td>
</tr>
<tr>
<td>2. If I don’t act when I can foresee danger, then I am to blame for any consequences if it happens.</td>
<td>.69</td>
</tr>
<tr>
<td>3. I am too sensitive to feeling responsible for things going wrong.</td>
<td>.73</td>
</tr>
<tr>
<td>4. If I think bad things, this is as bad as doing bad things.</td>
<td>.59</td>
</tr>
<tr>
<td>5. I worry a great deal about the effects of things which I do or don’t do.</td>
<td>.77</td>
</tr>
<tr>
<td>6. To me, not acting to prevent disaster is as bad as making disaster happen.</td>
<td>.74</td>
</tr>
<tr>
<td>7. If I know that harm is possible, I should always try to prevent it, however likely it seems.</td>
<td>.72</td>
</tr>
</tbody>
</table>
Table 11.3 continued

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8. I must always think through the consequences of even the smallest actions.</td>
<td>.79</td>
</tr>
<tr>
<td>9. I often take responsibility for things which other people don’t think are my fault.</td>
<td>.78</td>
</tr>
<tr>
<td>10. Everything I do can cause serious problems.</td>
<td>.75</td>
</tr>
<tr>
<td>11. I am often close to causing harm.</td>
<td>.68</td>
</tr>
<tr>
<td>12. I must protect others from harm.</td>
<td>.68</td>
</tr>
<tr>
<td>13. I should never cause even the slightest harm to others.</td>
<td>.61</td>
</tr>
<tr>
<td>14. I will be condemned for my actions.</td>
<td>.75</td>
</tr>
<tr>
<td>15. If I can have even a slight influence on things going wrong, then I must act to prevent</td>
<td>.77</td>
</tr>
<tr>
<td>16. To me, not acting where disaster is a slight possibility is as bad as making that disaster happen.</td>
<td>.86</td>
</tr>
<tr>
<td>17. For me, even the slightest carelessness is inexcusable when it might affect other people.</td>
<td>.83</td>
</tr>
<tr>
<td>18. In all kinds of daily situations, my inactivity can cause as much harm as deliberate bad intentions.</td>
<td>.81</td>
</tr>
<tr>
<td>19. Even if harm is a very unlikely possibility, I should always try to prevent it at any cost.</td>
<td>.83</td>
</tr>
<tr>
<td>20. Once I think it is possible that I have caused harm, I can’t forgive myself.</td>
<td>.81</td>
</tr>
<tr>
<td>21. Many of my past actions have been intended to prevent harm to others.</td>
<td>.71</td>
</tr>
</tbody>
</table>

Eigenvalue
Percent of variance explained
Reliability coefficient α
Mean
SD

11.2.3 The Padua Inventory (PI)

The Padua Inventory is made up of 60 items over four factors. After removal of 16 items which failed to contribute to the solution, the simple structure was achieved with four independent factors which were labelled: checking/doubting, contamination/washing, worries over impulses, intrusive thoughts and worries over
mental activities. These new labels are similar to the original factors although in the current data some items loaded onto different factors than in the original structure. Factor one, labelled checking/doubting ($\alpha = .95$) accounted for 37.65% of the variance, and it corresponds to the factor 'checking behaviour' in the original scale. Factor two, labelled contamination/washing ($\alpha = .90$), accounted for 9.69% of variance and corresponds to the original factor labelled 'becoming contaminated'. Factor three, labelled worries over impulses ($\alpha = .82$), accounted for 7.45% of variance and corresponds most closely to the original factor named 'urges and worries of losing control over motor behaviours'. The fourth factor labelled intrusive thoughts and worries over mental activities ($\alpha = .90$), accounted for 4.53% of the variance and corresponds most closely to the original factor of 'impaired control over mental activities'. Together these factors accounted for 59.82% of the variance (see Table 11.4).

Table 11.4. Factor Table from the Rotated Pattern Matrix, and the Percentage of Variance Explained, Reliability for Each Factor and the Factor Correlation Matrix for the Padua Inventory

<table>
<thead>
<tr>
<th>Item</th>
<th>Checking/ doubting</th>
<th>Contam.</th>
<th>Worries over impulses</th>
<th>Intrusive thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. I check and re-check gas and water taps and light switches after turning them off</td>
<td>.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. I check letters many times before posting them</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. I tend to keep on checking things more often than necessary</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. I return home to check doors windows drawers etc., to make sure they are properly shut</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. I keep on checking forms documents, cheques, etc. in detail, to make sure I have filled them in correctly</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 11.4 continued</td>
<td>Checking/ doubting</td>
<td>Contam.</td>
<td>Worries over impulses</td>
<td>Intrusive thoughts</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------</td>
<td>--------</td>
<td>----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>27. Sometimes I am not sure I have done things which in fact I know I have done</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I have to do things several times before I think they are properly done</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. When I handle money I count and re-count it several times</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. I keep on going back to see that matches cigarettes, etc., are properly extinguished</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. After doing something carefully, I still have the impression I have either done it badly or not finished it</td>
<td>.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. I am sometimes late because I keep on doing certain things more often than necessary</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. I tend to ask people to repeat the same things to me several times consecutively, even though I did understand what they said to me the first time</td>
<td>.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. I imagine catastrophic consequences as a result of absent mindedness or minor errors which I make</td>
<td>.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I feel I have to repeat certain numbers for no reason</td>
<td>.51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. I find it difficult to take decisions, even about unimportant matters</td>
<td>.48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. I think or worry at length about having hurt someone without knowing it</td>
<td>.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I think even slight contact with bodily secretions (perspiration, saliva, urine, etc.) may contaminate my clothes and somehow harm me</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I sometimes have to wash or clean myself simply because I think I may be 'dirty' or contaminated</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I wash my hands more often and longer necessary</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I find it difficult to touch an object when I know it has been touched by strangers or by certain people</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. If I touch something I think is 'contaminated' I immediately have to wash or clean myself</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I avoid using public telephones because I am afraid of contagion and disease</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. If an animal touches me, I feel dirty and immediately have to wash myself or change my clothing</td>
<td>0.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I feel hands are dirty when I touch money</td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60. I invent useless worries about germs and diseases</td>
<td>0.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I avoid using public toilets because I am afraid of germs and diseases</td>
<td>0.58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54. I sometimes have an impulse to steal other people's belongings, even if they are of no use to me</td>
<td>0.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55. I am sometimes almost irresistibly tempted to steal something from the supermarket</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48. At certain moments I am tempted to tear off my clothes in public</td>
<td>0.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50. Seeing weapons excites me and makes me think violent thoughts</td>
<td>0.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56. I sometimes have an impulse to hurt defenceless children or animals</td>
<td>0.58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>53. I sometimes feel the need to break or damage things for no reason</td>
<td>0.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59. When I hear about a suicide or crime, I am upset for a long time and find it difficult to stop thinking about it</td>
<td>-0.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45. In certain situations I am afraid of losing my self-control and doing embarrassing things</td>
<td>-0.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. When I read I have the impression I have missed something important and must go back and reread the passage at least two or three times</td>
<td>-0.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Obscene or dirty words come into my mind and I cannot get rid of them</td>
<td>-0.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57. I feel I have to make special gestures or walk in a certain way</td>
<td>-0.65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 11.4 continued

<table>
<thead>
<tr>
<th>Item</th>
<th>Checking/doubting</th>
<th>Contam.</th>
<th>Worries over impulses</th>
<th>Intrusive thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. Unpleasant thoughts come in to my mind against my will and I cannot get rid of them</td>
<td></td>
<td></td>
<td></td>
<td>-.60</td>
</tr>
<tr>
<td>52. I sometimes feel something inside me that makes me do things which are really senseless and which I do not want to do</td>
<td></td>
<td></td>
<td></td>
<td>-.57</td>
</tr>
<tr>
<td>43. I worry about remembering completely unimportant things and make an effort not to forget them</td>
<td></td>
<td></td>
<td></td>
<td>-.54</td>
</tr>
<tr>
<td>35. My brain constantly goes its own way and I find it difficult to attend to what is happening around me</td>
<td></td>
<td></td>
<td></td>
<td>-.52</td>
</tr>
<tr>
<td>46. When I look down from a bridge or a very high window, I feel an impulse to throw myself into space</td>
<td></td>
<td></td>
<td></td>
<td>-.43</td>
</tr>
</tbody>
</table>

| Eigenvalue | 16.32 | 4.17 | 3.21 | 1.95 |
| Percent of variance explained | 37.95 | 9.69 | 7.45 | 4.53 |
| Reliability coefficient α | .95 | .89 | .82 | .89 |
| Mean | 16.79 | 9.94 | 1.00 | 9.94 |
| SD | 16.10 | 9.23 | 2.54 | 9.23 |

**Factor correlation matrix**

<table>
<thead>
<tr>
<th></th>
<th>Checking /doubting</th>
<th>Contamination</th>
<th>Worries over impulses</th>
<th>Intrusive thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checking /doubting</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contamination</td>
<td>.33</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worries over impulses</td>
<td>.16</td>
<td>.18</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Intrusive thoughts</td>
<td>-.47</td>
<td>-.33</td>
<td>-.27</td>
<td>1</td>
</tr>
</tbody>
</table>

11.3 *Group differences*

Multivariate Analyses of Variance (MANOVA) were carried out with group (OCD and control) as the independent variable and OIR, P, and N, as the dependent variables to explore differences between the OCD group and the control group. Pillai's Trace statistic, considered to be the most robust statistic in determining significant multivariate differences especially with unequal sized groups (Tabachnik
& Fidell, 1996), was significant $F(9, 141) = 12.97, p < .001, \eta^2 = .453$ indicating the presence of a multivariate effect for group (OCD and control) on the dependent variables.

Univariate analyses revealed a main effect for groups on all variables excluding strictness (Table 11.5). The OCD group is lower than the control group on psychoticism but higher on all other variables including the Origins of Inflated Responsibility: responsibility, protection from responsibility, critical incidents and peer blame, inflated responsibility, and neuroticism (Table 11.5).

Table 11.5. Means and Standard Deviations for Each Variable by Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control (EPQ-R: $n = 61$)</th>
<th>OCD (EPQ-R: $n = 84$)</th>
<th>$F$</th>
<th>$p$</th>
<th>$H^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIRQ Responsibility M</td>
<td>11.60</td>
<td>16.96</td>
<td>8.34</td>
<td>.004</td>
<td>.05</td>
</tr>
<tr>
<td>SD</td>
<td>8.94</td>
<td>11.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strictness M</td>
<td>23.01</td>
<td>24.50</td>
<td>.25</td>
<td>.611</td>
<td>.00</td>
</tr>
<tr>
<td>SD</td>
<td>8.83</td>
<td>9.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection from responsibility M</td>
<td>13.51</td>
<td>20.06</td>
<td>13.68</td>
<td>.001</td>
<td>.08</td>
</tr>
<tr>
<td>SD</td>
<td>7.98</td>
<td>10.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical incidents M</td>
<td>9.89</td>
<td>13.38</td>
<td>4.8</td>
<td>.030</td>
<td>.03</td>
</tr>
<tr>
<td>SD</td>
<td>7.18</td>
<td>10.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer blame M</td>
<td>10.30</td>
<td>13.92</td>
<td>8.02</td>
<td>.005</td>
<td>.05</td>
</tr>
<tr>
<td>SD</td>
<td>6.51</td>
<td>9.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAS M</td>
<td>72.58</td>
<td>103.77</td>
<td>56.48</td>
<td>.001</td>
<td>.28</td>
</tr>
<tr>
<td>SD</td>
<td>23.13</td>
<td>24.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Padua Inventory Checking M</td>
<td>6.22</td>
<td>25.63</td>
<td>88.01</td>
<td>.001</td>
<td>.37</td>
</tr>
<tr>
<td>SD</td>
<td>7.71</td>
<td>15.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contamination M</td>
<td>3.61</td>
<td>12.01</td>
<td>34.57</td>
<td>.001</td>
<td>.19</td>
</tr>
<tr>
<td>SD</td>
<td>4.29</td>
<td>11.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impulse M</td>
<td>.45</td>
<td>1.47</td>
<td>7.24</td>
<td>.008</td>
<td>.05</td>
</tr>
<tr>
<td>SD</td>
<td>1.04</td>
<td>3.26</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 11.5 continued

<table>
<thead>
<tr>
<th></th>
<th>Obsessions</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>4.60</td>
<td>14.57</td>
<td>66.14</td>
<td>.001</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>5.39</td>
<td>9.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPQ-R</td>
<td>M</td>
<td>5.50</td>
<td>11.53</td>
<td>4.53</td>
<td>.036</td>
<td>.40</td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>SD</td>
<td>3.75</td>
<td>2.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoticism</td>
<td>M</td>
<td>3.75</td>
<td>2.43</td>
<td>60.64</td>
<td>.001</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.84</td>
<td>1.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 11.4 Relationships among the factors

In order to explore the relationships among the factors, a correlation matrix of all variables was produced for each group, control and OCD (see Table 11.6).

