The Relationship Between Dissociation, Susceptibility to Doubt and Obsessive-Compulsiveness

Kerry Morrison

Submitted for the Degree of

Doctor of Psychology
(Clinical Psychology)

School of Psychology
Faculty of Arts and Human Sciences
University of Surrey
Guildford, Surrey
United Kingdom

July 2015
Abstract

Objective: Dissociation has been suggested as a common experience amongst individuals with obsessive-compulsive disorder (OCD), yet this area has received limited research beyond demonstrating a relationship exists. The current study sought to generate new knowledge about how and why dissociation might occur within the context of OCD. Inferential Confusion (IC), an OCD specific style of reasoning resulting in obsessive doubts, was considered one promising line of enquiry. IC and dissociation both involve elements of engaging with one’s imagination. It was predicted that traits of dissociative absorption and detachment would be able to predict the extent to which individuals are susceptible to doubt through over investing in possibility-based information, and that this doubt in turn would be related to their degree of obsessive-compulsiveness (OC).

Design: A quasi-experimental design was employed to elicit a measure of IC, through the online Inference Process Task (IPT). The IPT is a reasoning task designed to assess changes in levels of doubt. Further cross-sectional data was attained through online completion of self-report measures of OC, dissociative traits and depression.

Participants: 114 non-clinical participants were recruited, 48 were classified as experiencing high OC, and 66 as experiencing low OC.

Results: As expected, a positive relationship existed between OC and dissociative traits, with correlations ranging from $r = .23$ to $r = .73$. However dissociative traits were not found to predict susceptibility to doubt arising from possibility-based information. Contrary to expectation and previous studies, IC was not significantly correlated with OC ($r = .08$).

Conclusion: It was concluded that dissociative traits had not played a significant role in IC. However, this conclusion should be generalised with caution as the results also suggested the IPT may not have reliably operationalised IC.
Further replications of the current study would be beneficial, perhaps including an alternative measure of IC.

Keywords

Obsessive compulsive disorder; obsessive compulsiveness; dissociation; absorption; detachment; inferential confusion.

Target Journal

The Journal of Obsessive-Compulsive and Related Disorders.
Acknowledgements

Many people have supported me along the way to completing this doctorate and becoming a Clinical Psychologist, I would particularly like to thank the following for their valued contributions:

- My clinical tutors, Ms Louise Deacon and Dr Nan Holmes, for their help and support.
- My research tutor and supervisor, Dr Laura Simonds, for her guidance and patience.
- My placement supervisors, colleagues and clients who have challenged and inspired me, and created numerous opportunities to learn.
- All those who helped in the completion of my research, in particular the participants.
- My family and friends for their endless support.
### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>1</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>3</td>
</tr>
<tr>
<td>Contents</td>
<td>4</td>
</tr>
<tr>
<td>MRP Empirical Paper</td>
<td>5</td>
</tr>
<tr>
<td>MRP Empirical Paper Appendices</td>
<td>53</td>
</tr>
<tr>
<td>MRP Proposal</td>
<td>114</td>
</tr>
<tr>
<td>MRP Literature Review</td>
<td>134</td>
</tr>
<tr>
<td>Brief Overview of Clinical Experience</td>
<td>172</td>
</tr>
<tr>
<td>Table of Academic Assignments</td>
<td>176</td>
</tr>
</tbody>
</table>
Major Research Project: Empirical Paper

The Relationship Between Dissociation, Susceptibility to Doubt and Obsessive-Compulsiveness.

Word Count: 9679
Abstract

Objective: Dissociation has been suggested as a common experience amongst individuals with obsessive-compulsive disorder (OCD), yet this area has received limited research beyond demonstrating a relationship exists. The current study sought to generate new knowledge about how and why dissociation might occur within the context of OCD. Inferential Confusion (IC), an OCD specific style of reasoning resulting in obsessive doubts, was considered one promising line of enquiry. IC and dissociation both involve elements of engaging with one’s imagination. It was predicted that traits of dissociative absorption and detachment would be able to predict the extent to which individuals are susceptible to doubt through over investing in possibility-based information, and that this doubt in turn would be related to their degree of obsessive-compulsiveness (OC). Design: A quasi-experimental design was employed to elicit a measure of IC, through the online Inference Process Task (IPT). The IPT is a reasoning task designed to assess changes in levels of doubt. Further cross-sectional data was attained through online completion of self-report measures of OC, dissociative traits and depression. Participants: 114 non-clinical participants were recruited, 48 were classified as experiencing high OC, and 66 as experiencing low OC. Results: As expected, a positive relationship existed between OC and dissociative traits, with correlations ranging from $r = .23$ to $r = .73$. However dissociative traits were not found to predict susceptibility to doubt arising from possibility-based information. Contrary to expectation and previous studies, IC was not significantly correlated with OC ($r = .08$). Conclusion: It was concluded that dissociative traits had not played a significant role in IC. However, this conclusion should be generalised with caution as the results also suggested the IPT may not have reliably operationalised IC.
Further replications of the current study would be beneficial, perhaps including an alternative measure of IC.

**Keywords**

Obsessive compulsive disorder; obsessive compulsiveness; dissociation; absorption; detachment; inferential confusion.

**Target Journal**

The Journal of Obsessive-Compulsive and Related Disorders.
Obsessive-compulsive disorder (OCD) is characterised by the experience of obsessions and (or) compulsions. Obsessions are defined as “recurrent and persistent thoughts, urges or images that are experienced as intrusive and unwanted” (The Diagnostic and Statistical Manual of Mental Disorders, 5th ed.; *DSM–5*; American Psychiatric Association [APA], 2013, p235). Compulsions are “repetitive behaviors or mental acts that an individual feels driven to perform in response to an obsession or according to rules that must be applied rigidly” (APA, 2013, p235). Although rarely mentioned in standard texts, some researchers have suggested that individuals with OCD may also frequently experience dissociative symptoms (e.g., Pica, Beere & Maurer, 1997).

Dissociation is defined by a “disruption and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behaviour” (APA, 2013, p291). Whilst dissociation is largely represented within established diagnostic manuals as forming distinct dissociative disorders (e.g., dissociative amnesia), there is also much recognition of a ‘close relationship’ with trauma related disorders (APA, 2013). The propensity for dissociation within the context of OCD however has received considerably less acknowledgement or research attention, with most endeavours to explore the potential connection resulting in mixed conclusions. For example, some correlational studies within clinical populations have identified a positive relationship between OCD symptom severity and dissociation (Goff, Olin, Jenike, Baer & Buttolph, 1992; Prasko et al., 2010), whilst others have found no such evidence (Lochner et al., 2004). Similarly, when comparing individuals with OCD to non-clinical control groups a contradictory picture has been obtained, with some studies finding those with OCD experiencing significantly higher levels of
dissociation (Merckelbach & Wessel, 2000; Raszka, Prasko, Koprivova, Novak & Admacova, 2009), whilst other studies have been unable to replicate these findings (Prasko et al., 2010; Watson, Wu & Cutshall, 2004). One possible reason for these inconsistent results is the failure to recognise the heterogeneous nature of dissociation, for example by disregarding symptom specificity (Watson et al., 2004). In summary, over the past two decades, it appears that research into OCD and dissociation has remained sporadic, variable in quality, and lacking in explanatory value. As such, the role of dissociation is yet to be conceptually located within an OCD framework. The current paper aims to contribute to the currently sparse evidence base around OCD and dissociation.

Dissociation has now been recognised across a range of disorders (Spitzer, Barnow, Freyberger & Grabe, 2006), yet those experiences which have been labelled as dissociative appear to present somewhat differently. Such observations challenge the previously established notion that dissociative symptoms vary only by degree along a continuum. Spitzer et al. (2006) argued that the use of the term dissociation had become diffuse and all-encompassing thus creating conceptual confusion, a problem which Holmes et al. (2005) believed has hampered consistent and reliable research. Grounded in a review of evidence, the earlier work of Cardeña (1994), clinical experience, and also broadly supported by experimental and factor analytic studies, Holmes et al. (2005) attempted to clarify the confusion by proposing two qualitatively distinct forms of dissociation: compartmentalisation and detachment. Compartmentalisation was said to be characterised by a “deficit in the ability to deliberately control processes or actions that would normally be amenable to such control” including an “inability to bring normally accessible information into conscious awareness” (Holmes et al., 2005, p7). Importantly, processes which have
become compartmentalised (e.g., perceptions and memories), continue to operate but their associated information content does not integrate fully with conscious experience. Dissociative amnesia and conversion disorder were said to represent forms of compartmentalisation, whilst daydreaming and divided attention both non-pathological types of compartmentalisation. The alternative form of dissociation, detachment, was defined by Holmes et al. (2005, p5) as “an altered state of consciousness characterised by a sense of separation (or a ‘detachment’) from certain aspects of everyday experience be it their body (as in out of body experiences), their sense of self (as in depersonalisation), or the external world (as in derealisation)”. This dichotomous approach to classifying dissociation continues to recognise the potential for quantitative variation of symptoms, but on two distinct conceptual continuums. Other researchers (e.g., Brown, 2006; Bowins, 2012) have since adopted this approach too. For a more comprehensive account of detachment and compartmentalisation, see Holmes et al. (2005) and Brown (2006).

Cognitive behavioural theory currently stands at the forefront of OCD research and therapy. Within this approach, obsessions are understood as “normal intrusive thoughts, which the sufferer misinterprets as a sign that harm to themselves or to others is a serious risk and that they are responsible for such harm (or its prevention)” (Salkovskis, 2007, p229). This approach holds that obsessions therefore result from benign ‘intrusions’, and that distress is a product of their interpretation. More recently an alternative (but not necessarily contradictory) inference-based approach (IBA) has been proposed by O’Connor and Robillard (1995). The IBA primarily conceptualises obsessions as doubts. It posits that these obsessive doubts are the product of a subjective and dynamic process of reasoning, during which an individual with OCD becomes confused between reality and
possibility. Such confusion is said to arise from the interplay between two potentially competing sources of information used to make a reasoned judgement about a situation: sense-based information (perceived through the senses) and possibility-based information (conceived in the imagination) (Aardema, O’Connor, Pélissier & Lavoie, 2009). Crucially, the IBA predicts that individuals with OCD over-invest in possibility-based information at the expense of the more reliable source of sense-based information. This process has been named inferential confusion (IC), and reportedly leads an individual to doubt ‘reality’. When an individual is inferentially confused, they infer that remote imaginative possibilities are in fact probable and represent reality, and consequently act as if this were so regardless of credible sense-based data to the contrary (Aardema & Wu, 2011). For example, “I see the gas stove is switched off, but I believe it might somehow still be on”. Importantly, within the IBA there is no suggestion that perceptual processes are actually impaired (Aardema, Emmelkamp & O’Connor, 2005), instead they remain intact but must compete against information which has been internally generated. The IBA is primarily interested in the IC reasoning style which generates doubt, it is regarded as the primary process in OCD. Subsequent to this, a secondary process then takes place whereby the doubts are appraised, e.g. “if the stove is really still on, I will be to blame for a fire”. This is in contrast to the cognitive model, which centralises the importance of the appraisals rather than the obsession itself.