A sense of inflated responsibility (RAS) was significantly and similarly related to scores on the total OCD scale (Padua Inventory) in both the clinical \( (r = .54 \ p < .01) \) and the non-clinical \( (r = .58, \ p < .01) \) groups. RAS was also related to the four factors of the PI extracted from the current data: checking/doubting \( (r_{\text{OCD}} = .49; \ r_{\text{control}} = .50) \); contamination/washing \( (r_{\text{OCD}} = .29; \ r_{\text{control}} = .37) \); worries over impulses \( (r_{\text{OCD}} = .32; \ r_{\text{control}} = .19) \); worries over intrusive thoughts \( (r_{\text{OCD}} = .44; \ r_{\text{control}} = .63) \).

Neuroticism was related to inflated responsibility \( (r_{\text{OCD}} = .61; \ r_{\text{control}} = .58) \) but psychoticism was not; neuroticism was also related to levels of OCD \( (r_{\text{OCD}} = .57; \ r_{\text{control}} = .44) \) but psychoticism was not.

In general terms, the pattern of intercorrelations among the variables was similar for both groups, therefore the combined data, with group as an independent variable, were used in subsequent multiple regression analyses.
### Table 11.6 Correlation Matrix for All Variables by OCD Group and Control Group

<table>
<thead>
<tr>
<th>Control Group</th>
<th>RAS</th>
<th>Responsibility</th>
<th>Strict</th>
<th>Protection from responsibility</th>
<th>Critical incidents</th>
<th>Peer blame</th>
<th>Checking</th>
<th>Contam.</th>
<th>Impulses</th>
<th>Intrusive thoughts</th>
<th>OCD</th>
<th>P</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAS</td>
<td>.60**</td>
<td>.48**</td>
<td>.22</td>
<td>.56**</td>
<td>.39**</td>
<td>.50**</td>
<td>.37**</td>
<td>.19</td>
<td>.63**</td>
<td>.58**</td>
<td>.08</td>
<td>.58**</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td>.22</td>
<td>.22</td>
<td>.22</td>
<td>.53**</td>
<td>.55**</td>
<td>.33**</td>
<td>.35**</td>
<td>.33**</td>
<td>.44**</td>
<td>.44**</td>
<td>.02</td>
<td>.33**</td>
<td></td>
</tr>
<tr>
<td>OCD Strictness</td>
<td>.38**</td>
<td>.24*</td>
<td>-.18</td>
<td>.27*</td>
<td>.33**</td>
<td>-.04</td>
<td>.09</td>
<td>-.10</td>
<td>.16</td>
<td>.05</td>
<td>-.19</td>
<td>-.00</td>
<td></td>
</tr>
<tr>
<td>OCD Protection</td>
<td>.25*</td>
<td>.21*</td>
<td>.18</td>
<td>-.04</td>
<td>-.15</td>
<td>.36**</td>
<td>.23**</td>
<td>-.07</td>
<td>.20</td>
<td>.34**</td>
<td>-.11</td>
<td>.35*</td>
<td></td>
</tr>
<tr>
<td>OCD from respond.</td>
<td>.45**</td>
<td>.46*</td>
<td>.11</td>
<td>.45*</td>
<td>.37**</td>
<td>.37**</td>
<td>.20</td>
<td>.49**</td>
<td>.47**</td>
<td>.07</td>
<td>.41**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCD Critical incidents</td>
<td>.42**</td>
<td>.59*</td>
<td>.26*</td>
<td>.25*</td>
<td>.51**</td>
<td>.22</td>
<td>.28*</td>
<td>.35**</td>
<td>.32**</td>
<td>.06</td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCD Peer Blame</td>
<td>.49**</td>
<td>.31**</td>
<td>.21</td>
<td>.18</td>
<td>.34**</td>
<td>.45**</td>
<td>.84**</td>
<td>.93**</td>
<td>.19</td>
<td>.38**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCD Checking Contamination</td>
<td>.29**</td>
<td>.06</td>
<td>.17</td>
<td>.18</td>
<td>.34**</td>
<td>.45**</td>
<td>.84**</td>
<td>.93**</td>
<td>.19</td>
<td>.38**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCD Impulses Intrusive Thoughts</td>
<td>.32**</td>
<td>.28**</td>
<td>.28*</td>
<td>.21</td>
<td>.35**</td>
<td>.27**</td>
<td>.21**</td>
<td>.21**</td>
<td>.42**</td>
<td>.43**</td>
<td>-.03</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>OCD Thoughts</td>
<td>.44**</td>
<td>.35**</td>
<td>.23**</td>
<td>.24*</td>
<td>.37**</td>
<td>.52**</td>
<td>.29**</td>
<td>.52**</td>
<td>.91**</td>
<td>.52**</td>
<td>-.11</td>
<td>.52**</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation significant at the 0.01 level (2-tailed)  
* Correlation significant at the 0.05 level (2-tailed)
11.5 Predicting inflated responsibility from the Origins of Inflated Responsibility

A multiple regression analysis was conducted to test the hypothesis that Origins of Inflated Responsibility: responsibility, strictness, protection from responsibility, critical incidents and peer blame and responsibility, would predict levels of inflated responsibility. Table 11.7. displays the unstandardised regression coefficients (B), the standardised coefficients (β), the semi-partial correlations (sr²), R, R², and adjusted R². R for regression was significantly different from zero, F(5, 151) 24.26, p < .001 and together, the five origins of inflated responsibility accounted for 44.5% of overall variance in inflated responsibility. Examination of the t-values shows that peer blame was the only variable that did not contribute significantly to inflated responsibility.

Twenty-nine per cent of the variance in the OIR predictors was shared, while responsibility exhibited 6% unique variance in inflated responsibility, and protection from responsibility exhibited 5% unique variance, critical incidents and strictness exhibited 3% and 1% unique variance respectively.

Table 11.7 Standard Multiple Regression of Origins of Inflated Responsibility Variables on Inflated Responsibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>β</th>
<th>sr² (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibility</td>
<td>.86</td>
<td>.323**</td>
<td>.06</td>
</tr>
<tr>
<td>Strictness</td>
<td>.45</td>
<td>.144*</td>
<td>.01</td>
</tr>
<tr>
<td>Protection from responsibility</td>
<td>.69</td>
<td>.235**</td>
<td>.05</td>
</tr>
<tr>
<td>Critical incidents</td>
<td>.72</td>
<td>.239**</td>
<td>.03</td>
</tr>
<tr>
<td>Peer blame R = .67</td>
<td>.20</td>
<td>.061</td>
<td></td>
</tr>
</tbody>
</table>

R² = .45

Adj. R² = .43

** p< .001, * p< .05

Unique Sr² .15

Shared Sr² .29
11.6 Predicting inflated responsibility by group and Origins of Inflated Responsibility

The previous analysis was conducted using the total sample. Despite the similarity of correlations within each group, the two groups (OCD and controls) differed on most of the variables, therefore it was necessary to take account of group membership in the prediction of inflated responsibility from the Origins of Inflated Responsibility.

A hierarchical multiple regression analysis was run with the inclusion of group at step 1, together with the five sources of inflated responsibility (OIRQ) entered at step 2, to predict levels of inflated responsibility. Group on its own contributed significantly to predicting levels of inflated responsibility, \( F(1, 155) = 61.82, p < .001 \) and accounted for 28.5% of variance. The high amount of variance accounted for by group alone indicates that group membership is a strong predictor of higher levels of inflated responsibility, in this case, having a diagnosis of OCD is a strong predictor of inflated responsibility. At step 2, the inclusion with the five OIR variables, the independent variable accounted for 56.8% of the variance in inflated responsibility. The \( R = .75, R^2 = 56\% \), and adjusted \( R^2 = .55 \) were significantly different from zero. The \( R \) change from step 1 to step 2 was also significant, \( R^2 \) change .28, \( F_{5,150} = 19.60, p < .001 \).

Statistics are presented in table 11.8.
### Table 11.8. Origins of Inflated Responsibility and Group on Inflated Responsibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>β</th>
<th>sr² (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group</strong></td>
<td>30.30</td>
<td>.53**</td>
<td>.28</td>
</tr>
</tbody>
</table>

R = .53

R² = .28

Adj. R² = .28

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>β</th>
<th>sr² (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group</strong></td>
<td>21.37</td>
<td>.37*</td>
<td>.12</td>
</tr>
<tr>
<td>Responsibility</td>
<td>.11</td>
<td>.03</td>
<td>-</td>
</tr>
<tr>
<td>Strictness</td>
<td>.69</td>
<td>.23*</td>
<td>.03</td>
</tr>
<tr>
<td>Protection from responsibility</td>
<td>.46</td>
<td>.14*</td>
<td>.01</td>
</tr>
<tr>
<td>Critical incidents</td>
<td>.72</td>
<td>.27**</td>
<td>.04</td>
</tr>
<tr>
<td>Peer blame</td>
<td>.37</td>
<td>.12</td>
<td>.01</td>
</tr>
</tbody>
</table>

R = .75

R² = .56

Adj. R² = .55

<table>
<thead>
<tr>
<th></th>
<th>Unique sr²</th>
<th>Shared sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sr² values &lt; .01 not calculated</strong></td>
<td>.21</td>
<td>.35</td>
</tr>
</tbody>
</table>

**p< .001, *p< .05**

With all variables entered into the equation, group (i.e. having OCD) explained 12% unique variance, and the Origins of Inflated Responsibility, namely critical incidents, strictness, protection from responsibility and peer blame uniquely explained 4%, 3%, 1% and 1% of the variance in inflated responsibility. The shared variance among these predictor variables was 35% of the 56% of variance explained in inflated responsibility.
11.7 Predicting levels of inflated responsibility with the Origins of Inflated Responsibility by control group

A third multiple regression analysis was conducted to assess the contribution of the five sources of inflated responsibility from the OIR to inflated responsibility (RAS) for each group. For the control group, \( R \) was significantly different from zero, \( F(5, 65) = 12.06, p < .001 \) and the five factors together accounted for 48% of overall variance in inflated responsibility. Nineteen percent of variance in inflated responsibility was accounted for uniquely by the OIR variables and 29% of variance was shared by the OIR variables. The factors critical incidents, responsibility and protection from responsibility contributed significantly to the overall variance whereas peer responsibility and blame and strictness did not. Table 11.9 displays the standardised and unstandardised coefficients and the unique variance and shared variance for these factors.

Table 11.9. Origins of Inflated Responsibility by Control Group on Inflated Responsibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>( \beta )</th>
<th>( sr^2 ) (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibility</td>
<td>1.02</td>
<td>.40**</td>
<td>.09</td>
</tr>
<tr>
<td>Strictness</td>
<td>.16</td>
<td>.06</td>
<td>-</td>
</tr>
<tr>
<td>Protection from responsibility</td>
<td>.61</td>
<td>.21*</td>
<td>.04</td>
</tr>
<tr>
<td>Critical incidents</td>
<td>.98</td>
<td>.31*</td>
<td>.06</td>
</tr>
<tr>
<td>Peer blame</td>
<td>.15</td>
<td>.04</td>
<td>-</td>
</tr>
<tr>
<td>( R = .69 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( R^2 = .48 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( Adj. R^2 = .44 )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unique \( sr^2 \) = .19

Shared \( sr^2 \) = .29

\( Sr^2 \) values < .01 not calculated, **p < .001, *p < .05
The pattern of predictors for the control group alone was similar to that for the total sample (see Table 11.8) as was the amount of explained variance.