Empirical support for the IBA has been accrued mainly through questionnaire based studies (e.g., Aardema, O’Connor, Emmelkamp, Marchand & Todorov, 2005), where individuals with OCD have consistently demonstrated significantly higher endorsement of an IC reasoning style. Further to these, in a novel reasoning task (The Inference Process Task, IPT, Aardema et al., 2009) which aimed to emulate the
process of weighing up sense-based versus possibility-based information, it was found that possibility-based information generated more doubt than reality-based information, with those with OCD also being significantly more influenced by possibilities than non-clinical controls. These results imply a differential impact of sense-based and possibility-based information in the reasoning processes of people with and without OCD. However, less is understood about why this difference exists, and the current paper proposes that the variable of dissociation may play a part.

O’Connor and Aardema (2012) suggest that IC may lead to “immersion in possible worlds”, with accompanying feelings of dissociation. In line with this prediction, there appears to be a number of conceptual similarities apparent between IC and dissociative phenomena. For example, reality/sense perception remains intact yet is not integrated effectively with other sources of information during the reasoning process. Furthermore, a subset of dissociative symptoms representing absorption and imaginative involvement (processes also seemingly implicated in shaping possibility-based information in IC) were identified during factor analysis (Stockdale, Gridley, Balogh & Holtgraves, 2002) of the commonly used Dissociative Experiences Scale (DES-II, Carlson and Putnam, 1993). In general Goff et al. (1992) and Raszka et al. (2009) found a high incidence of the absorption subtype of dissociation in people with OCD. But more specifically, Aardema and Wu (2011) identified that the DES absorption subscale formed a unique and significant relationship with IC traits, as measured by Inferential Confusion Questionnaire-Expanded Version (Aardema et al., 2010). This final point would benefit from further testing using the experimental IPT task (Aardema et al., 2009) which would capture the tendency for IC in action.
Bowins (2012) argued that dissociative absorption was positioned within the realms of compartmentalisation, defining absorption as “disconnecting from one’s circumstances, both external and psychological, and becoming immersed in another focus” (p. 309), which may entail a high degree of imaginative involvement. Brown (2006) proposed that compartmentalisation phenomena could be explained by an underlying cognitive anomaly residing with the disturbed retrieval of memory. Viewing experience as a construction, Brown’s model states that information from memory is retrieved in order to help make sense of perceptual information. Perceptual hypotheses and primary representations are then created, which form the basis for experience. Experience is therefore importantly not seen as synonymous with what is perceived, as it invites the combination of sensory and memory information. The basis for misinterpretation, and therefore an alternative experience which does not match reality, was said to be an over-activation of rogue memory representations which might originate from internal (e.g., direct experience of the symptom, imagery/fantasy) or external experiences (e.g., exposure to symptoms in others, media images). The consequence of retrieving inappropriate rogue memories to help interpret perceptual information, is that experience becomes distorted. Brown’s (2006) model implies that internally generated information (sourced originally either internally or externally) has the potential to dominate sense-based data during compartmentalisation. This explanation appears to fit with the notion of IC, where information that has not originated from perceptual sense-based sources dominates the content of experience in a very convincing way. Brown’s (2006) model might argue that possibility-based information is so compelling as it originates from familiar memory traces.
From a theoretical perspective the central features of IC and compartmentalisation appear to converge. However, O’Connor and Aardema (2012) alternatively hypothesised that IC was more aligned with a detachment type dissociation, a claim that might tentatively be supported by Watson et al.’s (2004) observation that OCD symptoms in general (not specifically related to IC), correlate with the ratings of detachment. With reference to a relational model of consciousness, O’Connor and Aardema (2012) hypothesised that conscious experience of reality was determined by one’s presence in the current situation, meaning the extent to which one’s focus of attention (or project) at that moment in time is coherently linked with the perceived context. However, when one is immersed in considering different possibilities about their current situation as is thought to be the case in IC, presence (grounding of oneself) is reduced, thus feelings of things being somehow distant or unreal are created. This proposed detachment implies a diminished quality of experience, whereas conversely the concept of compartmentalisation infers a somehow alternate type of experience that might be considered as in some way different, incomplete or distinct from reality. It is important to note however, that to date no empirical evidence has been generated to support either hypothesis, and they therefore remain informed speculation. Furthermore, both dissociation and OCD are regarded as heterogeneous, and thus the possibility for each dissociative subtype to feature in some way in OCD is not precluded.

In summary, research has indicated the potential for dissociation amongst individuals with OCD, however less can currently be explained about its role. The IBA offers one provoking line of enquiry, as it appears there are a number of conceptual similarities between dissociation and IC. The IBA considers obsessions
to be doubts which evolve from a dynamic reasoning process of weighing-up sense-based and possibility-based information. In a nutshell, IC is a “characteristic of OCD that leads the imagination to trump the senses” (Aardema et al., 2005, p343). However, a critical question remains unanswered: why does possibility take on the feeling of reality, where genuine perceptions are disbelieved? The current study firstly aimed to employ further replication of the IPT (Aardema et al., 2009), thus consolidating ‘in action’ evidence for IC. Secondly, it proposed to explore whether the tendency to dissociate is related to a susceptibility to the impact of possibility-based (imaginative) information. It was suggested that the findings of such investigation would provide clinically relevant information, as IC and dissociation have both been associated with a reduced efficacy of therapeutic interventions for OCD (Aardema et al., 2005; Rufer et al. 2006a). The following predictions were made: (1) Following from Aardema et al. (2009), possibility-based information will increase doubt, whereas conversely reality-based information will reduce doubt. The degree to which possibility-based information induces doubt will be significantly greater in those with higher levels of OC, however this difference will only be observed in a scenario which infers a typical OC-related concern; (2) traits of dissociative absorption and derealisation will be positively correlated with obsessive-compulsiveness; (3) traits of dissociative absorption and derealisation will predict variance in the impact of possibility-based information on doubt.
Method

Overview of Design

Experimental analysis. This study used a mixed design quasi-experiment. The sample was dichotomised retrospectively on the basis of a self-report measure to create two levels of the between-participants variable, ‘level of obsessive compulsiveness (OC)’: (i) those who were high in OC, and (ii) those who were low in OC. In accordance with the established Inference Process Task (IPT, Aardema et al., 2009), the within-participants factor was ‘information type’, which consisted of two levels: reality-based and possibility-based information. The dependent variable was the cumulative level of doubt experienced by participants. This design was repeated using the two IPT scenarios designed by Aardema et al. (2009), one which inferred risk of harm (OC relevant) and one which was neutral. This essentially created a second within-participants variable, however in this study each scenario was analysed separately.

Correlation analysis. Using self-report measures, both dissociative absorption and derealisation traits were analysed for evidence of a relationship with OC.

Regression analysis. The study intended to use a multiple-regression technique to establish the unique contribution of self-reported dissociative absorption and derealisation traits to the variance of doubt resulting from possibility-based information (as measured by the IPT). The analysis was designed to control for the potential effects of depression using a self-report measure of mood.
Participants

OC has been proposed as a continuous variable distributed amongst the general population (Rachman and De Silva, 1978; Salkovskis and Harrison, 1984). In line with this and demonstrated by a recent literature review, (Abramowitz et al., 2014) it is both common and appropriate to use an analogue sample for OC research. Participants were therefore recruited from non-clinical sources where a verifiable diagnosis of OCD was neither an inclusion or exclusion criteria. The sample was broad and self-selecting, with the only exclusion factors being a failure to indicate one’s consent or being under 18 years old.

Participants were recruited through placing adverts with local business employers and an online OCD charity (see Appendix 1). The debrief information also suggested participants could forward the advert to any interested friends or family if they wished, thus ‘snowballing’ the sample. Participants were included in the study if they confirmed they were over 18 years old, able to understand the instructions and freely consented. A priori sample size calculation suggested the number of participants recruited provided sufficient power to detect significant effects. The overall sample consisted of 114 participants, of whom 85 (74.6%) were female and 29 (25.4%) were male, with a mean age of 35.84 years (range = 18-67, SD = 11.04). The sample mostly consisted of White British individuals (101, 88.6%), however other ethnic backgrounds were also represented: White Irish (1, .9%), other white backgrounds (10, 8.8%), White-Black African (1, .9%) and Chinese (1, .9%). 66 (57.9%) participants had been educated to degree level or higher. In terms of employment 82 (71.6%) were employed full-time, 15 (13.2%) employed part-time, 7 (6.1%) were students, 1 (.9%) was retired, 2 (1.8%) were unemployed and a further 7 (6.1%) stated their employment status as ‘other’.
Although not a prerequisite to participation, 22 individuals identified they had sought help for OCD (19.3%). Other problems for which participants had previously sought help included depression (54, 47.4%), social anxiety (13, 11.4%), post-traumatic stress disorder (8, 7%), panic disorder (9, 7.9%), phobia (6, 5.3%) and generalised anxiety disorder (12, 10.5%). The presence of depressive symptoms in the overall sample was measured using the Depression Anxiety Stress Scale – 21 (DASS21; Lovibond & Lovibond, 1995), where a mean score of 7.09 (SD = 6.68) was observed. This figure would appear higher than in other non-clinical OC sample studies (e.g., $M = 2.83$, $SD = 3.87$, Henry & Crawford, 2005), and according to Lovibond and Lovibond (1995) would be consistent with the ‘moderate range’ of depression rather than the ‘normal range’ reported in other non-clinical studies.

Where analyses required the demarcation of high and low OC, the sample was dichotomised using the recommended cut-score of 18 on the Dimensional Obsessive-Compulsive Scale (DOCS, Abramowitz et al., 2010). The High OC group comprised 48 (42.11%) participants, and the Low OC group comprised 66 (57.89%). Table 1 describes the characteristics of the high and low OC groups in terms of the OC symptom subtypes reported by each.

Table 1
Mean Scores and Standard Deviations of DOCS Symptom Subscales

<table>
<thead>
<tr>
<th>Symptom Subscale</th>
<th>High OC Group (n=48)</th>
<th>Low OC Group (n=66)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Contamination</td>
<td>7.85</td>
<td>5.03</td>
</tr>
<tr>
<td>Responsibility</td>
<td>9.23</td>
<td>5.81</td>
</tr>
<tr>
<td>Unacceptable thoughts</td>
<td>9.54</td>
<td>5.30</td>
</tr>
<tr>
<td>Symmetry</td>
<td>7.83</td>
<td>5.01</td>
</tr>
</tbody>
</table>
Measures

**Experimental analogue of reasoning processes.** The Inference Process Task (IPT, Aardema et al., 2009) provides an analogue of the reasoning process involved in generating obsessional doubt. The task offers two brief scenarios, each followed by three couplets of reality and possibility based information. Following the presentation of each scenario and after each new segment of information, participants are asked to rate the probability than an event related to the scenario has occurred on a scale of 10-100 (seven ratings in total). This rating represents the level of doubt that the event has not actually occurred. Participants also rate their baseline level of anxiety in response to each scenario. The first scenario relates to an OCD-type threat about a potential car accident involving pedestrians, with subsequent couplets of information such as “you watch the expressions on people’s faces and see no emotion that might indicate an accident” (reality) and “the lack of expression in people’s faces may have been shock” (possibility). The second scenario relates to a neutral non-threat condition about a possible bus strike, with following couplets of information such as “at the end of the street you see a bus driving on what appears to be a different route” (reality), and “maybe the bus was out of service since you could not see whether there were any people in it” (possibility). Minor adaptions were made to the original wording of the IPT to suit a British audience for the purposes of the current study. It should also be noted that due to issues with the online administration of the IPT, the current investigation did not counterbalance the order in which the threat and non-threat conditions were presented, as did the original IPT study. This would therefore potentially allow practice or fatigue effects to emerge on the second scenario (neutral condition). The IPT has demonstrated its ability to operationalize inferential confusion by achieving good convergent validity with the
Inferential Confusion Questionnaire (Aardema et al., 2005). See Appendix 2 for full IPT task.