11.8 Predicting levels of inflated responsibility with the Origins of Inflated Responsibility by OCD group

The five factors of the OIRQ by the OCD group significantly influenced inflated responsibility $F(5, 80) = 9.91, p < .001$ and accounted for 38% of overall variance in inflated responsibility. Thirteen percent of variance in inflated responsibility was uniquely accounted for by the OIR variables and 25% of variance in inflated responsibility was shared between these variables. Critical incidents, strictness, and responsibility contributed significantly while peer blame and protection from responsibility did not. Results are displayed in Table 11.10.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>$\beta$</th>
<th>$sr^2$ (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibility</td>
<td>.52</td>
<td>.24*</td>
<td>.03</td>
</tr>
<tr>
<td>Strictness</td>
<td>.61</td>
<td>.26*</td>
<td>.05</td>
</tr>
<tr>
<td>Protect from responsibility</td>
<td>.26</td>
<td>.11</td>
<td>.01</td>
</tr>
<tr>
<td>Critical incidents</td>
<td>.61</td>
<td>.26*</td>
<td>.04</td>
</tr>
<tr>
<td>Peer blame</td>
<td>.16</td>
<td>.06</td>
<td>-</td>
</tr>
</tbody>
</table>

$R = .61$

$R^2 = .38$  
Unique $sr^2 = .13$

Adj. $R^2 = .34$  
Shared $sr^2 = .25$

$sr^2$ values $< .01$ not calculated

**$p < .001$, *$p < .05$
The amount of variance explained in a sense of inflated responsibility for the OCD group alone ($R^2 = .38$) is slightly lower than the variance explained in the regression using just the control participants ($R^2 = .48$), and the total sample ($R^2 = .45$), but these differences were not significant.

11.9 Predicting inflated responsibility by group and neuroticism

A hierarchical multiple regression to predict levels of inflated responsibility by group and by the personality variable, neuroticism, was conducted with group entered at step one $F(1, 99) = 38.18, p < .001$ which explained 27% of the variance then group plus the personality variable neuroticism entered at step 2, $F(2, 98) = 53.09, p < .001$. Psychoticism was not entered as it failed to univariately correlate with inflated responsibility for either group (see Table 11.6). $F$ was significantly different from zero at each step, and $F$ change 2, 150 = 23.85, $p < .001$ was significant. Together the variables accounted for 52% of the overall variance in inflated responsibility but when neuroticism ($5r^2 = 24\%$) was added to the equation on step 2 it subsumed the unique variance in group as a predictor of inflated responsibility. T-values indicated that neuroticism and group significantly influenced inflated responsibility. That is, neuroticism uniquely accounted for 24% of variance in inflated responsibility while 27% of the variance in inflated responsibility was shared between group and neuroticism. Clearly, the effect of neuroticism on both inflated responsibility and on group is substantial as, on step 2 with both group and neuroticism entered, it is only neuroticism which makes any substantial prediction. Statistics are presented in table 11.11.
Table 11.11 Regression Statistics for Neuroticism and Group on Inflated Responsibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>β</th>
<th>sr² (unique)</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>29.47</td>
<td>.53**</td>
<td>.27</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Adj. R²</td>
</tr>
<tr>
<td>Group</td>
<td>8.56</td>
<td>17+</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>3.82</td>
<td>.61**</td>
<td>.24</td>
<td></td>
</tr>
</tbody>
</table>

R = .72

R² = .52

Adj. R² = .51

sr² values < .01 not calculated. Note: These values vary marginally across analyses due to patterns of missing data.

11.10 Predicting OCD from inflated responsibility, origins of inflated responsibility, and neuroticism

A total score for level of OCD was calculated by summing the scores of each of the four domains of the Padua Inventory. Hierarchical multiple regression analysis was then conducted to assess the contribution of all variables excluding psychoticism to OCD. Psychoticism was excluded from the analysis as it was not bivariately related to OCD (see correlation matrix, Table 11.6). Variables were entered into the multiple regression in three steps. Results are presented in Table 11.12 and Table 11.13. F was significantly different from zero at step 1, 2, 3, and 4. R² change was significant on steps 1 and 2 but not on step 3 and 4 where origins of inflated responsibility and neuroticism were entered respectively (see Table 11.12). Group was a significant predictor of OCD. R = .60, R² = .36 at step 1, where group equals to OCD. Inflated
responsibility (RAS) was a significant predictor of OCD ($r^2 = 18\%$) with group's contribution reducing to 8% unique variance on step 2. The addition of the OIR at step 3 revealed only protection from responsibility was a significant predictor of OCD ($sr^2 = 2\%$). Neuroticism entered at step 4 failed to add to the solution. Overall, with all variables in the model, $R = .77$, $R^2 = .59$, the unique predictors were group ($sr^2 = 3\%$), inflated responsibility ($sr^2 = 4\%$), protection from responsibility ($sr^2 = 2\%$) and peer blame ($sr^2 = 1\%$). There was 17% of the explained variance in OCD shared by the independent variables, that is, group, sense of inflated responsibility, the origins of inflated responsibility and neuroticism shared 17% of the explained variance in OCD.

Table 11.12. Regression Statistics for Group, OIR, Neuroticism on OCD as Entered into a Hierarchical Regression

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adj. $R^2$</th>
<th>$R^2$ change</th>
<th>F change</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.60</td>
<td>.36</td>
<td>.35</td>
<td>.36</td>
<td>55.69</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>2</td>
<td>.73</td>
<td>.54</td>
<td>.53</td>
<td>.18</td>
<td>38.01</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>3</td>
<td>.77</td>
<td>.59</td>
<td>.56</td>
<td>.05</td>
<td>2.31</td>
<td>&lt; .051</td>
</tr>
<tr>
<td>4</td>
<td>.77</td>
<td>.60</td>
<td>.56</td>
<td>.00</td>
<td>1.03</td>
<td>.314</td>
</tr>
</tbody>
</table>
Table 11.13. Model Summary, Unstandardised Regression Coefficients (B), Standardised Regression Coefficients (β), and Semi-partial Correlations for all predictors of OCD

<table>
<thead>
<tr>
<th>DV = OCD</th>
<th>B</th>
<th>β</th>
<th>sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Group</td>
<td>37.09**</td>
<td>.60</td>
</tr>
<tr>
<td>2</td>
<td>Group</td>
<td>20.85**</td>
<td>.34</td>
</tr>
<tr>
<td></td>
<td>RAS</td>
<td>.54*</td>
<td>.49</td>
</tr>
<tr>
<td>3</td>
<td>Group</td>
<td>17.28**</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td>RAS</td>
<td>.42**</td>
<td>.39</td>
</tr>
<tr>
<td></td>
<td>Peer blame</td>
<td>.52</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td>Critical Incidents</td>
<td>.03</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Strictness</td>
<td>-.29</td>
<td>-.08</td>
</tr>
<tr>
<td></td>
<td>Responsibility</td>
<td>-.04</td>
<td>-.02</td>
</tr>
<tr>
<td></td>
<td>Protection from responsibility</td>
<td>.62*</td>
<td>.19</td>
</tr>
<tr>
<td>4</td>
<td>Group</td>
<td>15.56*</td>
<td>.25</td>
</tr>
<tr>
<td></td>
<td>RAS</td>
<td>.37*</td>
<td>.34</td>
</tr>
<tr>
<td></td>
<td>Peer blame</td>
<td>.51</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td>Critical Incidents</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Strictness</td>
<td>-.25</td>
<td>-.08</td>
</tr>
<tr>
<td></td>
<td>Responsibility</td>
<td>-.04</td>
<td>-.02</td>
</tr>
<tr>
<td></td>
<td>Protection from responsibility</td>
<td>.57</td>
<td>.17</td>
</tr>
<tr>
<td></td>
<td>Neuroticism</td>
<td>.70</td>
<td>.11</td>
</tr>
</tbody>
</table>

R = .77  
Unique sr²  = .11

R² = .59  
Shared sr²  = .49

**p < .001,  *p < .05
11.11 Structural equation modelling of relationships among origins of inflated responsibility, personality, inflated responsibility and OCD symptoms.

The variables that were univariately correlated with OCD (see Table 11.6) together with those variables that were significant predictors of either a sense of inflated responsibility or of OCD (see Tables 11.8, 11.11, 11.12, 11.13) were analysed simultaneously using Structural Equation Modelling (SEM) (see Figure 11.1). SEM analysis allows for testing of hypothesised paths among the variables rather than a simple linear pathway as in multiple regression. Despite the small sample sizes, the SEMs were run initially for each group. A comparison of the $\chi^2$ values for the control groups and the OCD group, $\chi^2.\text{diff} (42) = 43.9$, $p > .05$, revealed no difference in the overall fit of the two models therefore, the analysis was computed using the total sample to increase the sample size to an acceptable level.

The Independence $\chi^2 (66) = 2576.68$, $p < .001$ indicated the suitability of the covariance matrix for SEM. The data provided a good fit to the model, $\chi^2 (40) = 77.54$, $p < .001$, Normed $\chi^2 = 1.94$, Goodness of Fit .96, Adjusted Goodness of Fit .95, Normed Fit Index , .97, Incremental Fit Index .98, Comparative Fit Index .98, and RMSEA .07, $p$ close = .043.

Neuroticism exerted a direct effect on the Origins of Inflated Responsibility (OIR) ($\beta = .53$) explaining 28% of the variance in OIR; neuroticism also exerted a direct effect on inflated responsibility (RAS) ($\beta = .49$) as did the combined OIRs ($\beta = .44$). Neuroticism also exerted an indirect effect on inflated responsibility through the OIRs ($\beta = .23$) for a total effect on inflated responsibility of $\beta = .72$ (see Table 11.13).
Together the OIRs and neuroticism explained 66% of the variance in scores on inflated responsibility.

All latent variables in the model, neuroticism, (\( \beta = .35 \)), OIRs (\( \beta = .21 \)), and inflated responsibility (\( \beta = .34 \)) loaded on to OCD and, together these variables in the model, explained 63% of the variance in the symptoms of OCD. The total effects of the factors in the model are presented in Table 11.14.

<table>
<thead>
<tr>
<th></th>
<th>Neuroticism</th>
<th>OIR</th>
<th>Inflated responsibility</th>
<th>Total OCD score</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIR</td>
<td>.53</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Inflated responsibility</td>
<td>.72</td>
<td>.44</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Total OCD</td>
<td>.71</td>
<td>.36</td>
<td>.34</td>
<td>.00</td>
</tr>
<tr>
<td>RAS</td>
<td>.72</td>
<td>.44</td>
<td>1.00</td>
<td>.00</td>
</tr>
<tr>
<td>Checking</td>
<td>.58</td>
<td>.29</td>
<td>.28</td>
<td>.82</td>
</tr>
<tr>
<td>Contamination</td>
<td>.39</td>
<td>.20</td>
<td>.19</td>
<td>.55</td>
</tr>
<tr>
<td>Impulse</td>
<td>.37</td>
<td>.19</td>
<td>.18</td>
<td>.52</td>
</tr>
<tr>
<td>Obsessions</td>
<td>.62</td>
<td>.31</td>
<td>.30</td>
<td>.87</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.99</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Peer blame</td>
<td>.38</td>
<td>.72</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Critical incidents</td>
<td>.35</td>
<td>.65</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Protection from responsibility</td>
<td>.14</td>
<td>.27</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Strictness</td>
<td>.18</td>
<td>.34</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Responsibility</td>
<td>.42</td>
<td>.79</td>
<td>.00</td>
<td>.00</td>
</tr>
</tbody>
</table>
11.11.1 Total effects

Consideration of the total effects reveals that neuroticism contributed substantially to OCD (Total Effect = .71) to inflated responsibility (Total Effect = .72) as well as substantially to the OIRs (Total Effect = .53) and all factors of the OIRQs and of the PI.