**Self-report measures.** The Dimensional Obsessive-Compulsive Scale (DOCS, Abramowitz et al., 2010) is a self-report scale consisting of 20 items measuring obsessive-compulsiveness. The severity of obsessions and compulsions are measured within four empirically derived dimensions: contamination, responsibility, unacceptable thoughts and symmetry. Usefully, the DOCS overcomes the limitations of other OC measures by accommodating a person’s idiosyncratic symptoms. The severity of OC is rated in relation to a number of domains, including disruption to daily life. The sum of severity scores across all domains yields a total severity score (with a maximum possible score of 80). The author’s evaluation of the full scale against another common measure of OC, the Yale Brown Obsessive Compulsive Scale (Goodman et al., 1989), demonstrated good convergent validity (r = .54). Reliability was also confirmed through internal consistency (Cronbach’s alpha of .90 for people with an OCD diagnosis; .93 for students) and good test-retest coefficients (r = .66). In the current study the DOCS was found to have excellent internal consistency, with a Cronbach’s Alpha of .97. See appendix 3 for DOCS.

The Dissociative Experiences Scale II (DES-II, Carlson & Putnam, 1993) is a 28 item self-report measure of everyday experience, reflecting both pathological and non-pathological dissociative traits. It is minimally amended from the first edition Dissociative Experiences Scale (DES). Using a scale of 0 to 100, individuals rate the frequency with which they experience each dissociative phenomenon. Frischholz et al. (1990) reported the DES had good internal consistency with a full scale Cronbach’s Alpha of .95. A test-retest reliability co-efficient of r = .84 has also been reported (Bernstein & Putnam, 1986). Frischholz et al. (1990) suggested moderate
to good convergent validity through comparing the DES with constructs related to dissociation such as perceptual alterations (r = .52) and absorption (r = .39). The foremost purpose of the DES-II’s development was to provide a single quantification of dissociation in a clinical population. Yet a number of researchers have repeatedly found an underlying three factor structure, which has also been validated within a non-clinical population (Stockdale et al., 2002). The factors represent i) absorption and imaginative involvement, ii) amnesia, iii) derealisation and depersonalisation. Whilst these factors are widely used, mixed evidence exists to support them. The scale has also been criticised for assessing frequency instead of severity of symptoms (Holmes et al., 2005). Despite these limitations however, a stronger alternative measure is yet to be developed. In the current study the following Cronbach’s alpha’s were calculated: full scale = .95, absorption and imaginative involvement = .92, and derealisation and depersonalisation = .88, indicating good internal consistency. See appendix 4 for DES-II.

The Dissociative Processes Scale (DPS, Harrison & Watson, 1992) is a 33 item self-report scale of dissociative tendencies. Uniquely, the DPS is orientated towards detecting differences in the types of dissociation considered normal within the general population. Individuals rate how true each statement is of themselves using a five-point likert scale (i.e., strongly disagree, disagree, neutral or cannot decide, agree or strongly agree). Three factor analytically derived subscales have been offered: Obliviousness, Detachment and Imagination. These appear to broadly reflect the commonly used DES-II subscales. Overall, the DPS correlates with the DES-II (rs = .58 and .61, Watson, Wu & Cutshall, 2004), inferring good convergent validity. Investigations by Watson et al. (2004) also revealed good internal consistency of the scale (Cronbach’s alpha for the full scale = .94; obliviousness
scale = .86; detachment scale = .89; imagination scale = .82). Notably, the DPS remains unpublished and has therefore attracted limited exploration of its psychometric properties. In the current study the DPS achieved good internal consistency according to Cronbach’s alpha calculations: full scale = .95, imagination = .89, and detachment = .92. See appendix 5 for DPS.

The Depression Anxiety Stress Scale 21 (DASS 21; Lovibond and Lovibond, 1995) is a self-report scale containing 21 items, developed as both a clinical and research tool. Statements regarding emotional states are presented to individuals who rate their personal relevance based on a four-point likert scale (i.e., did not apply to me at all, applied to me to some degree or some of the time, applied to me to a considerable degree or a good part of time, applied to me very much or most of the time). The DASS 21 measures depression, anxiety and stress dimensionally, and does not utilise cut-off scores. Henry and Crawford (2005) reported good internal consistency for the scale and it’s subscales (Cronbach’s alpha for the full scale = .93; depression scale = .88; anxiety scale = .82; stress scale = .90). Crawford and Henry (2003) found correlation coefficients between the DASS and the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) which suggested high convergent validity (depression scale r = .66; anxiety scale r = .62). The current study used all aspects of the DASS 21 to explore the characteristics of the high and low OC groups, however the depression subscale alone was intended to be used during regression analysis to control for the potential effect of low mood. Cronbach’s alphas of .97 for the full scale, .96 for the depression subscale, .91 for the anxiety subscale and .91 for the stress subscale were found, inferring excellent internal consistency in the current study. See appendix 6 for DASS 21.
Apparatus

The study used an online system by Sawtooth Software Inc. to present and record all measures.

Procedure

The current study was reviewed and granted a favourable ethical opinion by the Faculty of Arts & Human Sciences Ethics Committee at the University of Surrey prior to data collection (see appendix 7 for ethics committee letter). Participating local businesses were approached and placed the recruitment advert on their intranet, noticeboard, newsletter or in an email. Similarly the OCD charity displayed the advert on their public website. Through the advert, participants were directed to the secure online testing site. Initially, written information orientated participants to the purpose of the study, the requirements for taking part, their rights and a consent form (see appendix 8). Once informed consent had been indicated, optional demographic data was requested (see appendix 9), which was followed by the completion of the IPT, DOCS, DES-II, DPS and DASS 21. Finally, participants were given debrief information and the opportunity to contact the researcher should they have questions or wish to receive a summary of the findings (see appendix 10). Throughout the study a help page was available to participants which signposted them to sources of support should concerns or distress arise (see appendix 11).
Results

The following data was collected online between February and September 2013.

Demarcation of High and Low OC Groups for the Purposes of Analysis

As already stated, a clinical diagnosis of obsessive-compulsive disorder (OCD) was not sought to differentiate and explore the hypothesised differences between those experiencing high and low levels of obsessive-compulsiveness (OC). Instead, the current sample was dichotomised using the recommended cut score of 18 on the DOCS. The low OC group comprised 66 participants with a mean DOCS score of 6.59 (SD = 4.77), and the high OC group was formed of 48 participants with a mean DOCS score of 34.46 (SD = 14.64). To verify these two groups were indeed justifiably distinct and valid, a number of comparisons were made. This verification was important if the subsequent planned analyses were also to be considered valid.

From an independent t-test comparison of mean DOCS scores attained in the high OC (M = 34.46, SD = 14.64) and low OC (M = 6.59, SD = 4.77) groups, it can be inferred that the two groups statistically differ significantly, t(54.32) = -12.70, p < .001, 95% CI [-32.26, -23.47]. The magnitude of this difference in means, of -27.87, can be considered very large, eta squared = .59. Furthermore, in Abramowitz et al.’s (2010) investigation of the DOCS, a student group attained a mean score of 11.93 (SD = 9.87), meanwhile those with an OCD diagnosis attained a mean of 30.06 (SD = 15.49). Whilst the current sample used neither specifically students nor those with a formal OCD diagnosis, the characteristics of the high and low group might be expected to be broadly similar to those in Abramowitz et al.’s (2010) study. With this in mind, the means obtained in the current sample for the dichotomised groups
seem sufficiently similar to Abramowitz et al.’s (2010) to support their valid
distinction.

Further confirmation of the sample’s valid division was sought through
comparing the initial levels of anxiety provoked by reading each scenario presented
by the IPT. Logic would predict that those with a higher level of OC would report
higher levels of anxiety than those with low OC. Analysis demonstrated that this
distinction was apparent. Due to non-normal distributions of data in both OC groups,
a Mann-Whitney U test was used for comparison of anxiety in the threat related
(driving) scenario. This showed those with high OC ($Md = 100, n = 48$), were
significantly more anxious at the start of the task than those with low OC ($Md = 90, n$
$= 66$), $U = 1027.50, z = -3.38, p = .001$. The effect size of this difference was
medium, $r = .32$. Using an independent t-test (as the assumption of normality was
met for both OC groups), a difference in initial anxiety levels was similarly found in
the non-threat related scenario between those in the high OC ($M = 51, SD = 31.11$)
and low OC groups ($M = 32.42, SD = 20.61$), $t(76.18) = -3.60, p = .001, 95\%$ CI [-
28.85, -8.30]. The effect size of this difference was moderate to large, eta squared =
.10.

In a final test of the different characteristics held by the low and high OC
groups, the levels of depression, anxiety and stress reported by each group through
the DASS were compared. Depression, anxiety and stress are common co-morbid
symptom of OCD, and therefore a true high OC group could also be expected to
demonstrate a higher level of such symptoms than their low OC counterparts. These
expected contrasts were indeed present within the current sample. A Mann-Whitney
U test (performed on the basis of non-normal distribution of scores) showed that
those with high OC ($Md = 10, n = 48$) also had significantly higher levels of
depressive symptoms than those with low OC ($Md = 2.5, n = 66$), $U = 570.50, z = -5.84, p < .001$). The degree of difference was considered large, $r = .55$. Comparison of the anxiety subscale for the high and low OC group also revealed a significant difference, where a Mann-Whitney U test (performed on the basis of a non-normal distribution of scores), demonstrated that those in the high OC group ($Md = 7, n = 48$) experienced significantly higher levels of anxiety that those in the low OC group ($Md = 1, n = 66$), $U = 466, z = -6.47, p < .001$). This was considered a large difference, $r = 0.61$. Finally, an independent t-test showed that the high OC group ($M = 12.98, SD = 5.27$) reported significantly more stress than the low OC group ($M = 5.55, SD = 4.27$), $t(88.07) = -8.04, p < .001, 95\% CI [-9.27, -5.60]$. The magnitude of this difference in means, of -7.43, would be considered large, eta squared = 0.36.

Together these analyses indicate that the high and low OC groups created for the current sample are substantially different enough in a number of key features to be considered valid representations.

**Hypothesis One: The Impact of Possibility and Reality-Based Information on People with High Levels of OC**

In line with Aardema et al.’s (2009) IPT study, levels of doubt were measured by calculating the impact of possibility-based and reality-based information on how likely a person judged an event to have occurred within a given scenario. Higher probability scores represent higher levels of doubt (i.e., doubt that the event did not really occur). Doubt arising from possibility-based information was calculated by subtracting probability ratings following reality-based information from the ratings following their paired possibility-based information. This was done for each pairing of new information, giving a total of three scores that were totalled to form the
cumulative impact of possibility score. Similarly, the cumulative impact of reality score was calculated by subtracting ratings following possibility-based information from their preceding rating (i.e., initial rating or prior possibility rating), then totalling the resulting scores. See Figure 1 for scoring illustration.

<table>
<thead>
<tr>
<th></th>
<th>Cumulative Impact of Possibility =</th>
<th>Cumulative Impact of Reality =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial probability rating (I)</td>
<td></td>
<td>(R1 - I)</td>
</tr>
<tr>
<td>Probability rating following reality information (R1)</td>
<td>(P1 - R1)</td>
<td></td>
</tr>
<tr>
<td>Probability rating following possibility rating (P1)</td>
<td></td>
<td>(R2 - P1)</td>
</tr>
<tr>
<td>Probability rating following reality information (R2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability rating following possibility rating (P2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability rating following reality information (R3)</td>
<td>(P2 - R2)</td>
<td></td>
</tr>
<tr>
<td>Probability rating following possibility rating (P3)</td>
<td>(P3 - R3)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 Calculation of Cumulative Doubt Scores from the IPT.

A mixed 2 (level of OC) x 2 (type of information) ANOVA was performed to investigate how possibility and reality-based information impact levels of doubt, and
whether this impact is differentiated by a person’s level of OC. This analysis was repeated for both the threat-related and neutral condition. See appendix 12 for data distributions and justification of analytic strategy. In the threat-related condition, no interaction was found between the impact of different types of information and level of OC on self-ratings of doubt, Wilks’ Lambda = 1.00, $F(1, 112) = .08$, $p = .78$, partial eta squared = .001. This implies that doubt as a result of either possibility or reality-based information is not significantly influenced by the level of OC a person experiences. A significant main effect was detected for the impact of information type on doubt (possibility or reality), Wilks’ Lambda = .50, $F(1,112) = 112.59$, $p = .001$, partial eta squared = .50, with both high and low OC groups showing an increase of doubt following possibility based information (increase denoted by positive figure) and a decrease in doubt following reality based information (denoted by a negative figure) (see Table 2). The main effect comparing low and high OC groups was not significant, $F(1,112) = 2.41$, $p = .12$, partial eta squared = .02, which suggests no substantial difference in doubt between those with varying levels of OC. See Table 2 for the mean cumulative doubt scores for each OC group following possibility and reality-based information.
Table 2
Cumulative Doubt Scores for Low and High OC Groups Following Possibility- and Reality-Based Information (Threat Scenario Condition of the IPT).

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Low OC</th>
<th>High OC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>Reality-based</td>
<td>66</td>
<td>-66.73</td>
</tr>
<tr>
<td>Possibility-based</td>
<td>66</td>
<td>29.67</td>
</tr>
</tbody>
</table>

A similar pattern of results was also found in the neutral scenario condition of the IPT (see Table 3 for the mean cumulative doubt scores for each OC group following possibility and reality-based information). Again no interaction effect was detected between the impact of different types of information and level of OC on self-ratings of doubt, Wilks’ Lambda = 1.00, \( F(1,112) = .38, p = .54 \), partial eta square = .003. This indicates that an individual’s level of OC does not influence how they respond to different types of information. In the neutral scenario a significant main effect was also found for the impact of information type on doubt (possibility or reality), Wilks’ Lambda = .39 , \( F(1,112) = 173.39, p <.001 \), partial eta squared = .61, where both high and low OC groups displayed an increase of doubt following possibility based information (increase by denoted positive figure) and a decrease in doubt following reality based information (denoted by a negative figure) (see Table 3). The main effect comparing low and high OC groups doubt scores was not significant, \( F(1,112) = 1.95, p = .17 \), partial eta squared = .02. It therefore appears that doubt, as measured by the IPT, does not vary significantly between those with different degrees of OC.
Table 3
Cumulative Doubt Scores for Low and High OC Groups Following Possibility- and Reality-Based Information (Neutral Scenario Condition of the IPT)

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Low OC</th>
<th></th>
<th></th>
<th>High OC</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Reality-based</td>
<td>66</td>
<td>-58.45</td>
<td>36.73</td>
<td>48</td>
<td>-59.63</td>
<td>44.05</td>
</tr>
<tr>
<td>Possibility-based</td>
<td>66</td>
<td>26.11</td>
<td>26.62</td>
<td>48</td>
<td>33.23</td>
<td>42.76</td>
</tr>
</tbody>
</table>

In light of there appearing to be no appreciable difference between how people who are either high or low in OC respond to different types of information, a further correlational test was performed to explore this through an alternative approach to analysis. Pearson’s product-moment correlation coefficient revealed that in the threat condition no significant relationship existed between OC (as measured by the DOCS total score) and levels of doubt in response to possibility-based information, \( r = .08, n = 114, p = .38 \). This adds support to the findings of the previous ANOVAs, that the extent of a person’s OC is not related to the level of doubt they will experience as a result of receiving possibility-based information.

Further to the main analyses, an interesting observation was made that although cumulative doubt ratings did not differ between those high and low in OC, the two groups did in fact show significantly different initial probability ratings. In the threat condition a Mann-Whitney U test (used on the basis of non-normal distributions) showed that the initial probability ratings of people low in OC (\( Md = 80, n =66 \)) differed significantly from those of people high in OC (\( Md = 90, n = 48 \)).
\[ U = 1222.50, \ z = -2.10, \ p = .04, \] with a small to medium effect size, \( r = .2. \) This result however was not specific to the threat related condition, as in the neutral scenario condition individuals who were high in OC \( (Md = 80, \ n = 48) \) also reported significantly more probability of an event occurring than those low in OC \( (Md = 70, \ n = 66), U = 1224.00, \ z = -2.09, \ p = .04, \) which amounted to a small to medium effect size, \( r = .2.. \) It would therefore seem that people high in OC initially perceived events more likely to happen than those low in OC, however this was evident in both threat and non-threat scenarios.

In summary, these results suggest that the type of information presented about a scenario is an important factor in determining how much doubt is experienced about the situation, the effect size for the impact of such information was very large for both threat-based and neutral scenarios. However an individual’s level of OC was not a significant influence in how people respond to this information, and the doubt of individuals who are high in OC does not increase more as a result of possibility information than those with low OC as predicted. These patterns of response remained consistent across both threat and neutral scenarios.

**Hypothesis Two: The Relationship Between OC and Dissociative Absorption and Derealisation**

A Spearman’s rho test was calculated to assess the relationship between OC (as measured by the DOCS total score) and two subscales of the DES-II: the imaginative involvement and absorption subscale, and the derealisation and depersonalisation subscale. This non-parametric test was used due to the non-normal distribution of variables in the full sample (see appendix 12). This analysis was also repeated for the two conceptually equivalent subscales of the DPS: imagination and
detachment. See Table 4 for results. All correlations were statistically significant and of a positive direction. Furthermore all correlations, apart from that of the DOCS and DPS imagination subscale, achieved a large effect size. Whilst still a significant correlation, the relationship between the DOCS and DPS imagination subscale achieved only a small effect size.

Table 4
Spearman’s Rho Results for Relationships Between OC and Dissociation in the Full Sample (n = 114)

<table>
<thead>
<tr>
<th>DOCS Score</th>
<th>DES-II Imaginative involvement and absorption</th>
<th>DES-II Derealisation and depersonalisation</th>
<th>DPS Imagination</th>
<th>DPS Detachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOCS total</td>
<td>.68 (p &lt;.001)</td>
<td>.73 (p &lt;.001)</td>
<td>.23 (p = .01)</td>
<td>.62(p &lt;.001)</td>
</tr>
</tbody>
</table>

Though the DES-II is the most commonly used measure of dissociative traits in research, it has also been subject to a number of criticisms. Therefore the DPS, an alternative and little used measure of dissociation designed specifically for a non-clinical population, was used alongside the DES-II in the current study. To explore the validity of the DPS as a future research tool, the total and individual subscales were correlated with those of the DES-II using a Spearman’s rho test. A strong positive correlation was found between the full scale scores of the dissociation measures, $r = .77, n = 114, p <.001$. Next the broadly corresponding subscales were correlated. Firstly, a significant positive relationship was found between the DES-II amnesia and DPS obliviousness subscales, $r = .63, n = 114, p <.001$. The association between the DES-II imaginative involvement and absorption subscale and the DPS
imagination subscale was also both positive and significant, \( r = .49, n = 114, p < .001 \). Finally, the DES-II derealisation and depersonalisation subscale and the DPS detachment subscale also showed a significant positive relationship, \( r = .80, n = 114, p < .001 \). This set of relationships supports the validity of the DPS as an alternative research measure of dissociation.

**Hypothesis three: Dissociation as a Potential Predictor of Doubt Resulting from Possibility-Based Information**

Prior to a hierarchal multiple regression analysis, preliminary correlational tests were carried out to confirm whether a relationship existed between subtypes of dissociative traits and the level of doubt arising from possibility-based information. Previous research (Aardema et al., 2009) has suggested that IC is specifically only present in domains where there are OC related concerns, rather than being a pervasive reasoning style, for this reason the analysis was carried out only for the IPT threat-based scenario. Due to some of the variables violating assumptions of normality, non-parametric tests were used (see appendix 12). A series of Spearman’s rho tests performed on the full sample (\( n = 114 \)) showed that no significant relationship existed between the cumulative impact of possibility-based information (doubt) and the subscales of interest on the DES-II: the imaginative involvement and absorption subscale, and the derealisation and depersonalisation subscale. Likewise, the DPS imagination and detachment subscales also demonstrated statistically non-significant relationships with the cumulative impact of possibility based information.
Table 5

Spearman’s Rho Results for Relationships Between Dissociation and Doubt Following Possibility-based Information in the Threat Scenario (Full Sample, n = 114)

<table>
<thead>
<tr>
<th>Doubt</th>
<th>DES-II Imaginative involvement and absorption</th>
<th>DES-II Derealisation and depersonalisation</th>
<th>DPS Imagination</th>
<th>DPS Detachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative doubt following possibility-based information</td>
<td>.11 (p = .25)</td>
<td>.08 (p = .39)</td>
<td>.12 (p = .22)</td>
<td>.09 (p = .35)</td>
</tr>
</tbody>
</table>

As these correlational tests failed to show any significant relationships, it was considered unproductive to proceed with the planned regression analysis. From the lack of basic correlations, it can be concluded that neither type of dissociative trait is significantly related to the level of doubt experienced by an individual as a result of receiving possibility-based information, and they would therefore also lack predictive power.
Discussion

The foremost purpose of the current study was to derive new explanatory knowledge relating to the frequently observed convergence of obsessive-compulsiveness (OC) and dissociation, contributing to what is currently a relatively sparse body of literature. In line with past research, a significant relationship was found to exist in the current data between OC and dissociative traits, specifically experiences representing the imaginative absorption and derealisation/detachment elements of dissociation. In an attempt to identify a theoretical basis for such a relationship, it was hypothesised that the tendency of those with OC to dissociate, particularly where an imaginative element was present, might be connected with the obsessive compulsive disorder (OCD) based idea of inferential confusion (IC). A fundamental feature of people who are inferentially confused is that when making judgements about a situation, they tend to be more susceptible to the influence of information that is internally generated and based on what one might imagine could possibly happen (as opposed to information received from the senses which describes what is actually happening), thus resulting in doubt. Given the imaginative component necessary for IC (i.e., to create possibility-based information) it was predicted that the tendency to dissociate would predict an individual’s susceptibility to possibility-based information. This hypothesis however was not substantiated. Interestingly, not only could a significant relationship not be found between the traits of dissociative absorption and susceptibility to possibility-based information, the outcomes of the Inference Process Task (IPT, Aardema et al., 2009) in general were not consistent with previous comparisons of OC versus non-OC groups. These findings will be explored in terms of theory and methodology, and the limitations of this study also discussed.
Past research has demonstrated that people with OCD are significantly more likely to experience dissociation than non-clinical groups (Merckelbach & Wessel, 2000; Raszka et al., 2009), and furthermore a positive correlation exists between the degree of OC and dissociation (Goff et al., 1992; Prasko et al. (2010). The replicability of these findings was tested. As predicted, a positive association between OC and dissociative traits could be observed, where those who reported being more affected by OC also reported a higher number of dissociative absorption and derealisation/detachment experiences. This is a useful finding in two respects; firstly it contributes further support to the body of evidence suggesting OC and dissociation are related. Secondly, it endorses the use of a non-clinical sample in similar research as the relationship could be demonstrated even in those who might be considered as experiencing a ‘low dose’ of symptoms. As with all correlational research however, the same limitations arise in that a relationship can be highlighted, but no inferences of causality can be drawn. Unfortunately, this is the point at which the majority of existing research has ceased, rarely going further to offer and explore a theoretical explanation for the relationship. Therefore the current study sought to develop this gap in knowledge and practice.