OIRs (Total Effect = .71) contributed substantially to inflated responsibility (Total Effect = .44), and to OCD (Total Effect = .36). In terms of the total effects on OCD, inflated responsibility (Total Effect = .34) was approximately equivalent to the effects seen for OIRs (Total Effect = .34).

The following chapter offers an explanation and discussion of the findings from the Structural Equation Modelling Analysis.
Figure 11.1. Structural equation model of relationships among the origins of inflated responsibility, neuroticism, inflated responsibility and OCD
CHAPTER TWELVE

Study 2 Discussion

Inflated Responsibility, the Origins of Inflated Responsibility, and Personality

The aims of study 2 were two fold. Firstly, to explore the predictors of inflated responsibility using the Origins of Inflated Responsibility Questionnaire developed in study 1. Secondly, to explore the role of the origins of inflated responsibility (OIR), inflated responsibility and neuroticism as predictors of OCD. In addition, scores on the OIRs, inflated responsibility, personality and symptoms of OCD were examined for differences between people with OCD and a sample of control participants.

12.1 Factor analyses

Before considering the study’s main results, it is important to review the results of the factor analyses carried out to determine the structure and reliability of the instruments in the current data.

12.1.1 The structure and reliability of the Responsibility Attitudes Scale

The unifactoral structure of the Responsibility Attitudes Scale (RAS; Salkovskis et al., 2000) was confirmed using 21-items. The RAS demonstrated high internal reliability in the current data which concurs with results of other studies in which strong reliability of the RAS has been found (Salkovskis et al., 2000; Småri & Holmsteinsson, 2001). In addition, the RAS explained 56% of the variance, which Tabachnik and Fidell (1996) suggest is indicative of a good scale.
12.1.2 The structure and reliability of the Eysenck Personality Questionnaire—Revised

While the EPQ-R is a widely used scale (e.g., Ferguson, 2001; San Martini, Mazzotti, & Setaro, 1996; Scarabelotti et al., 1995) designed to assess the personality dimensions of psychoticism-neuroticism and introversion-extroversion, in the current study only the psychoticism-neuroticism scale was used. A severely skewed response bias was found on several items in both scales but particularly those on the psychoticism scale. The problem of response bias within scales of the EPQ-R has been identified in other studies (e.g., San Martini et al., 1996), which have also highlighted excessively skewed distributions. Given the nature of the domains encompassed by the psychoticism factors (e.g., hostility, cruelty, lack of empathy, deviance) it would not be expected that either OCD sufferers or non-clinical respondents would endorse a large number of these items hence, the predominantly negative skewed.

In the current study, 10 items were retained from the psychoticism scale and these items explained 28% of the variance which, according to Tabachnick and Fidell (1996), is acceptable. These items demonstrated good internal reliability which concurs with the study by San Martini et al. (1996) in which 10 items were also retained, although the same items were not retained across the two studies. This lack of item similarity suggests it is important to identify the factor structure present in each sample even at the expense of the factor structure being sample specific.
Similarly with the neuroticism scale, items such as "are you touchy about some things" are likely to be endorsed by most people, whether suffering from OCD or not, and therefore they are not likely to be items with good discriminatory ability. In the current data, 14 items were retained in the final unifactor solution. This factor explained approximately 39% of the variance and demonstrated good reliability. Again, the reduction in items on the neuroticism scale and the subsequent reliability is similar to that reported by San Martini et al. (1996). The same limitations in terms of generalisability apply to the neuroticism scale as to the psychoticism scale.

In summary, the Principal Components Analysis (PCA) and the internal reliability analyses indicate that the scales are factorially valid and reliable in the current data. While the use of these factors in further analyses will minimise error variance in the current data, their use also reduces direct comparisons to data from other studies.

12.1.3 The structure and reliability of the Padua Inventory

PCA of the Padua Inventory (PI: Sanavio, 1988; see appendix G) revealed four factors: checking/doubting, contamination/washing, worries over impulses, intrusive thoughts and worries over mental activities, which together explained approximately 60% of the variance. The Padua Inventory has been used widely in OCD research and across a broad range of cultural settings (see section 10.4). The four factors extracted from the current data demonstrated considerable overlap with items on the original four factors that were proposed by Sanavio (1988) but they were not an exact replication. Despite this diversity, the factors extracted from the current data were all internally reliable (all $\alpha \geq .82$) and these reliability figures are comparable to those of
other studies (Kyrios, Bhar, & Wade, 1996; Sternberger & Burns, 1990) despite the slight variability in the factor items. The four factors were independent, with the highest inter-factor correlation ($r = -.47$) between checking/doubting and intrusive thoughts. This relationship is negative solely because of the negative loadings for all items on the fourth factor, intrusive thoughts and worries over mental activities, in the PCA (see table 11.5). A relationship between these two factors is to be expected.

12.2 Group differences

Multivariate Analysis of Variance confirmed that, as expected, the OCD group was higher on the four factors of the Padua Inventory: checking/doubting, contamination/washing, worries over impulses, intrusive thoughts and worries over mental activities.

In addition, the OCD group also scored significantly higher on the RAS, that is, they reported having a greater sense of inflated responsibility. This finding supports a growing body of research that has highlighted inflated responsibility as a feature of OCD and one that differentiates sufferers from non-sufferers (Ladouceur et al., 1995; Salkovskis, 1989; Salkovskis et al., 2000; Shafran, 1997; Steketee et al., 1998).

OCD participants were also higher on four of the five factors of the Origins of Inflated Responsibility Questionnaire (OIRQ) which were assessed in terms of when you were “a child or adolescent”: responsibility, protection from responsibility, critical incidents, and peer blame. However, the two groups did not differ on their levels of strictness. The higher scores on the responsibility factor indicate that OCD
sufferers identified a family environment or upbringing in which they were made responsible for the care and well being, either emotional and/or physical, of family members. They were also made to feel responsible for negative outcomes, such as when things went wrong in the family, or for their parents’ emotions.

OCD participants were higher on responsibility than the control group suggesting that a childhood in which responsibility and blame for negative outcomes, as well as a high level of responsibility for the care and well being of self and others is more frequently identified by OCD sufferers than non-sufferers. OCD participants also endorsed more items relating to protection from responsibility than did the control group. This lower score suggests that a childhood in which they were prevented from taking responsibility for themselves and others and being over-protected is a characteristic of early family life for OCD sufferers. Of course, it is also possible, though somewhat circular, that these are perceptual differences between OCD sufferers and control participants in terms of the early environment and upbringing. Whether this is true or not, ratings on these factors represent ‘perceptual reality’ for OCD sufferers which differs from that of non-sufferers.

OCD sufferers identified critical incidents in their lives more than the control group. While a small body of research (reviewed in section 5.1) exists to suggest a link between critical incidents (Black, 1974), life events (Albert et al., Lockman et al., 1999) and OCD, the link between critical incidents and inflated responsibility has not been empirically tested. The results of this study indicate a link between critical
incidence and inflated responsibility but also, add to the growing literature that suggests a link between critical incidents and OCD symptoms.

OCD participants perceived more blame and responsibility from their peers for negative outcomes during childhood and adolescence than did non-OCD sufferers. When viewed in conjunction with the findings from family environment discussed above, a picture is presented of high responsibility and blame for negative outcomes across both family and peer domains. Salkovskis et al. (1999) suggested that blame might be an interacting factor that would serve to inflate responsibility further and that systematic blame may emanate from within and without the family environment. These results support this hypothesis and suggest a global experience of perceived responsibility and blame among OCD sufferers.

However, it is also important to consider an alternative explanation for these differences. It might be that these reports of blame and responsibility for negative outcomes that are pervasive for the OCD sufferers, that is, across family and peer environments, are actually another cognitive distortion on the part of sufferers. Or, it might be that persons with a vulnerability to OCD attract more negative experiences of this nature. It might be that their personality attracts more negative responses from others among which are scapegoating, criticism and blame. Certainly support for the hypothesis that OCD sufferers would score more highly on neuroticism can be interpreted to suggest such a vulnerability or it might be that the very nature of neuroticism incites in them and/or others a sense of inflated responsibility for negative outcomes, guilt, blame and criticism. The finding that neuroticism is higher
among OCD sufferers has been consistently borne out in other studies (Hirschfield &
Klerman; Pollack, 1979; Watson et al., 1988) where a positive relationship has been
demonstrated between neuroticism and OCD. While the current finding is consistent
with other studies demonstrating support for the relationship between neuroticism and
anxiety disorders, it does not indicate the causal sequence of neuroticism in OCD.

As was hypothesised, the OCD group was lower on psychoticism compared to the
control group. Given that psychoticism is the dimensional opposite of neuroticism, it
follows that OCD participants would score lower on this measure. Psychoticism is
characterised by aspects such as lack of empathy, deviance, lack of regard for others,
impulsiveness, and low levels of responsibility, which are contrasted with aspects of
conscientiousness, personal responsibility for self and others, sensitivity, and
indecision often associated with OCD sufferers. In support of this association,
Scarabelotti et al. (1995) found that psychoticism was not a good predictor of
obsessions and compulsions but was associated with increases in responsibility in
OCD sufferers. Despite the group difference on psychoticism in the current data,
psychoticism failed to correlate with OCD.

Together these findings demonstrated clear differences on factors involved in a
cognitive-behavioural model of inflated responsibility and OCD, between people with
OCD and those who do not have OCD. These differences are cross-sectional in nature
limiting the interpretation of these findings. A better understanding of the impact of
these factors in inflated responsibility and OCD can be demonstrated by an
examination of the inter-relationships among these factors.
12.3 Interrelationship among the factors

It is quite clear from the correlation matrix that a sense of inflated responsibility is related to higher OCD in both clinical and non-clinical groups. The strong relationship between checking and inflated responsibility supports the finding from previous literature (Rachman, 1993; 2002) where inflated responsibility was described as a common characteristic of compulsive checkers. Rachman and Shafran (1998) also highlighted the greater tendency for checkers (and doubters) over sufferers with other symptom subtypes such as washers, to experience higher levels of inflated responsibility. The authors did not suggest that inflated responsibility would be absent in other subgroups but only that inflated responsibility was higher and more pronounced among checkers. While inflated responsibility was significantly correlated with the four factors of the Padua Inventory, it correlated most highly with checking in the current data.

Just as importantly for the aims of the current study, the five origins of inflated responsibility were also correlated with the RAS in the clinical group and, with the exception of protection from responsibility, in the control group. While not conclusive, these correlations provide encouraging support for the validity of the OIR in inflated responsibility. Aside from providing some initial support for the origins of inflated responsibility proposed by Salkovskis et al. (1999) and the empirically derived factors of study 1, the presence of these correlations also enables further exploration of their utility in contributing to inflated responsibility and to OCD using both multiple regression and Structural Equation Modelling Analyses.
It is also interesting to note that the OIR correlate with OCD itself in the clinical group, and except for the factor strictness, also in the control group. It might be that these origins of inflated responsibility as well as inflated responsibility itself have an impact on OCD and across its various symptoms as assessed here.

12.4 Predicting inflated responsibility

A series of multiple regression analyses were conducted to determine if the five OIR factors do predict inflated responsibility. Overall, the results indicate conclusively that the OIR are predictive of inflated responsibility. This predictive utility holds true when the total sample is employed \( (R^2 = 45\%) \), when group is entered at step 1 followed by the OIR at step 2 \( (R^2 \text{ change} = 28\%) \), and when the multiple regression analyses are conducted for each group separately \( (R^2 \text{ control} = 48\%, R^2 \text{ OCD} = 38\%) \). There is some variability in the pattern of unique predictors across these four multiple regressions but essentially the shared variance remains reasonably constant, suggesting that the variation in the unique contributions may not be of great relevance. Rather, it seems to be that overall, a childhood milieu which is viewed by the respondents as over-protective and over-burdensome of responsibility, is indicative of a general factor that is implicated in generating a sense of inflated responsibility.