Drawing on Brown’s (2006) work concerning the possible cognitive processes underlying compartmentalisation, a potential connection between dissociation and OC was proposed. Theoretically, both dissociative absorption and IC embrace an element of compelling imagination. In Brown’s (2006) model a compartmentalised dissociative experience might occur when internal information (e.g. generated imaginatively), is inappropriately retrieved and overrepresented in the process of interpreting external situational information, thus creating an alternative and distorted experience. The current study drew a parallel between this type of
dissociative compartmentalised experience and IC, where information perceived by the senses is essentially trumped by what the mind imagines might be possible (Aardema et al., 2005). It was hypothesised that the tendency to experience the absorption subtype of dissociative symptoms would be predictive of an individual’s tendency to also become inferentially confused. This hypothesis and its rationale however was not supported by the current data, as the degree of dissociative absorption traits reported by participants could not predict the extent to which they were also influenced by possibility-based information. This is surprising as Aardema and Wu (2011) found that IC, as measured by a self-report questionnaire, was significantly correlated with the DES-absorption subscale, yet the IPT, an experimental analogue designed to operationally measure the same concept, was unable to demonstrate the same relationship. O’Connor and Aardema (2012) proposed an alternative dissociation-IC link, claiming that it was the experience of becoming detached from one’s surroundings that was more likely to be associated with IC. However, the current study did not support this either, as trait derealisation/detachment measures also showed no significant relationship with IC.

One conclusion to draw from the failed attempt to predict susceptibility to doubt from dissociative traits is that no genuine link exists between the two phenomena. This does not necessarily dispute that dissociation and OC are related in some way, however the current data suggests that they might not converge through IC. Although, by deconstructing the findings, alternative explanations for the non-significant relationship can be offered.

It is possible that imperfections in the measurement of both IC and dissociation may have inadvertently influenced the ability to detect a significant predictive relationship. The IPT (Aardema et al., 2009) is designed to imitate IC in
action, thus providing information about the reasoning process ‘in the moment’. However, whilst dissociation tends to be a transient state (Kruger & Mace, 2002) both the DES-II (Carlson & Putnam, 1993) and the DPS (Harrison & Watson, 1992) essentially report on an individual’s general trait towards dissociative experiences. Therefore neither measure of dissociation was able to determine whether a participant was actually dissociated at the point of reasoning within the IPT. In this respect, even if a significant result had been found, it would still be questionable to infer that dissociation had influenced a participant’s reasoning process ‘in the moment’. A more appropriate approach to investigating the hypothesis would have been to use a state measure of dissociation, however these are in short supply compared to trait measures. Further issues with the measurement of dissociation come from difficulties with the scales’ psychometric properties. In line with previous OCD and dissociation research (for example, Rufer, Fricke, Held, Cremer, & Hand, I., 2006b) and contemporary thinking on dissociation (Holmes et al., 2005), the current study adopted a symptom subtype approach to dissociation. The commonly used three factor model of the DES-II was therefore employed to reflect symptom subtypes through subscales. However, the validity of such subscales is debatable as factor analytic studies have revealed a number of variations in their structure (Carlson & Putnam, 1993). As such, the DES-II’s original authors (who intended it to yield a unitary score) advise caution in using the resulting subscales. Further to this point, more recent theory has developed around the nature and occurrence of dissociation (e.g. most notably Holmes et al., 2005), yet the most commonly used instruments to measure dissociation have not evolved to reflect these developments. It might be argued nevertheless, that despite these issues encountered in the measurement of dissociation, the fact remains that the DES-II in particular has
been adequate both in previous and the current research to detect a relationship between OC and dissociation. However, the characteristics of the absorption subscale are particularly pertinent to the current study, and may propose a more unique problem. The absorption subscale of the DES-II represents absorption in both internal (imaginative) and external events. Therefore it is unable to inform us whether an individual has a specific tendency to be drawn into imaginative experiences, which are more pertinent to the investigation of IC, or is more inclined to become absorbed into external activities such as watching a film. It is therefore possible that the DES-II absorption subscale was not a reliable representation of a person’s tendency towards imaginative involvement. Through the addition of the DPS though, it could be contended that this was not a significant factor, particularly as the DPS predominantly measures imaginative absorption and generated similar results to that of the DES-II.

The finding that neither type of dissociative trait investigated formed a significant relationship with the impact of possibility-based information on doubt was unexpected. But a further oddity in the data may also help to explain this. The current study essentially sought to provide a replication of the original IPT task in order to evaluate its reliability as a research tool. On the basis of Aardema et al.’s (2009) IPT study it was hypothesised that doubt would be increased by possibility-based information and decreased by reality-based information, with the predicted rise in doubt being more exaggerated in those with high levels of OC. However, the current data could not confirm this hypothesis and therefore the results of the original and only other existing IPT study could not be replicated. The results demonstrated that possibility and reality based information impacted doubt as expected (i.e., possibility information increased doubt and reality information decreased it), but the
extent of this impact was not differentiated for the high and low OC groups. Such differentiation (i.e., doubt would be aroused to a greater extent by possibility information for people who were high in OC) is a central tenet of the IC paradigm. It is perhaps therefore unsurprising that the expected relationship between dissociation and impact of possibility-based information could not be found.

In light of being unable to replicate the original IPT results it could be suggested that either IC does not exist as a valid concept, or that the IPT is an unreliable analogue of IC and does not consistently measure what it claims to. There is however insufficient evidence to reject IC as a whole, particularly as other questionnaire based studies support the overall concept (Aardema et al., 2010). In regard to the IPT task, although it is entirely possible that it is unable to measure IC, it is difficult to draw authoritative conclusions about this experimental method as there are no other published replication attempts to corroborate either position on its effectiveness. Aardema et al. (2009) found the Inferential Confusion Questionnaire – Expanded Version (ICQ-EV) a significant predictor of doubt in the IPT (beta = 0.41, $p < 0.05$). Including the ICQ-EV in the current study may therefore have been helpful to correlate with the IPT results, to reveal whether the IPT was indeed operating in the same way in this sample. However, adding another questionnaire to an already extensive set of measures may have made participation onerous and off-putting for participants.

Indeed, more investigations of the IPT in the future would be helpful. A further possible explanation for the inconsistencies between Aardema et al. (2009) and the current findings relates to the potential for a fundamental difference in the samples used by both studies, thus generating different results. When dichotomising the current sample into high and low OC groups, checks were employed to ensure
that this distinction was valid and characteristics consistent with what might be expected from a clinical OCD group versus a non-OCD group. A significant difference between the high and low groups in self-reported OC symptoms, anxiety evoked during the IPT threat-based scenario and levels of self-reported depression all supported the assertion that the high OC group was sufficiently different from the low OC group, in terms of features that you would expect to differentiate an OCD group from a non-OCD group. However it remains possible that the samples still differed markedly from one another thus prompting a difference in outcomes.

Aardema et al. (2009) reported that all major domains of obsessive thoughts and compulsions were represented in their sample, although it appeared that their most endorsed symptom sub-domains in their OCD group related to mental control and perfection/certainty. In the current study the most commonly reported symptom domains in the high OC group related to unacceptable thoughts and responsibility. Each study used a different instrument to evaluate OC and therefore direct comparability of the representation of symptoms within the samples is problematic. But given that OCD is a highly heterogeneous condition, if there were fundamental differences in symptom representation, it would be unwise to assume that each sample would display identical IC behaviours. Indeed, other research (Grabe et al., 1999; Rufer et al., 2006b; Watson et al., 2004) has revealed that the experience of dissociation could be most strongly linked with individuals who reported more symptoms in the checking domain, thus indicating that the predominant type of OCD may impact significantly on related phenomena. The potential for differences in the core OC characteristics between the current and original IPT sample may go some way towards explaining their notably different performances on the IPT task. Future
replication attempts would be wise to use identical measures of OC in order to reduce the ambiguity.

Finally, in line with the IBA it was predicted that an IC style of reasoning would be present only in the IPT scenario which incorporated an OCD related concern. However, due to issues with the online administration of the IPT, the threat and non-threat based scenarios were not presented in a counterbalanced fashion, thus introducing the potential for practice or fatigue effects to emerge on the non-threat based scenario. It is therefore difficult to draw firm conclusions over the participants tendency to use similar reasoning styles between the two scenarios.

**Conclusion**

In summary this study has been able to add further support to the body of evidence suggesting that OCD and dissociative traits are connected. Little research is currently available to explain why this link exists. Drawing on related literature, the current study hypothesised that dissociation may play a role in IC, a problematic reasoning style associated with OCD that is proposed to result in obsessive doubts. However, traits of dissociation could not predict susceptibility to doubt as expected thus perhaps suggesting the dissociation-OCD link does not exist through IC. Alternatively, it was proposed that this non-significant finding may have been attributable to weaknesses in the measurement of the variables in question rather than a genuine lack of relationship, particularly as the IPT did not yield the results that would be expected of an OCD sample in general. The area of dissociation and IC therefore remains a subject of interest that may benefit from further investigation.

Further exploration of if and how dissociation is implicated in IC would profit from more ‘in-action’ experiments. This would however require more
certainty around the reliability of the IPT or alternative methods to measure IC as it happens. Robust experimental design would also benefit from the ability to induce dissociation whilst individuals participate in an IC orientated task, to be certain that a dissociative state is at play at that moment. Aside from the ethical issues involved in this however, there are a number of methodological complications relating to how to induce and maintain dissociation adequately throughout a task. Leonard, Telch and Harrington (1999) asserted that research into dissociative problems has lagged behind that of anxiety and depression, and that the development of experimental provocations of dissociation would help to accelerate research in this area.