These findings lend support to Salkovskis et al.'s (1999) proposal that both too much responsibility and too little responsibility in childhood can promote the development of inflated responsibility. This U-shaped distribution is indicative of other negative
paradigms in the literature. For instance, parenting styles that are authoritarian or overly permissive are both more detrimental to the child than one that maintains balance (Berk, 2000) Research into familial factors and parenting styles have suggested similar patterns of influence on the development of OCD. Hibbs et al. (1991) found that high expressed emotion (a measure of over-involvement of family members) was frequent in the parents of children and adolescents with OCD when compared to normal controls. Turgeon et al. (2002) reported that, compared to a non-clinical control group, OCD sufferers recalled their parents as being more protective. Conversely, Valleni-Basile et al. (1995) found that disengagement or decreased cohesion in the family was associated with an increased prevalence of OCD. These two influences of over-protection and under-care as related to the burden of responsibility on children and OCD are accommodated by Salkovskis et al.'s (1999) hypothetical pathways to inflated responsibility. So while these familial factors have been demonstrated to be related to OCD (e.g., Turgeon et al., 2002; Valleni-Basile et al., 1995), the results of the current studies indicate that they are also an origin of inflated responsibility and are also implicated in OCD.

Related to inflated responsibility, thought-action fusion (TAF: Shafran, Thordarson, et al., 1996) and vigilance were proposed in this study to be further possible origins of inflated responsibility. However, these constructs were not tested here as they failed to contribute to the factor structure of the OIRQ as extracted in study 1. The systematic experience of guilt was also proposed in the current study as a separate possible origin of inflated responsibility. However the items related to this construct were combined with items related to responsibility within the family and among peers
indicating that these two aspects were closely related in the current sample and not
easily differentiated.

Several authors (Rachman, 1993; Rachman & Shafran, 1998; Salkovskis et al., 1999;
Shafran, Watkins et al., 1996) have linked inflated responsibility with guilt suggesting
that guilt is the natural consequence of feeling responsible and therefore it is not
altogether surprising that these items did not form independent factors. Reynolds and
Salkovskis (1991) suggested that inflated responsibility in relation to intrusive
thoughts is most likely to lead to feelings of guilt when the individual believes that
they have transgressed some sort of personal code or moral code. The results of this
study, while not conclusive, support the notion that guilt should be further
investigated as a consequence, or corollary of inflated responsibility, rather than a
determining factor.

12.5 Predicting inflated responsibility by group and neuroticism

Although much of the literature has suggested that inflated responsibility stems from
factors such as those extracted from the current data (Salkovskis et al., 1991; Tallis,
1994) it was important to take into account the impact of the personality variable
neuroticism (Eysenck, 1967) on the sense of inflated responsibility. The role of
psychoticism on inflated responsibility was also to have been explored as Scarabelotti
et al. (1995) indicated that psychoticism is related to increases in inflated
responsibility, but in the current data psychoticism did not correlate with RAS or with
OCD. It was therefore omitted from further analyses.
Group was entered at step 1 and explained 27% of the variance in inflated responsibility, further indicating that inflated responsibility is more strongly associated with having OCD than not. However, when neuroticism was entered at step 2, it subsumed the variance in group, so that group and neuroticism shared variance, and only neuroticism was a unique predictor of inflated responsibility. Clearly neuroticism is an important contributor to inflated responsibility such that it subsumes the variance in group, in this case having OCD.

Neuroticism is understood to have its origins in genetics and stands as a predisposing factor in the development of several disorders (Eysenck, 1967, Eysenck et al., 1987; Gray, 1970; 1981). Clark et al. (1994) described neuroticism as a “stable, heritable, and highly general trait dimension with a multiplicity of aspects ranging from mood to behaviour” (p. 104). In terms of mood, neuroticism is believed to be highly associated with negative affective states such as anxiety, depression, fear, guilt, and self-blame (Clark et al., 1994; Eysenck & Eysenck, 1991). In relation to cognitions, neuroticism has been associated with indecision, negative appraisals of self and others (Watson & Clark, 1984) and interpretations of ambiguous situations in terms of threat and hostility (Eysenck, 1967; Gray, 1982).

Overall, neuroticism is a predisposing, heritable factor of personality that corresponds with traits of worry, anxiety, indecisiveness, fear and avoidance, which are expressed in behavioural, affective, and cognitive terms. Given the nature of inflated responsibility as characterised by exaggerated concern for preventing harm to self and
others, fear of negative consequences, and feelings of guilt and blame, it follows that a strong relationship should exist between inflated responsibility and neuroticism.

12.6 Predicting OCD from inflated responsibility, origins of inflated responsibility and neuroticism

One of the major aims of this thesis was to investigate the utility of origins of inflated responsibility, inflated responsibility and neuroticism as predictors of OCD. Much previous research (Freeston et al., 1996; Ladouceur et al., 1995; Ladouceur et al., 1996; Rachman, 1993; Rhéaume et al., 1995; Shafran, 1997; Shafran, 1999; Steketee et al., 1998) has established the association between inflated responsibility and OCD and this association was also present in the current data. After accounting for the effect of group on OCD ($r^2 = 28\%$), inflated responsibility still contributed substantially to OCD ($r^2 = 18\%$). Interestingly, when all variables had been entered in the multiple regression on the fourth step, explaining approximately 60\% of the variance in OCD, the unique predictors were group ($r^2 = 4\%$); protection from responsibility ($r^2 = 2\%$) and peer blame ($r^2 = 1\%$). The shared variance among inflated responsibility, the origins of inflated responsibility, and neuroticism was 49\% in the prediction of OCD. This large component of shared variance indicates a strong commonality among these factors or a further construct which underlies these factors. It is not clear from the current data what this construct might be however, it clearly involves early environmental schema which form or are influenced by cognitions and personality. This construct may best be understood in terms of a biopsychosocial model in which the heritable component of neuroticism, familial environment, early
socialisation and cognitive schema interact producing, or contributing to, levels of OCD symptomatology.

While the variables inflated responsibility, origins of inflated responsibility, and neuroticism in this regression predicted a substantial amount of the variance in OCD, 40% of the variance in OCD was not accounted for by these factors. It might be that this variance can be explained by issues such as social stigma, fear associated with the symptoms and the possible implication of engaging in or resisting symptomatic thoughts or behaviours, and other cognitive biases that have been identified as being related to OCD such as perfectionism, over-estimation of threat, or intolerance of uncertainty (Steketee, Frost, & Cohen, 1998). There may also be a large component of the variance in OCD associated with mood, other than fear, as it is clear that in the current sample of clinical participants, the majority reported having a comorbid condition with depression reported most frequently. It might also be that earlier onset might contribute to higher scores on the Padua Inventory which was used in the current study as the indicator of OCD severity. Certainly much research (e.g., Antony et al., 1998; Crino & Andrews, 1996; Milfranchi et al., 1995; Rasmussen & Tsuang, 1986; Welkowitz, 2000) has shown that early onset and comorbidity are associated with greater symptomatology and poorer prognosis.

12.7 Structural Equation Model (SEM)

In order to comprehensively evaluate the interrelationships among the factors in the current study, a SEM was conducted. SEMs are a composite of factor analyses and
multiple regressions (Bollen & Long, 1993) which allow the researcher to confirm a hypothesised structure among latent factors (Byrne, 2001).

The model tested (Figure 11.1) contained paths from neuroticism to origins of inflated responsibility, to inflated responsibility, and to OCD; paths from the origins of inflated responsibility directly to OCD, and from OIR through inflated responsibility to OCD; and a path from inflated responsibility to OCD. Ideally, SEMs require a minimum sample size in the order of 100 to 200. In the current data, each group separately contained less than 100 participants therefore, after a preliminary check that the $\chi^2$ values for the model by group were not significantly different, the model was run with the entire sample. Further justification for using the combined sample for the SEM comes from other sources. Firstly, the pattern of intercorrelations among each group was very similar but secondly, and even more compelling, after all other variables were entered into the various multiple regression equations, the contribution of group was substantially reduced.

The current data provided an excellent fit to the hypothesised model and overall 66% of the variance in inflated responsibility and 63% of the variance in OCD was explained by the constructs in the model. While the amount of variance in OCD in the SEM is approximately the same as that explained when all variables were entered in a linear multiple regression, the SEM allows for the assessment of both direct and indirect paths among constructs and an examination of total effects, which are not available under multiple regressions.
To this end then, it is quite clear from an examination of the total effects in the model that neuroticism contributed substantially to a sense of inflated responsibility and to OCD (both $\beta \geq .71$). Neuroticism also contributed to the latent construct OIR ($\beta = .53$) and to the five individual origins of inflated responsibility: responsibility, protection from responsibility, strictness, critical incidents, and peer blame, although it contributes less to protection from responsibility.

The reason for the weaker relationship between protection from responsibility and neuroticism and the stronger relationship between responsibility and neuroticism is not clear however, it might be proposed that being protected from responsibility leads to skill deficit in coping with responsibility and to feelings of incompetency. Anxiety in the face of demanding tasks and responsibility situations arises then, from lack of requisite knowledge and skill. In relation to the burden of responsibility in childhood however, predisposing aspects of neuroticism increase vulnerability to worry and uncertainty which, when combined with high levels of responsibility, might interact to form pathological responses in the form of obsessive and compulsive behaviours. The individual might possess the requisite skills for coping with responsibility situations but their personality predisposition makes them vulnerable to feelings of uncertainty and fear of blame.

Contrary to this relationship between neuroticism and protection from responsibility, is the relationship between protection from responsibility and OIR. In the latter instance, it has been suggested by Salkovskis et al. (1999) that it is not only high levels of responsibility but also high levels of protection from responsibility that
contribute to inflated responsibility. These results support Salkovskis et al.'s hypothesis and they also fit with other research that has indicated the role of parental over-protectiveness in OCD sufferers (Hibbs et al., 1991). Clearly, a balance between protection from responsibility and over-burden of responsibility is required to avert a sense of inflated responsibility.

In line with the hypothesis of this study, the OIR contributed directly to a sense of inflated responsibility and also to OCD. The OIRs also exacted an indirect effect on OCD through inflated responsibility (total effects for OIR on inflated responsibility $\beta = .44$; on OCD $\beta = .36$). Interestingly, the total impact of the OIRs on OCD was approximate to that of inflated responsibility alone ($\beta = .34$). While it is not suggested that the impact of OIR is equivalent to the impact of inflated responsibility if inflated responsibility were to be removed from the current theoretical model, these relationships do add weight to the relevance, and the theoretical and empirical validity of the OIR in OCD.

With respect to the OIR, the manifest variables which load most strongly on the latent construct of OIR, are responsibility (e.g., do you feel that much of the responsibility for what occurred in the family rested on you?), peer blame (e.g., did you feel that much of the responsibility for what occurred amongst your friends rested on you?), and critical incidents (e.g., have you contributed to serious misfortunes by doing something to cause them?). In a theoretical consideration of possible pathways to the development of inflated responsibility, Salkovskis et al. (1999) hypothesised that a
family environment in which too much responsibility was placed on children for care of self and/or others would contribute to a sense of inflated responsibility. The results of this study support this hypothesis and demonstrate the critical role of family environment in the formation of schema and beliefs which, when combined with other factors such as personality and critical life events, can become pathological. In addition, an experience of responsibility and blame for outcomes among peers is also shown to contribute directly to inflated responsibility. Salkovskis et al. did not specifically hypothesise that peer domains would affect inflated responsibility, however they did suggest that systematic experiences of guilt and scapegoating could emanate from within and without the family and that this might interact with inflated responsibility beliefs and spur its development. Critical incidents were also posited by Salkovskis et al. to play a role in the development of inflated responsibility beliefs and the important role of these formative events is highlighted by the current results.

While contributing to the model, it is also clear that strictness and protection from responsibility demonstrated lower factor weights. As discussed previously in Chapter eleven, strictness did not significantly contribute when regressed on to inflated responsibility. Examination of the items reveals that most of the items that were extracted for the strictness factor relate to strictness in the school environment. It has been suggested previously by some authors (e.g., Kanner, 1962; Rasmussen & Tsuang, 1984) that children with OCD have been taught a strict interpretation of “right” and “wrong” and that a relationship exists between factors of strictness and rigidity of upbringing and with the development of OCD. It is possible that the items
relating to strictness within the family that were written in the development of the
OIRQ did not accurately capture the theoretical construct and for this reason were not
retained in the final factor structure, thereby limiting the relevance of the strictness
factor in the prediction of inflated responsibility. It will be important for future
research to re-consider the role of parental strictness in relation to inflated
responsibility and OCD.

12.8 Clinical relevance of the current findings
The knowledge that the current study has provided with respect to the aetiological
factors in the cognitive distortion of inflated responsibility provides scope for the
ey early detection and intervention of those at risk of developing a sense of inflated
responsibility and obsessive-compulsive problems. By examining specific aspects of
family environment, occurrence of critical incidents and peer relationships, clinicians
may be able to assess and estimate the propensity for the development of inflated
responsibility cognitions, particularly in children and adolescents where cognitive
patterns are less firmly entrenched.

Such interventions might be particularly timely in the case of critical incidents which
have been implicated here as an origin of inflated responsibility and in previous work
(e.g., Black, 1974; Khanna et al., 1988) as a potential catalyst in the onset of OCD.
Examination of other cognitive tendencies such as frequent self-blame for negative
outcomes and strong feelings of guilt may also provide an avenue for exploring and
uncovering responsibility beliefs allowing for the possibility of cognitive
restructuring to manage these assumptions and beliefs before they become entrenched schema.

Clearly, personality will also play a role in the tendency towards the development of anxiety problems, including OCD. Clinicians can only work with aspects that are malleable, namely environmental, cognitive and behavioural factors such as familial interactional styles and cognitive biases leading to erroneous interpretations. The results of this study highlight the role of parental and familial factors in the development of problematic responsibility beliefs. This information could be used in developing parenting programs in the community to allow for preventative clinical work. Such programs would best be aimed at parents who had themselves presented for treatment for anxiety related problems or who had sought help for their children with emerging anxiety problems. A wide range of early intervention and prevention programs exist which target a variety of problem behaviours and disorders (see Cotton & Jackson, 1996 for review) and similarly designed programs could be implemented in child and adolescent services.

For those who already experience an inflated sense of responsibility, cognitive-behavioural treatment aimed at correcting this cognitive distortion has been developed and evaluated (e.g., Salkovskis, 1999; van Oppen & Arntz, 1994; van Oppen et al., 1995 see section 4.2, 4.2.1, 4.2.2, 4.2.3 and 4.2.4) providing an effective method for targeting inflated responsibility. The Responsibility Attitudes Scale (Salkovskis et al., 2000) also provides a useful way for clinicians to assess inflated responsibility beliefs in their clients. Individuals for whom inflated responsibility is
already a problem might question how they developed inflated sense of responsibility and the results of the current study help to elucidate this matter for them.

12.9 Future directions and limitations of the current research

The development of programs and early intervention strategies as discussed in the preceding section, would benefit from future research to determine whether the actiological factors identified in this study are unique to OCD sufferers, or whether they represent broad risk factors for a range of other psychological disorders such as depression and social anxiety where guilt and self-blame have also been identified as cognitive features.

The area of origins to inflated responsibility would be further enhanced by refinement of the Origins of Inflated Responsibility Questionnaire through replication and possibly with the addition of other items and factors to capture more precisely situations and patterns of events that may be influential in the development of inflated responsibility. For example, greater specificity of types of critical incidents, separation of maternal and paternal parenting roles, sibling relationships and communication patterns in relation to attribution of blame and recrimination are possible additions for a more refined scale.

Furthermore, this study relied on retrospective reports from sufferers and some uncertainty has been expressed as to the reliability of such accounts (Gerisma et al., 1990). An interesting approach to attempt to counter this problem would be to include parents’ perceptions of their own parenting style and the home environment as a
corroborative, such as was done with the development of the PBI (Parker et al., 1979). In that study, correlations between children's ratings of their mothers and the mother's own ratings of themselves were moderate (.44 for care and .55 for over-protection) indicating that this approach can help in the validation of studies in which parental styles are assessed. Should such an approach yield low correlations between parental evaluations of parenting styles and children's ratings of parenting styles, this will lend further weight to the suggestion that OCD sufferers are subject to perceptual biases and attributions of blame and responsibility. Such a finding as this would inform individual treatments aimed at restructuring erroneous attributions. On the other hand, should ratings between parent's and children converge, treatments might be better directed at the family system with the aim of identifying communication patterns through which responsibility and blame are conveyed, or practices which serve to promote over-protection or over-burden of responsibility.

There would be benefit in replication of the current study with a larger sample size. In the current study, clinical and non-clinical groups were combined in the SEM analysis and although there was justification for doing so (see section 11.12), a larger sample would allow for the separate examination of pathways between inflated responsibility, the OIRs, neuroticism, and OCD. Furthermore, a larger sample size would allow for the investigation of differences in OIR and inflated responsibility by subgroups of OCD as established by the Padua Inventory (Sanavio, 1988). While the sample size in this study was not sufficient to examine these relationships, investigation of the correlation matrix indicates that the five OIRs identified in the
current data were more pervasively related to intrusive thoughts and impulses than to checking behaviours or fear of contamination.

A limitation of the current study was that participants in the clinical group were not diagnosed by a clinician before inclusion in the study. Classification into the OCD group was based solely on respondents' self-reports that they had previously been diagnosed with OCD by a clinician. In only one instance a respondent failed to indicate who had made the diagnosis. It is important that in future investigations, the clinical sample be comprised of participants whose diagnosis of OCD has been validated by a qualified clinician to place the findings in the broader context.

While these data are far from conclusive, they can be interpreted to suggest that the origins of inflated responsibility, as well as inflated responsibility beliefs themselves have a strong cognitive component that may be common. This idea of a common construct underlying the OIRs, inflated responsibility and neuroticism was also evident in the substantial amount of shared variance seen in the prediction of OCD. As discussed in section 2.3, there has been question raised by several researchers (e.g., Leckman et al., 1997; Summerfeldt et al., 1999) over the current subgrouping of OCD symptom types based on solely behavioural symptoms such as washing and checking. These correlational analyses suggest that cognitive components form a strong part of OCD ratings using the Padua Inventory and suggest that further consideration of symptom groupings with the inclusion of cognitive components is warranted.
The OIR factor related to strictness was not found to be a strong predictor of inflated responsibility in this study. Previous research has highlighted the possible link between religiosity, strictness and OCD although results have been equivocal (Greenberg & Witzum, 1994; Rasmussen & Tsuang, 1986; Steketee et al., 1991; Tallis, 1994). Items relating to strongly enforced codes of conduct not only from within the family, but also from clergy were included in the original pool of items of the OIRQ but these items did not load highly enough to be included in the final solution. Further research could investigate the link between inflated responsibility and strictness and/or religiosity to confirm this finding or to clarify this association. However, it needs to be stated that most participants in the current study were Anglo-Saxon/Celtic of predominantly Protestant or Catholic background. While knowledge of participants’ religious practice or beliefs are not known, in general terms, the Australian population from which most of the sample was drawn is rather more secular than religious.

Conclusions
This thesis has contributed to the body of knowledge related to inflated responsibility and to OCD. An instrument to assess the origins of inflated responsibility was developed and validated, and its internal and temporal stability established. This scale was then used in an evaluation of the impact of its factors as predictors of inflated responsibility, and in a further test of the model of OIR, inflated responsibility and neuroticism in OCD.
While prior to this study, possible origins of inflated responsibility were suggested by Salkovskis et al. (1999), these had not been empirically tested so that the area was informed only by extrapolations from general cognitive theory (Beck, 1976). The current results also provide a rationale for the development of early intervention and prevention programs to target parenting and coping in children and adolescents at risk of developing OCD. With knowledge of aetiological factors in the development of distorted beliefs such as inflated responsibility, demonstrated to be pivotal in the maintenance of OCD (Salkovskis, 1998; Shafran, 1997), clinicians are better informed about factors that contribute to the development of inflated responsibility and are therefore better able to target these specific areas for early intervention.

Several recommendations for future research into the origins of inflated responsibility have been discussed in the preceding section such as, refinement of the OIRQ and replication of the study using a larger sample size. It is anticipated that the results from these studies will provide a solid, meaningful and valid foundation from which to develop this important area of research and with further investigation, may serve to elucidate an underlying construct common to the OIRs, inflated responsibility, neuroticism and OCD.
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PUBLICATIONS AND CONFERENCE PRESENTATIONS RELATED TO

THESIS

Publications


International conferences


National conferences

APPENDIX A1

Approval confirmation from Deakin University Ethics Committee (DUEC)
MEMORANDUM

TO:    Ms Fiona Bailey
       Psychology
       Melbourne

FROM:  Secretary, Deakin University Human Research Ethics Committee (DUHREC)

DATE:  24 November 2000

SUBJECT: PROJECT: EC 220-2000  
(Please quote this project number in future communication.)
THE ORIGINS OF INFLATED RESPONSIBILITY IN OBSESSIVE COMPULSIVE DISORDER

The above project was considered at Meeting 6/00 held on 20 November 2000. The Ethics Committee decision and explanation are given below.

THAT APPROVAL BE GIVEN FOR MS FIONA BAILEY, UNDER THE SUPERVISION OF DR KATE MOORE, PSYCHOLOGY, TO UNDERTAKE THIS PROJECT FROM 1 DECEMBER 2000 TO 20 NOVEMBER 2002.

Standard on-going ethics clearance has been given for the above project, the conditions listed on the accompanying page.

In arriving at its decision, the Ethics Committee noted revised and additional informed consent instruments submitted electronically by you on 14/11/00.

Please contact my office if you have any queries or concerns about the above decision. The project reference number should be quoted in any communication.

Keith Wilkins
Secretary, Ethics Committee
Tel: (03) 9251 7123 (or ext 17123)
Email: keithwil@deakin.edu.au

Signature Redacted by Library
APPENDIX A2

Approval from University of Ulster Research Ethical Committee
RESEARCH ETHICAL COMMITTEE

PROJECT 00/51  The origins of inflated responsibility in Obsessive-Compulsive Disorder

Thank you for your response to the matters raised by the Committee.

The project should now proceed.

Please continue to quote the project number in all correspondence.

Thanks

Nick Curry
Ext. 6234
APPENDIX B

Covering letter to participants/ Plain language statement
Dear participant.

Thank you for your interest in this research. We invite you to take part in a research project relating to how people think and OCD. Below is an explanation and outline of our study.

Over recent years, a number of researchers have found that an excessive sense of personal responsibility for harm is one of the central things that maintains obsessive compulsive symptoms. This excessive sense of responsibility has been defined by one researcher in the field as “The belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes. These outcomes may be actual, that is having consequences in the real world, and/or at a moral level” (Salkovskis et al., 1996). This overwhelming sense of responsibility might be something you can identify with in your own experience. Some researchers also feel that reducing this excessive sense of responsibility may be one of the keys to reducing OC symptoms through psychological therapy. Research certainly suggests that this may have promise. While it is not suggested that having excessive responsibility explains why you have OCD, it may help to explain why it persists. What we are interested in doing is trying to find out how this excessive sense of responsibility developed and, if you can remember what experiences in your life you feel may have contributed. Our aim is to develop a questionnaire that achieves this and it is for this purpose that we are asking you help.