Given the numerous heterogeneous presentations of OCD and dissociation, it is reasonable to surmise that the two may interplay in a number of different ways, through IC being just one possibility. As the area of dissociation and OCD is relatively under investigated, even non-significant results might be viewed as useful as they serve to exclude and narrow down possibilities in a widely unexplained area. It is important for research to continue to pursue an empirically-based and theoretically sound explanation of the dissociation-OCD relationship. Clinicians frequently report dissociation as a significant feature in their clients with OCD, yet there is no guidance on how to formulate and address these difficulties. Related to this, it has also been reported that individuals with higher levels of dissociation do less well in their therapy for OCD (Rufer et al., 2006a). Thus further research is both justified and desirable.
References


Frischholz, E.J., Braun, B.C., Sachs, R.C., Hopkins, L., Schaeffer, D.M. Lewis, J.,
Experiences Scale: Further replication and validation. *Dissociation, 3*(3), 151-
153.

manuscript, University of Iowa.

anxiety stress scales (DASS-21): Construct validity and normative data in a
large non-clinical sample. *British Journal of Clinical Psychology, 44*(2), 227-
239. doi:10.1348/014466505X29657

Holmes, E. A., Brown, R. J., Mansell, W., Fearon, R. P., Hunter, E. C. M.,
forms of dissociation? A review and some clinical implications. *Clinical

Krüger, C., & Mace, C. J. (2002). Psychometric validation of the state scale of
dissociation (SSD). *Psychology and Psychotherapy: Theory, Research and
Practice, 75*(1), 33-51. doi:10.1348/147608302169535


PSYCHD CLINICAL PSYCHOLOGY

Major Research Project: Empirical Paper Appendices
## List of Appendices

<table>
<thead>
<tr>
<th>Appendix Number</th>
<th>Description</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Recruitment advert</td>
<td>55</td>
</tr>
<tr>
<td>2</td>
<td>Inference Process Task</td>
<td>58</td>
</tr>
<tr>
<td>3</td>
<td>Dimensional Obsessive Compulsive Scale</td>
<td>63</td>
</tr>
<tr>
<td>4</td>
<td>Dissociative Experiences Scale 2(^{nd}) Edition</td>
<td>72</td>
</tr>
<tr>
<td>5</td>
<td>Dissociative Processes Scale</td>
<td>77</td>
</tr>
<tr>
<td>6</td>
<td>Depression Anxiety Stress Scale</td>
<td>80</td>
</tr>
<tr>
<td>7</td>
<td>Ethics committee letter</td>
<td>83</td>
</tr>
<tr>
<td>8</td>
<td>Participant introductory information</td>
<td>85</td>
</tr>
<tr>
<td>9</td>
<td>Request for demographic data</td>
<td>90</td>
</tr>
<tr>
<td>10</td>
<td>Participant debrief information</td>
<td>93</td>
</tr>
<tr>
<td>11</td>
<td>Participant help page information</td>
<td>95</td>
</tr>
<tr>
<td>12</td>
<td>Data distributions</td>
<td>97</td>
</tr>
</tbody>
</table>
Appendix 1 (MRP)

Recruitment Adverts

(i) placed with an online OCD charity

(ii) placed with employers
Can you help with some research?

Dissociation and OCD – Does dissociation play a role in forming obsessions and doubts?

My name is Kerry Morrison and I am a Trainee Clinical Psychologist studying at the University of Surrey. I would like to ask for your help with a piece of research I am carrying out. This research is about people with obsessions and compulsions and their experience of dissociation (dissociation is when the mind performs lots of tasks but does not join all this information together).

This is an online task and will take approximately 30 minutes. It involves reading two scenarios and making some decisions about them. There will also be 4 questionnaires to complete. The task is carried out via a secure online system and your answers will be anonymous.

This study has been given a favourable ethical opinion from the Faculty of Arts and Human Sciences Ethics Committee at the University of Surrey.

You can take part if:
- You are over 18 years old
- Your main problem is obsessions and/or compulsions
- You can spare 30 minutes to take part

Please follow the link below to find out more and to get started.

http://surveys.fahs.surrey.ac.uk/obsessive-compulsiveness_and_dissociation
Can you help with some research into OCD (obsessive-compulsive disorder)?

Dissociation and OCD – Does dissociation play a role in forming obsessions and doubts?

My name is Kerry Morrison and I am a Trainee Clinical Psychologist studying at the University of Surrey. I would like to ask for your help with a piece of research I am carrying out. This research is about people with obsessions and compulsions and their experience of dissociation (dissociation is when the mind performs lots of tasks but does not join all this information together).

I am asking both people with and without OCD to take part. This is because it is helpful to understand how both groups of people might be similar and different. This is an online task and will take approximately 30 minutes. It involves reading two scenarios and making some decisions about them. There will also be 4 questionnaires to complete. The task is carried out via a secure online system and your answers will be anonymous.

You can take part if:
- You are over 18 years old
- You can spare 30 minutes to take part

Please follow the link below to find out more and to get started.

http://surveys.fahs.surrey.ac.uk/obsessive-compulsiveness_and_dissociation
Appendix 2 (MRP)

Inference Process Task (Aardema et al., 2009)
You will now be presented with two scenarios and you will be asked to rate the probability of the event occurring in each scenario. Six new pieces of information will then be shown after each scenario and you will be asked to rate the probability of the event occurring in response to this new information.

Scenario A
Please imagine you are in this situation

You are driving to work in your car. Before you left home you were listening to the local news on the radio. The reporter was describing an accident where a van driver unknowingly drove over someone, and left the scene of the accident without realising. You wonder how it is possible that someone could not notice this while driving. As you drive along, you come to a pedestrian crossing that is controlled by traffic lights. The light is red so you stop and wait. This particular junction is quite busy, with a lot of people on the pavement waiting to cross the road. You notice a group of schoolchildren, boys and girls, chasing each other, running on and off the pavement. As the light turns green you start to accelerate. Then, just as you pass through the traffic lights you hear a scream and feel a bump.

How anxious would you feel in the above situation? Please enter a number in the box between 0 and 100 where 0 is 'not anxious at all' and 100 is 'the most anxious I could feel'.

What do you consider to be the probability that an accident has happened under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

You will now be presented with six pieces of new information and you will be asked to rate the probability of the event occurring in response to this new information.

You look in the rear-view mirror and see a pothole in the road.

What do you consider to be the probability that an accident has happened under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

The pothole may not have been deep enough to cause the bump.

What do you consider to be the probability that an accident has happened under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

You turn your head and see no one lying on the street.

What do you consider to be the probability that an accident has happened under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

Kerry Morrison
You may not have seen everything, because it’s quite crowded.

What do you consider to be the probability that an accident has happened under these circumstances? Please enter a number in the box between 10 and 100 where 10 is improbable' and 100 is 'certain'.

You watch the expressions on people’s faces and see no emotion that might indicate an accident.

What do you consider to be the probability that an accident has happened under these circumstances? Please enter a number in the box between 10 and 100 where 10 is improbable' and 100 is 'certain'.

The lack of expression in people’s faces may have been shock.

What do you consider to be the probability that an accident has happened under these circumstances? Please enter a number in the box between 10 and 100 where 10 is improbable' and 100 is 'certain'.
Scenario B
Please imagine you are in this situation

You are on your way to a restaurant for an evening out with your friends. You have decided to take the bus to save some money even though the possibility of a bus strike was announced on the news yesterday. Once you arrive at the bus stop you wait for 20 minutes with several people standing beside you and still no bus has arrived. Then you overhear something about “a strike”. Soon afterwards most of the people around you disappear.

How anxious would you feel in the above situation? Please enter a number in the box between 0 and 100 where 0 is 'not anxious at all' and 100 is 'the most anxious I could feel'.

What do you consider to be the probability that there is a bus strike under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

You will now be presented with six pieces of new information and you will be asked to rate the probability of the event occurring in response to this new information.

At the end of the street you see a bus driving on what appears to be a different route.

What do you consider to be the probability that there is a bus strike under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

Maybe the bus was out of service since you could not see whether there were any people in it.

What do you consider to be the probability that there is a bus strike under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

A person tells you he took the bus earlier in the day.

What do you consider to be the probability that there is a bus strike under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

The strike may have only started later in the day.

What do you consider to be the probability that there is a bus strike under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.
You call the information service and get an automated message with no mention of any strike.

What do you consider to be the probability that there is a bus strike under these circumstances? Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

Maybe the bus company doesn't give out this type of information that quickly. What do you consider to be the probability that there is a bus strike under these circumstances?

Please enter a number in the box between 10 and 100 where 10 is 'improbable' and 100 is 'certain'.

Appendix 3 (MRP)

Dimensional Obsessive-Compulsive Scale (Abramowitz et al., 2010)
This questionnaire asks you about 4 different types of concerns that you might or might not experience. For each type there is a description of the kinds of thoughts (sometimes called obsessions) and behaviors (sometimes called rituals or compulsions) that are typical of that particular concern, followed by 5 questions about your experiences with these thoughts and behaviors. Please read each description carefully and answer the questions for each category based on your experiences in the last month.

**Category 1: Concerns about Germs and Contamination**

*Examples...*

- Thoughts or feelings that you are contaminated because you came into contact with (or were nearby) a certain object or person.
- The feeling of being contaminated because you were in a certain place (such as a bathroom).
- Thoughts about germs, sickness, or the possibility of spreading contamination.
- Washing your hands, using hand sanitizer gels, showering, changing your clothes, or leaning objects because of concerns about contamination.
- Following a certain routine (e.g., in the bathroom, getting dressed) because of contamination.
- Avoiding certain people, objects, or places because of contamination.

The next questions ask about your experiences with thoughts and behaviors related to contamination over the last month. Keep in mind that your experiences might be different than the examples listed above. Please circle the number next to your answer:
1. About how much time have you spent each day thinking about contamination and engaging in washing or cleaning behaviors because of contamination?

0 None at all  
1 Less than 1 hour each day  
2 Between 1 and 3 hours each day  
3 Between 3 and 8 hours each day  
4 8 hours or more each day

2. To what extent have you avoided situations in order to prevent concerns with contamination or having to spend time washing, cleaning, or showering?

0 None at all  
1 A little avoidance  
2 A moderate amount of avoidance  
3 A great deal of avoidance  
4 Extreme avoidance of nearly all things

3. If you had thoughts about contamination but could not wash, clean, or shower (or otherwise remove the contamination), how distressed or anxious did you become?

0 Not at all distressed/anxious  
1 Mildly distressed/anxious  
2 Moderately distressed/anxious  
3 Severely distressed/anxious  
4 Extremely distressed/anxious

4. To what extent has your daily routine (work, school, self-care, social life) been disrupted by contamination concerns and excessive washing, showering, cleaning, or avoidance behaviors?

0 No disruption at all.  
1 A little disruption, but I mostly function well.  
2 Many things are disrupted, but I can still manage.  
3 My life is disrupted in many ways and I have trouble managing.  
4 My life is completely disrupted and I cannot function at all.

5. How difficult is it for you to disregard thoughts about contamination and refrain from behaviors such as washing, showering, cleaning, and other decontamination routines when you try to do so?

0 Not at all difficult  
1 A little difficult  
2 Moderately difficult  
3 Very difficult  
4 Extremely difficult
**Category 2: Concerns about being Responsible for Harm, Injury, or Bad Luck**

*Examples . . .*

- A doubt that you might have made a mistake that could cause something awful or harmful to happen.
- The thought that a terrible accident, disaster, injury, or other bad luck might have occurred and you weren’t careful enough to prevent it.
- The thought that you could prevent harm or bad luck by doing things in a certain way, counting to certain numbers, or by avoiding certain “bad” numbers or words.
- Thought of losing something important that you are unlikely to lose (e.g., wallet, identify theft, papers).
- Checking things such as locks, switches, your wallet, etc. more often than is necessary.
- Repeatedly asking or checking for reassurance that something bad did not (or will not) happen.
- Mentally reviewing past events to make sure you didn’t do anything wrong.
- The need to follow a special routine because it will prevent harm or disasters from occurring.
- The need to count to certain numbers, or avoid certain bad numbers, due to the fear of harm.

The next questions ask about your experiences with thoughts and behaviors related to harm and disasters over the last month. Keep in mind that your experiences might be slightly different than the examples listed above. Please circle the number next to your answer:
1. About how much time have you spent each day thinking about the possibility of harm or disasters and engaging in checking or efforts to get reassurance that such things do not (or did not) occur?