The following questionnaire ask you about some of the things that may have happened to you in your life and it also asks you how important you think they are in terms of your feelings of responsibility. By doing this, we can start to get a sense of the type of things that may have contributed to one aspect of the disorder, but it also gives you the chance to say how relevant these things are, if at all. Even if none of the questions are relevant, this is also very important information. We ask you to fill out a short questionnaire relating to your current feelings of responsibility and finally a questionnaire about your OC symptoms. Overall, we expect that it will take you 30 to
40 minutes at most to complete both questionnaires. Any information you supply here will be kept securely in a locked cabinet in a secure section of the School of Psychology at Deakin University, and will remain strictly confidential. We are not so much interested in individual responses as we are patterns of responses from many people. We hope to find 100 people who suffer from OCD to take part in our study and we are certainly very grateful for your help with this project.

While it is important for us to gain as many responses as we can, please be sure that our success or failure does not depend on you personally and therefore we ask that if you do not feel comfortable in taking part in this study then please do not. If for any other reason you are not able to complete the questionnaires and do not send them back to us we will not pursue the matter. You are free to withdraw from the study at any point and are not obliged to give any explanation. If you decide to complete the questionnaires we have provided a stamped addressed envelope for you to return them to us.

Once all the responses have been gathered and the data analysed, it is anticipated that a summary of findings will be completed by December 2001 and will be available from the researchers on request (details below).

We extend our thanks to you for your assistance with this study and hope that with your help we may be able to form a clearer picture of one of the problems associated with obsessive compulsive disorder. If you have any questions or concerns about this study please contact us at the address provided below.

We wish you well and again thank you for your consideration.

Kind regards

Fiona Bailey
Under the supervision of Dr Kate Moore
APPENDIX C

Original Items of The Origins of Inflated Responsibility Questionnaire
The Origins of Inflated Responsibility Questionnaire

The following questionnaire asks about you and your perceptions of your family upbringing and also events that may have occurred in your life. Please read each question carefully and circle the response that suits you best. Answers are rated from 0 - never to 8 - always. There are no right or wrong answers. Do not spend time thinking about the best answers rather: give the answer that first occurs to you. Please tell us, as a child or adolescent……

<table>
<thead>
<tr>
<th>Question</th>
<th>never</th>
<th>sometimes</th>
<th>always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Were you given responsibility for avoicing problems and dangers?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. Did you feel that you were mostly responsible for your own wellbeing?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Did you feel that you were responsible for the care and protection of your siblings?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Did you feel you were responsible for the care of your parents?</td>
<td>0</td>
<td>1</td>
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<tr>
<td>5. Did you believe you had to take care of yourself before you were old enough?</td>
<td>0</td>
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<tr>
<td>6. Did you feel it was up to you to prevent bad things from happening?</td>
<td>0</td>
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<tr>
<td>7. Did you feel you were mostly to blame for negative consequences within the family?</td>
<td>0</td>
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<tr>
<td>8. Did you feel that you were to blame when things went wrong in the family?</td>
<td>0</td>
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<tr>
<td>9. Do you feel that much of the responsibility for what occurred in the family rested on you?</td>
<td>0</td>
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<tr>
<td>10. Did you feel you were to blame when things went wrong amongst your friends?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. Did you feel you were to blame when things went wrong at school?</td>
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<td>Question</td>
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<tr>
<td>12. Was it mostly your fault when things went wrong in the family?</td>
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<tr>
<td>13. Was it mostly your fault when things went wrong amongst your friends?</td>
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<tr>
<td>14. Was it mostly your fault when things went wrong at school?</td>
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<tr>
<td>15. Did you feel that much of the responsibility for what occurred in the family rested on you?</td>
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<tr>
<td>16. Did you feel that much of the responsibility for what occurred at school rested on you?</td>
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<tr>
<td>17. Did you feel that much of the responsibility for what occurred amongst your friends rested on you?</td>
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<tr>
<td>18. Did your teachers blame you for things you didn't do?</td>
<td>0</td>
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<td></td>
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<tr>
<td>19. Did your siblings blame you for things you didn't do?</td>
<td>0</td>
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<tr>
<td>20. Did your friends blame you for things you didn't do?</td>
<td>0</td>
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<tr>
<td>21. Were you often made to feel responsible for things that went wrong around you?</td>
<td>0</td>
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<tr>
<td>22. Were you made to feel responsible for your parents' feelings?</td>
<td>0</td>
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<tr>
<td>23. Were you made to feel responsible for siblings' feelings?</td>
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<tr>
<td>24. Were you encouraged to think through the consequences of your actions?</td>
<td>0</td>
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<tr>
<td>25. Were you encouraged to think through the consequences of even the smallest actions?</td>
<td>0</td>
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<td>8</td>
</tr>
<tr>
<td>26. Were you made to believe that everything you do could cause some serious harm or problem?</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<tr>
<td>27. Were you expected to follow a strict code of behaviour in your home?</td>
<td>0</td>
<td>1</td>
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<tr>
<td>28. Were you expected to follow a strict code of behaviour at your school?</td>
<td>0</td>
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<tr>
<td>Question</td>
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<tr>
<td>29. Was your family upbringing a strict one?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>30. In general, were your teachers strict?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>31. Were codes of conduct strongly enforced within your family?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>32. Were codes of conduct strongly enforced at your school?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>33. Was morality strongly enforced by your teachers?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>34. Was morality strongly enforced by your parents?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>35. Was morality strongly enforced by religious figures you were in contact with?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>36. Were you led to believe that thinking bad things was the same as doing bad things?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>37. Were you led to believe that you would be condemned for bad actions or thoughts?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>38. Were you led to believe that not acting to prevent some misfortune is the same as making that misfortune happen?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>39. When you were to blame for something, were you made to feel you couldn't forgive yourself?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>40. Did your family make you feel that if you weren't certain something wasn't your fault then you were probably to blame?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>41. Did your teacher/s make you feel that if you weren't certain something wasn't your fault then you were probably to blame?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>42. In your family, was there a strong message that danger was always &quot;just around the corner&quot;?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>43. Were you prevented from taking responsibility within your family?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>44. Were you unprepared to cope with difficulties and dangers in life because you were never given responsibility in your family?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Question</td>
<td>never</td>
<td>sometimes</td>
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<td>-------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>45. Were you unprepared to cope with difficulties and dangers in life because your teachers never gave you responsibility?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>46. Would you say you had a very sheltered upbringing?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>47. Was the saying &quot;prevention is better than cure&quot; strongly upheld at school?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>48. Was the saying &quot;prevention is better than cure&quot; strongly upheld in your family?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>49. Was responsibility given to you?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>50. Do you think you were &quot;wrapped in cotton wool&quot;?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>51. Were you told that harm was always possible and you should try to prevent it no matter how unlikely?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>52. Were you made to believe that bad things will happen if you are not careful enough?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>53. Were you told that if you take sufficient care you prevent harmful events?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>54. Were you made to feel that no one could rely on your judgement?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>55. Have terrible things happened because you actually failed to prevent them?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>56. Did bad things happen in your life because of something that you actually did to cause them?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>57. Are you blamed for something terrible that once happened?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>58. Have you contributed to serious misfortunes by not acting to prevent them?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>59. Have you contributed to serious misfortunes by doing something to cause them?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>60. Have there been any &quot;lucky escapes&quot; or &quot;near misses&quot; where something bad nearly happened because of you?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>61. Have any serious incidents nearly occurred because you failed to prevent them?</td>
<td>0</td>
<td>1</td>
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</tr>
<tr>
<td>Question</td>
<td>never</td>
<td>sometimes</td>
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</tr>
<tr>
<td>62. Were there ever any misfortunes that might have occurred because of something you thought or did?</td>
<td>0</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>63. Were there any events in which you feel you might have played a part in making happen?</td>
<td>0</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>64. Even if you now believe it was a coincidence, have you ever felt responsible for something bad happening because of something you did?</td>
<td>0</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>65. Even if you now believe it was a coincidence, have you ever felt responsible for something bad happening because of something you failed to do?</td>
<td>0</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>66. Even if you now believe it was a coincidence have you ever felt responsible for something happening because of something you thought?</td>
<td>0</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>67. Have there been any &quot;strange coincidences&quot; when something bad happened after you had a certain thought?</td>
<td>0</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>68. Have there been any &quot;strange coincidences&quot; when something bad happened after something you did?</td>
<td>0</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
</tbody>
</table>

Thank you for taking the time to answer these questions. We remind you that your responses are strictly confidential and will not be disclosed to persons outside the study. Please retain the cover letter that accompanies these questionnaires and return the questionnaires using the stamped addressed envelope provided. We are grateful for your assistance with this project.
APPENDIX D

Front page of questionnaire: demographic data
PLEASE NOTE: COMPLETION OF THESE QUESTIONNAIRES IS TAKEN AS YOUR CONSENT TO PARTICIPATE IN THIS RESEARCH.

Please identify your Age: .......

Gender M / F

Do you currently have a diagnosis of obsessive-compulsive disorder? YES / NO

Who was your diagnosis of OCD given by (i.e., GP, psychiatric nurse, psychologist, etc)?

..........................................

Is OCD your primary diagnosis? YES / NO

Do you currently have any other psychiatric or psychological diagnoses? YES / NO

If ‘YES’, please tell us what they are.

.................................................. ..................................................

.................................................. ..................................................

..................................................

Thank you. Please turn over the page.
APPENDIX E

Request for participants submitted to organisations
Research into The Origins of Inflated Responsibility in Obsessive-Compulsive Disorder: Request for Participants

I am a doctoral student conducting research into obsessive-compulsive disorder and would like your help. I have developed a questionnaire that asks you about you and your perceptions of your family upbringing and also events that may have occurred in your childhood and/or adolescence. I am looking for participants who suffer from OCD who may be willing to complete the questionnaire and give comments on whether the questions are appropriate, useful and relevant. The questionnaire takes about 40 minutes to complete and a stamped addressed envelope is provided so that you can return the questionnaire at your convenience. Included with the questionnaire is an explanation of the study written in plain language and also contact details so that you can call or write to request further information. We do not ask for any personal details on the questionnaire that might identify you and we can assure you that you will remain anonymous and that any information you provide will be kept confidential and secure. Please note that this study has been passed before a research ethical committee to ensure that it is fair, ethical and appropriate and has been approved. It is most important that as many people as possible complete the questionnaire to determine whether the questions included are valid. It is for this purpose I ask for your help. If you feel that would be willing to complete this questionnaire a copy can be sent to you by contacting us at the addresses given below. If you know of anyone who also suffers from OCD who you feel may be interested in participating in this study, please ask for more copies to be sent to you. I am sincerely grateful for your help with this project.

Fiona Bailey
Post-graduate student in clinical psychology

To request your copy of the questionnaire, please contact me at: fbaily@deakin.edu.au or write to:
APPENDIX F

The Responsibility Attitudes Scale
The Responsibility Attitudes Scale

This questionnaire lists different attitudes of beliefs which people sometimes hold. Read each statement carefully and decide how much you agree or disagree with it. For each of the attitudes, show your answer by putting a circle round the words which BEST DESCRIBE HOW YOU THINK. Be sure to choose only one answer for each attitude. Because people are different, there is no right or wrong answer to these statements. To decide whether a given attitude is typical of your way of looking at things, simply keep in mind what you are like MOST OF THE TIME.

1. I often feel responsible for things which go wrong.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

2. If I don’t act when I can foresee danger, then I am to blame for any consequences if it happens.

| Totally disagree | Disagree very much | Disagree slightly | Neutral | Agree | Agree slightly | Totally agree |
|

3. I am too sensitive to feeling responsible for things going wrong.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

4. If I think bad things, this is as bad as doing bad things.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree</th>
<th>Totally agree</th>
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</thead>
</table>

5. I worry a great deal about the effects of things which I do or don’t do.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree</th>
<th>Totally agree</th>
</tr>
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6. To me, not acting to prevent disaster is as bad as making disaster happen.