0 None at all  
1 Less than 1 hour each day  
2 Between 1 and 3 hours each day  
3 Between 3 and 8 hours each day  
4 8 hours or more each day  

2. To what extent have you avoided situations so that you did not have to check for danger or worry about possible harm or disasters?

0 None at all  
1 A little avoidance  
2 A moderate amount of avoidance  
3 A great deal of avoidance  
4 Extreme avoidance of nearly all things  

3. When you think about the possibility of harm or disasters, or if you cannot check or get reassurance about these things, how distressed or anxious did you become?

0 Not at all distressed/anxious  
1 Mildly distressed/anxious  
2 Moderately distressed/anxious  
3 Severely distressed/anxious  
4 Extremely distressed/anxious  

4. To what extent has your daily routine (work, school, self-care, social life) been disrupted by thoughts about harm or disasters and excessive checking or asking for reassurance?

0 No disruption at all.  
1 A little disruption, but I mostly function well.  
2 Many things are disrupted, but I can still manage.  
3 My life is disrupted in many ways and I have trouble managing.  
4 My life is completely disrupted and I cannot function at all.  

5. How difficult is it for you to disregard thoughts about possible harm or disasters and refrain from checking or reassurance-seeking behaviors when you try to do so?

0 Not at all difficult  
1 A little difficult  
2 Moderately difficult  
3 Very difficult  
4 Extremely difficult
Category 3: Unacceptable Thoughts

Examples . . .
- Unpleasant thoughts about sex, immorality, or violence that come to mind against your will.
- Thoughts about doing awful, improper, or embarrassing things that you don’t really want to do.
- Repeating an action or following a special routine because of a bad thought.
- Mentally performing an action or saying prayers to get rid of an unwanted or unpleasant thought.
- Avoidance of certain people, places, situations or other triggers of unwanted or unpleasant thoughts.

The next questions ask about your experiences with unwanted thoughts that come to mind against your will and behaviors designed to deal with these kinds of thoughts over the last month. Keep in mind that your experiences might be slightly different than the examples listed above. Please circle the number next to your answer:
1. About how much time have you spent each day with unwanted unpleasant thoughts and with behavioral or mental actions to deal with them?

0 None at all
1 Less than 1 hour each day
2 Between 1 and 3 hours each day
3 Between 3 and 8 hours each day
4 8 hours or more each day

2. To what extent have you been avoiding situations, places, objects and other reminders (e.g., numbers, people) that trigger unwanted or unpleasant thoughts?

0 None at all
1 A little avoidance
2 A moderate amount of avoidance
3 A great deal of avoidance
4 Extreme avoidance of nearly all things

3. When unwanted or unpleasant thoughts come to mind against your will how distressed or anxious did you become?

0 Not at all distressed/anxious
1 Mildly distressed/anxious
2 Moderately distressed/anxious
3 Severely distressed/anxious
4 Extremely distressed/anxious

4. To what extent has your daily routine (work, school, self-care, social life) been disrupted by unwanted and unpleasant thoughts and efforts to avoid or deal with such thoughts?

0 No disruption at all.
1 A little disruption, but I mostly function well.
2 Many things are disrupted, but I can still manage.
3 My life is disrupted in many ways and I have trouble managing.
4 My life is completely disrupted and I cannot function at all.

5. How difficult is it for you to disregard unwanted or unpleasant thoughts and refrain from using behavioral or mental acts to deal with them when you try to do so?

0 Not at all difficult
1 A little difficult
2 Moderately difficult
3 Very difficult
4 Extremely difficult
Category 4: Concerns about Symmetry, Completeness, and the Need for Things to be “Just Right”

Examples . . .
- The need for symmetry, evenness, balance, or exactness.
- Feelings that something isn’t “just right.”
- Repeating a routine action until it feels “just right” or “balanced.”
- Counting senseless things (e.g., ceiling tiles, words in a sentence).
- Unnecessarily arranging things in “order.”
- Having to say something over and over in the same way until it feels “just right.”

The next questions ask about your experiences with feelings that something is not “just right” and behaviors designed to achieve order, symmetry, or balance over the last month. Keep in mind that your experiences might be slightly different than the examples listed above. Please circle the number next to your answer:
1. About how much time have you spent each day with unwanted thoughts about symmetry, order, or balance and with behaviors intended to achieve symmetry, order or balance?

0 None at all
1 Less than 1 hour each day
2 Between 1 and 3 hours each day
3 Between 3 and 8 hours each day
4 8 hours or more each day

2. To what extent have you been avoiding situations, places or objects associated with feelings that something is not symmetrical or “just right?”

0 None at all
1 A little avoidance
2 A moderate amount of avoidance
3 A great deal of avoidance
4 Extreme avoidance of nearly all things

3. When you have the feeling of something being “not just right,” how distressed or anxious did you become?

0 Not at all distressed/anxious
1 Mildly distressed/anxious
2 Moderately distressed/anxious
3 Severely distressed/anxious
4 Extremely distressed/anxious

4. To what extent has your daily routine (work, school, self-care, social life) been disrupted by the feeling of things being “not just right,” and efforts to put things in order or make them feel right?

0 No disruption at all.
1 A little disruption, but I mostly function well.
2 Many things are disrupted, but I can still manage.
3 My life is disrupted in many ways and I have trouble managing.
4 My life is completely disrupted and I cannot function at all.

5. How difficult is it for you to disregard thoughts about the lack of symmetry and order, and refrain from urges to arrange things in order or repeat certain behaviors when you try to do so?

0 Not at all difficult
1 A little difficult
2 Moderately difficult
3 Very difficult
4 Extremely difficult
Appendix 4 (MRP)

Dissociative Experiences Scale 2nd Edition (Carlson & Putnam, 1993)
This questionnaire consists of 28 questions about experiences you have had in your daily life. We are interested in how often you have had these experiences. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs. To answer the questions, please determine to what degree the experience described in the question applies to you, and use the slider to indicate the appropriate number to show what percentage of the time you have had the experience (click on each scale for the slider to appear).

1. Some people have the experience of driving or riding in a car or bus or train and suddenly realising that they don’t remember what has happened during all or part of the trip.
   Never-----------------------------------------------Always
   0% 100%

2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was just said.
   Never-----------------------------------------------Always
   0% 100%

3. Some people have the experience of finding themselves in a place and having no idea how they got there.
   Never-----------------------------------------------Always
   0% 100%

4. Some people have the experience of finding themselves dressed in clothes that they don’t remember putting on.
   Never-----------------------------------------------Always
   0% 100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying.
   Never-----------------------------------------------Always
   0% 100%

6. Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before.
   Never-----------------------------------------------Always
   0% 100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something, and they actually see themselves as though they were looking at another person.
   Never-----------------------------------------------Always
   0% 100%
8. Some people are told that they sometimes do not recognize friends or family members.

Never-----------------------------------------------Always
0% 100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation).

Never-----------------------------------------------Always
0% 100%

10. Some people have the experience of being accused of lying when they do not think that they have lied.

Never-----------------------------------------------Always
0% 100%

11. Some people have the experience of looking in a mirror and not recognizing themselves.

Never-----------------------------------------------Always
0% 100%

12. Some people sometimes have the experience of feeling that other people, objects, and the world around them are not real.

Never-----------------------------------------------Always
0% 100%

13. Some people sometimes have the experience of feeling that their body does not seem to belong to them.

Never-----------------------------------------------Always
0% 100%

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event.

Never-----------------------------------------------Always
0% 100%

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them.

Never-----------------------------------------------Always
0% 100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar.

Never-----------------------------------------------Always
0% 100%
17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them.
Never-----------------------------------------------Always
0% 100%

18. Some people sometimes find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them.
Never-----------------------------------------------Always
0% 100%

19. Some people find that they sometimes are able to ignore pain.
Never-----------------------------------------------Always
0% 100%

20. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time.
Never-----------------------------------------------Always
0% 100%

21. Some people sometimes find that when they are alone they talk out loud to themselves.
Never-----------------------------------------------Always
0% 100%

22. Some people find that in one situation they may act so differently compared to another situation that they feel almost as if they were two different people.
Never-----------------------------------------------Always
0% 100%

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.).
Never-----------------------------------------------Always
0% 100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it).
Never-----------------------------------------------Always
0% 100%

25. Some people sometimes find evidence that they have done things that they do not remember doing.
Never-----------------------------------------------Always
0% 100%
26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing.
Never--------------------------------------------------------------------------------Always
0% 100%

27. Some people sometimes find that they hear voices inside their head which tell them to do things or comment on things that they are doing.
Never--------------------------------------------------------------------------------Always
0% 100%

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear.
Never--------------------------------------------------------------------------------Always
0% 100%
Appendix 5 (MRP)

Dissociative Processes Scale (Harrison & Watson, 1992)
This questionnaire contains a series of statements. Read each statement carefully, then mark the appropriate response in the space in front of that item. Use the following scale to record your responses:

1 = strongly disagree; the statement is definitely false
2 = disagree; the statement is mostly false
3 = neutral or cannot decide; the statement is about equally true and false
4 = agree; the statement is mostly true
5 = strongly agree; the statement is definitely true

1. I like to fantasize about doing interesting and exciting things.

2. At times I have gone into a trance-like state in which I was unaware of what was happening around me.

3. There are certain events or blocks of time for which I have no memory.

4. I have felt as if I were in a dream, when I was actually wide awake.

5. I have such a vivid imagination that I really could "become" someone else for a few minutes.

6. I sometimes feel somewhat distant from my own thoughts and actions.

7. At times people have told me that I seemed to be off in a world of my own.

8. I will sometimes walk into a room, and not remember why I went in there.

9. Sometimes the things around me do not seem quite real.

10. I sometimes will be driving a car, and later realize that I don’t remember part of the trip.

11. I have an interesting fantasy life.

12. I sometimes “step outside” of my usual self and experience a different state of consciousness.

13. If I want to, I can imagine some things so vividly that they hold my attention like a good movie or book does.

14. Sometimes when I am looking in the mirror I feel like I am seeing someone else.

15. I daydream a lot.
16. When I am doing a routine task, I sometimes can wander off into my own thoughts and actually forget that I am doing it, only to find a few minutes later that I have completed it.

17. At times I have felt disconnected from my body.

18. I often have been unsure if I have actually done something, or simply thought about doing it.

19. I often put things down without thinking, so that later on I have no idea of where I put them.

20. I have often been told that I did or said something that I don't remember doing or saying.

21. I have a very active imagination.

22. I can get so involved in a movie that I'm unaware of what is happening around me.

23. I sometimes find myself staring off into space without thinking about anything.

24. I have had blank spells or periods of missing time (that were not caused by alcohol or drugs).

25. I can get so caught up in music that I don't notice anything else.

26. I often seem to do things without really paying attention to what I am doing.

27. Sometimes I feel like I am someone else.

28. At times I cannot remember whether or not I did something that I intended to do.

29. Sometimes I can get so absorbed in a daydream or fantasy that it seems real to me.

30. There have been occasions when I felt I was outside of my body.

31. I have been uncertain about whether something actually happened, or whether I only dreamed it.

32. Sometimes when someone is talking to me, although I can hear their voice, I find that I haven't really listened to what they are saying.