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<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

7. If I know that harm is possible, I should always try to prevent it, however likely it seems.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

8. I must always think through the consequences of even the smallest actions.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

9. I often take responsibility for things which other people don’t think are my fault.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

10. Everything I do can cause serious problems.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

11. I am often close to causing harm.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

12. I must protect others from harm.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

13. I should never cause even the slightest harm to others.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

14. I will be condemned for my actions.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

15. If I can have even a slight influence on things going wrong, then I must act to prevent it.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

16. To me, not acting where disaster is a slight possibility is as bad as making that disaster happen.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

17. For me, even the slightest carelessness is inexcusable when it might affect other people.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

18. In all kinds of daily situations, my inactivity can cause as much harm as deliberate bad intentions.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

19. Even if harm is a very unlikely possibility, I should always try to prevent it at any cost.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>
20. Once I think it is possible that I have caused harm, I can’t forgive myself.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

21. Many of my past actions have been intended to prevent harm to others.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

22. I have to make sure other people are protected from all consequences of things I do.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

23. Other people should not rely on my judgement.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

24. If I cannot be certain I am blameless, I feel that I am to blame.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

25. If I take sufficient care then I can prevent any harmful accidents.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>

26. I often think that bad things will happen if I am not careful enough.

<table>
<thead>
<tr>
<th>Totally disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree slightly</th>
<th>Totally agree</th>
</tr>
</thead>
</table>
APPENDIX G

The Padua Inventory
The Padua Inventory

The following statements refer to thoughts and behaviours which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviours may create. Please rate your replies as follows:

1. I feel my hands are dirty when I touch money
   0 1 2 3 4

2. I think even the slightest contact with bodily secretions (perspiration, saliva, urine, etc.) may contaminate my clothes and somehow harm me
   0 1 2 3 4

3. I find it difficult to touch an object when I know it has been touched by strangers or by certain people
   0 1 2 3 4

4. I find it difficult to touch garbage or dirty things
   0 1 2 3 4

5. I avoid using public toilets because I am afraid of disease and contamination
   0 1 2 3 4

6. I avoid using public telephones because I am afraid of contagion and disease
   0 1 2 3 4

7. I wash my hands more often and longer than necessary
   0 1 2 3 4

---

8. I sometimes have to wash or clean myself simply because I think I may be dirty or 'contaminated'

9. If I touch something I think is 'contaminated' I immediately have to wash or clean myself

10. If an animal touches me, I feel dirty and immediately have to wash or clean myself

11. When doubt and worries come into my mind, I cannot rest until I have talked them over with a reassuring person

12. When I talk I tend to repeat the same things and the same sentences several times

13. I tend to ask people to repeat the same things to me several times consecutively, even though I did understand what they said the first time

14. I feel obliged to follow a particular order in dressing, undressing and washing myself

15. Before going to sleep I have to do certain things in a certain order

16. Before going to bed I have to fold my clothes in a certain way
17. I feel I have to repeat certain numbers for no reason
0 1 2 3 4

18. I have to do things several times before I think they are properly done
0 1 2 3 4

19. I tend to keep on checking things more often than necessary
0 1 2 3 4

20. I check and recheck gas and water taps and lights switches after turning them off
0 1 2 3 4

21. I return home to check doors, windows, drawers, etc., to make sure they are properly shut
0 1 2 3 4

22. I keep on checking forms, documents, cheques, etc., in detail to make sure I have filled them correctly
0 1 2 3 4

23. I keep on going back to see that matches, cigarettes, etc. are properly extinguished
0 1 2 3 4

24. When I handle money I count and recount it several times
0 1 2 3 4

25. I check letters several times before posting them
0 1 2 3 4

26. I find it difficult to take decisions, even about unimportant matters
0 1 2 3 4

27. Sometimes I am not sure I have done things which in fact I know I have done
0 1 2 3 4
28. I have the impression that I will never be able to explain things properly

29. After doing something carefully, I still have the impression that I have either done it badly or not finished it

30. I am sometimes late because I keep on doing certain things more often than necessary

31. I invent doubts and problems about most of the things I do

32. When I start thinking of certain things I become obsessed with them

33. Unpleasant thoughts come into my mind and I cannot get rid of them

34. Obscene or dirty words come into my mind and I cannot get rid of them

35. My brain constantly goes its own way and I find it hard to attend to what is happening around me

36. I imagine catastrophic consequences as a result of absent-mindedness or minor errors which I make

37. I think or worry at length about having hurt someone without knowing it
38. When I hear about a disaster, I think it is somehow my fault
39. I sometimes worry at length for no reason that I have hurt myself or have some disease
40. I sometimes start counting objects for no reason
41. I feel I have to remember completely unimportant numbers
42. When I read I have the impression I have missed something important and must go back and re-read the passage at least two or three times
43. I worry about remembering completely unimportant things and make effort not to forget them
44. When a thought or doubt comes into my mind, I have to examine it from every point of view and cannot stop until I have done so
45. In certain situations I am afraid of losing my self-control and doing some embarrassing things
46. When I look down from a bridge or a very high window, I feel an impulse to throw myself into space
47. When I see a train approaching I sometimes think I could throw myself under its wheels
48. At certain moments I am tempted to tear off my clothes in public

49. While driving I sometimes feel an impulse to drive the car into someone or something

50. Seeing weapons excites me and makes me think violent thoughts

51. I get upset and worried at the sight of knives, daggers and other pointed objects

52. I sometimes feel something inside me which makes me do things for no reason

53. I sometimes feel the need to break or damage things for no reason

54. I am sometimes irresistibly tempted to steal other peoples’ belongings, even if they are of no use to me

55. I am sometimes irresistibly tempted to steal something from the supermarket

56. I sometimes have an impulse to hurt defenceless children or animals

57. I feel I have to make special gestures or walk in a certain way
58. In certain situations I feel an impulse to eat too much, even if I am then ill.

59. When I hear stories about a suicide or crime, I am upset for a long time and find it difficult to stop thinking about it.

60. I invent useless worries about germs and diseases.
APPENDIX H

The Eysenck Personality Questionnaire- Revised
INSTRUCTIONS: Please answer each question by putting a circle around the 'YES' or 'NO' following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

PLEASE REMEMBER TO ANSWER EACH QUESTION

1. Do you have many different hobbies? YES | NO

2. Do you stop to think things over before doing anything? YES | NO

3. Does your mood often go up and down? YES | NO

4. Have you ever taken the praise for something you know someone else had really done? YES | NO

5. Do you take much notice of what people think? YES | NO

6. Are you a talkative person? YES | NO

7. Would being in debt worry you? YES | NO

8. Do you ever feel 'just miserable' for no reason? YES | NO

9. Do you give money to charities? YES | NO

10. Were you ever greedy by helping yourself to more than your share of anything? YES | NO

11. Are you rather lively? YES | NO

12. Would it upset you a lot to see a child or an animal suffer? YES | NO

13. Do you often worry about things you should not have done or said? YES | NO

14. Do you dislike people who don't know how to behave themselves? YES | NO

15. If you say you will do something, do you always keep your promise no matter how inconvenient it might be? YES | NO

16. Can you usually let yourself go and enjoy yourself at a lively party? YES | NO

17. Are you an irritable person? YES | NO

18. Should people always respect the law? YES | NO

19. Have you ever blamed someone for doing something you knew was really your fault? YES | NO

20. Do you enjoy meeting new people? YES | NO

21. Are good manners very important? YES | NO

22. Are your feelings easily hurt? YES | NO

23. Are all your habits good and desirable ones? YES | NO

24. Do you tend to keep in the background on social occasions? YES | NO

25. Would you take drugs which may have strange or dangerous effects? YES | NO

26. Do you often feel 'fed-up'? YES | NO
<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Have you ever taken anything (even a pin or button) that belonged to someone else?</td>
<td></td>
<td></td>
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<tr>
<td>29</td>
<td>Do you prefer to go your own way rather than act by the rules?</td>
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</tr>
<tr>
<td>30</td>
<td>Do you enjoy hurting people you love?</td>
<td></td>
<td></td>
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<tr>
<td>31</td>
<td>Are you often troubled about feelings of guilt?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Do you sometimes talk about things you know nothing about?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Do you prefer reading to meeting people?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Do you have enemies who want to harm you?</td>
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<tr>
<td>35</td>
<td>Would you call yourself a nervous person?</td>
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<tr>
<td>36</td>
<td>Do you have many friends?</td>
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<td></td>
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<tr>
<td>37</td>
<td>Do you enjoy practical jokes that can sometimes really hurt people?</td>
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<tr>
<td>38</td>
<td>Are you a worrier?</td>
<td></td>
<td></td>
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<tr>
<td>39</td>
<td>As a child, did you do as you were told immediately and without grumbling?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Would you call yourself happy-go-lucky?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Do good manners and cleanliness matter much to you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Have you often gone against your parents' wishes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Do you worry about awful things that might happen?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Have you ever broken or lost something belonging to someone else?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Do you usually take the initiative in making new friends?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Would you call yourself tense or &quot;highly-strung&quot;?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Are you mostly quiet when you are with other people?</td>
<td></td>
<td></td>
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<tr>
<td>48</td>
<td>Do you think marriage is old-fashioned and should be done away with?</td>
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<tr>
<td>49</td>
<td>Do you sometimes boast a little?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Are you more easy-going about right and wrong than most people?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Can you easily get some life into a rather dull party?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Do you worry about your health?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Have you ever said anything bad or nasty about anyone?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Do you enjoy cooperating with others?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Do you like telling jokes and funny stories to your friends?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Do most things taste the same to you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>As a child, were you ever cheeky to your parents?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
53. Do you like mixing with people?
54. Does it worry you if you know there are mistakes in your work?
55. Do you suffer from sleeplessness?
56. Have people said that you sometimes act too rashly?
57. Do you always wash before a meal?
58. Do you nearly always have a ‘ready answer’ when people talk to you?
59. Do you like to arrive at appointments in plenty of time?
60. Have you often felt listless and tired for no reason?
61. Have you ever cheated at a game?
62. Do you like doing things in which you have to act quickly?
63. Is (or was) your mother a good woman?
64. Do you often make decisions on the spur of the moment?
65. Do you often feel life is very dull?
66. Have you ever taken advantage of someone?
67. Do you often take on more activities than you have time for?
68. Are there several people who keep trying to avoid you?
69. Do you worry a lot about your looks?
70. Do you think people spend too much time safeguarding their future with savings and insurance?
71. Have you ever wished that you were dead?
72. Would you dodge paying taxes if you were sure you could never be found out?
73. Can you get a party going?
74. Do you try not to be rude to people?
75. Do you worry too long after an embarrassing experience?
76. Do you generally ‘look before you leap’?
77. Have you ever insisted on having your own way?
78. Do you suffer from ‘nerves’?
79. Do you often feel lonely?
80. Can you ever trust people to tell the truth?
81. Do you always practice what you preach?
82. Are you easily hurt when people find fault with you or the work you do?
85 Is it better to follow society's rules than go your own way? YES  NO
86 Have you ever been late for an appointment or work? YES  NO
90 Do you like plenty of bustle and excitement around you? YES  NO
91 Would you like other people to be afraid of you? YES  NO
92 Are you sometimes bubbling over with energy and sometimes very sluggish? YES  NO
93 Do you sometimes put off until tomorrow what you ought to do today? YES  NO
94 Do other people think of you as being very lively? YES  NO
95 Do people tell you a lot of lies? YES  NO
96 Do you believe one has special duties to one's family? YES  NO
97 Are you touchy about some things? YES  NO
98 Are you always willing to admit it when you have made a mistake? YES  NO
99 Would you feel sorry for an animal caught in a trap? YES  NO
100 When your temper rises, do you find it difficult to control? YES  NO
101 Do you lock up your house carefully at night? YES  NO
102 Do you believe insurance schemes are a good idea? YES  NO
103 Do people who drive carefully annoy you? YES  NO
104 When you catch a train, do you often arrive at the last minute? YES  NO
105 Do your friendships break up easily without it being your fault? YES  NO
106 Do you sometimes like teasing animals? YES  NO

☐ PLEASE CHECK THAT YOU HAVE ANSWERED ALL THE QUESTIONS