33. I sometimes feel as if I were more than one person.
Appendix 6 (MRP)

Depression Anxiety Stress Scale 21 (Lovibond and Lovibond, 1995)
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

*The rating scale is as follows:*

0  Did not apply to me at all  
1  Applied to me to some degree, or some of the time  
2  Applied to me to a considerable degree, or a good part of time  
3  Applied to me very much, or most of the time

1  I found it hard to wind down  
2  I was aware of dryness of my mouth  
3  I couldn’t seem to experience any positive feeling at all  
4  I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)  
5  I found it difficult to work up the initiative to do things  
6  I tended to over-react to situations  
7  I experienced trembling (eg, in the hands)  
8  I felt that I was using a lot of nervous energy  
9  I was worried about situations in which I might panic and make a fool of myself  
10  I felt that I had nothing to look forward to  
11  I found myself getting agitated  
12  I found it difficult to relax  
13  I felt down-hearted and blue  
14  I was intolerant of anything that kept me from getting on with what I was doing  
15  I felt I was close to panic  
16  I was unable to become enthusiastic about anything  
17  I felt I wasn’t worth much as a person  
18  I felt that I was rather touchy  
19  I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)
<table>
<thead>
<tr>
<th>Line</th>
<th>Text</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td>0 1 2 3</td>
</tr>
</tbody>
</table>
Appendix 7 (MRP)

Ethics Committee Letter
Dear Kerry

Reference: 834-PSY-12
Title of Project: The Relationship between Dissociation, Susceptibility to Doubt and Obsessive-Compulsiveness

Thank you for your submission of the above proposal.

The Faculty of Arts and Human Sciences Ethics Committee has now given a favourable ethical opinion.

If there are any significant changes to your proposal which require further scrutiny, please contact the Faculty Ethics Committee before proceeding with your Project.

Yours sincerely

Professor Bertram Opitz
Chair

Kerry Morrison
Trainee Clinical Psychologist
School of Psychology
University of Surrey
Appendix 8 (MRP)

Participant Introductory Information, Rights and Consent
Information for people taking part
My name is Kerry Morrison* and I am carrying out a piece of research at the University of Surrey into obsessive-compulsiveness and dissociation. Thank you for taking an interest.
I would first like to tell you a bit about why I am carrying out this research and what it involves, so that you can make an informed choice about whether to take part. If you have any questions about the research project, please contact myself or my supervisor:

Kerry Morrison (Trainee Clinical Psychologist)
Department of Psychology
University of Surrey
Guildford
GU2 7HX
EMAIL: k.morrison@surrey.ac.uk

Dr Laura Simonds (Supervisor)
Department of Psychology
University of Surrey
Guildford
GU2 7HX
EMAIL: l.simonds@surrey.ac.uk

* I am a Trainee Clinical Psychologist at the University of Surrey. My training involves working with people who have mental health problems, studying at the University and carrying out research. My background includes working in primary and secondary care mental health services and also in specialist schools over the last 9 years.

What is this research about?
Lots of people have obsessions (upsetting repetitive thoughts or images) and compulsions (behaviour aimed to reduce the fear). Mostly these do not cause them any problems, but if obsessions and compulsions become more severe they can be distressing and disrupt everyday life.

Research suggests that a mental state called dissociation might play a role in how obsessions are formed, and my research aims to investigate this idea further. When people dissociate, their mind continues to perform all of its regular tasks, such as noticing and remembering what you are doing, but these tasks do not all join up together like they usually would. This state is normally only temporary. Again, dissociation is a normal experience, for example when daydreaming or driving on ‘autopilot’. Dissociation is only a problem when it becomes extreme.

Once completed, my research may be able to help more treatments to be developed for people who are distressed by their obsessions and compulsions.
What will I be asked to do if I take part?

- You will be asked to give some basic demographic information, such as your age and level of education.
- You will be asked to imagine yourself in two different situations, and then make some decisions and judgements about them.
- You will be asked some questions about your personal experience of obsessions, compulsions, dissociation and about your mood.

It should take around 30 minutes to complete.

(Please note: one of the situations you will be asked to imagine relates to a traffic accident. If you believe that imagining yourself in this situation could be upsetting, please do not take part in the study).

What are the benefits of taking part and are there any risks?

By taking part you will be helping psychologists to understand more about obsessions and compulsions. Changes to the health service and therapies are based on research, so whilst it is unlikely that you will gain any direct benefit from taking part, your contribution is important and may influence better treatments to be developed in the future.

You will be asked to answer a number of questions about yourself, and you may find this makes you think about difficulties that you had not noticed before. Also, to think about the two situations as already mentioned, could potentially be upsetting. If you become upset or worried at any point, you should stop. Sources of advice can be found by clicking on the relevant link on each page.

What will happen to the information I give?

The information you give will be recorded and stored as part of the secure online questionnaire system. It will then be transferred to a database stored at the University of Surrey, so that I can analyse it. All data will be stored on a password protected computer system and will be accessed by myself and my supervisor.

The demographic information that you give will help me understand the types of people who have taken part. However you will not be asked for any details that would identify who you are – e.g. your name or where you live. This means your answers will stay anonymous and I will not be able to find out who has taken part.

When I have analysed all of the questionnaires and the task, I plan to write-up this research and share it with other clinicians and researchers by publishing or presenting the findings. I will also send a summary of the research findings to any participant who requests a copy (if you would like to receive a summary, please email me at k.morrison@surrey.ac.uk).

This research study has been checked by the Faculty of Arts & Human Sciences Ethics Committee at the University of Surrey, to make sure I have properly thought through the study and have considered the wellbeing of those taking part. They have given this research a favourable ethical opinion.
What happens next?
The next screen will ask you to confirm that you have read and understood your rights as a participant in this research, and that you are happy to take part. If you no longer wish to take part, please close the webpage.

If you have any questions or concerns that you would like answered before you take part please contact either myself or my supervisor:

Kerry Morrison (Trainee Clinical Psychologist)
Department of Psychology
University of Surrey
Guildford
GU2 7HX
EMAIL: k.morrison@surrey.ac.uk

Dr Laura Simonds ( Supervisor)
Department of Psychology
University of Surrey
Guildford
GU2 7HX
EMAIL: l.simon@surrey.ac.uk
Consent Form
Please think carefully about the information you have read so far and think about whether you wish to take part in this research.

If I agree to take part, I understand my rights are as follows:
- My participation is entirely voluntary, I do not have to take part.
- I have had the opportunity to contact the researcher to ask questions before taking part.
- I may stop taking part at any point by closing the web browser.
- All information will be given anonymously and will be stored in the strictest confidence, and in accordance with the Data Protection Act 1998.
- I am aware that I cannot withdraw any information that I give as part of this research, as the researcher will not be able to individually identify my contribution.
- I am able to receive a summary of the results by emailing the researcher. These will be sent once the research project is complete. However, I will not get individual feedback on taking part.

I confirm that:
- I have read and understood the information given to me about this research study, including why it is being carried out, what it will involve, benefits and risks, and ways that I can find out more if I have any concerns or worries.
- I have been given the opportunity to ask the researcher questions. If I have asked questions they have been answered well.
- It is okay to analyse the information that I give even if I have missed questions out or stopped before getting to the end of the online tasks.

Do you give your consent, and therefore wish to continue?
Yes
No
Appendix 9 (MRP)

Request for Demographic Data
Please tell us about you.....

I would like to ask some basic information about you so that I know what groups of people have taken part. I do not need to know any information that will mean I can identify who you are.

You do not have to answer these questions and may leave them blank if you wish.

What gender are you?
  Female
  Male

How old are you?
  __ years old

What is your highest level of educational qualification?
  No formal qualifications
  GCSEs/O-Levels/NVQ/Equivalent
  A-Levels/Equivalent
  Diploma (HND, SRN, etc.)
  Degree (BSc, BA etc.)
  Postgraduate degree/diploma

What is your employment status?
  Employed full time
  Employed part time
  Student
  Retired
  Unemployed
  Other

How would you describe your ethnic origin?
  White British
  White Irish
  Any other White background
  White and Black Caribbean
  White and Black African
  White and Asian
  Any other Mixed background
  Caribbean
  African
  Any other Black background
  Indian
  Pakistani
  Bangladeshi
  Any other Asian background
  Chinese
  Any other background
Have you ever received a diagnosis or seen a health professional due to any of the following difficulties? (Please tick all that apply)
  - Depression
  - Social Anxiety
  - Post Traumatic Stress Disorder (PTSD)
  - Panic Disorder
  - Phobia
  - Generalised Anxiety Disorder
  - Obsessive Compulsive Disorder (OCD)
  - Other (please specify):

How did you hear about taking part in this research study?
  - Advert on an OCD organisation website
  - Recommended by someone I know
  - Email or advert from work
  - Email or advert from a community/hobby group
  - Other (please specify)
Appendix 10 (MRP)

Participant Debrief Information
You have finished!

Thank you for taking part in this research study. Before you go I would like to give you a few extra details about the tasks you have just completed.

You were asked to imagine some situations in which an event may or may not have happened. Then you rated the probability of this event having occurred after being given new pieces of information. Research has suggested that a similar process of weighing up different types of information might contribute to obsessions being formed. Generally, people with strong obsessions and compulsions tend to be more distrustful of what they see and hear, and are more easily influenced by possibilities that they imagine. So for example:

“You watch the expressions on people’s faces and see no emotion that might indicate an accident” is real information about what has actually been seen.

“The lack of expression in people’s faces may have been shock” – is an explanation that someone imagines might be the case.

People who rely more on their imagination also tend to doubt their situation more, which may result in them developing obsessions.

One theory I am testing out is that people who regularly experience dissociation are more likely to become absorbed into their imagination, and might therefore be more susceptible to obsessive doubts. Some of the questions you answered were about dissociation in everyday life.

The information that all participants give in this study will now be analysed. I hope to then share the results with other clinicians and researchers so that it might contribute to the development of treatments for OCD in the future.

I am due to finish this project in the summer of 2014. If you would like me to send you a summary of the findings, please email me at k.morrison@surrey.ac.uk

If you know of anyone who may also be interested in taking part in this research study, please forward them the online link from the advert.

Thank you again for your time and help.
Appendix 11 (MRP)

Participant ‘Help’ Page Information
Advice and support for participants

Your well-being is of upmost importance. I am very grateful for your help with this study and hope that it has not caused you any distress.

It is normal for people in the general population to experience some mild obsessions, compulsions, and also dissociation. Most people are not too bothered by these and do not need to seek help.

However, if you experience any of the problems mentioned in the questionnaires and feel distressed by how they are affecting your life (and are not already receiving support), you can approach any of the following for information and advice:

- Your GP (family doctor).
- The national charity OCD-UK www.ocduk.org
- The national charity OCD Action www.ocdaction.org.uk

If you already have a diagnosis of OCD and feel distressed by anything that has been mentioned as part of this research, you can ask for support from the following:

- Your GP (family doctor).
- Any therapist or any other mental health professional you are working with.
- Any family or friends who you can usually rely upon.
- The national charity OCD-UK www.ocduk.org
- The national charity OCD Action www.ocdaction.org.uk

If you have any concerns about the ethics of this study or wish to complain, you may contact my supervisor:

Dr Laura Simonds (Supervisor)
Department of Psychology
University of Surrey
Guildford
GU2 7HX
EMAIL: l.simonds@surrey.ac.uk
Phone: 01483 686936

If you have exited the online study and have decided not to continue, you may wish to read about what the research is trying to explore before leaving the webpage (the same information is also available at the end of the study if you choose to continue). Please click here if you would like to read more.
Appendix 12 (MRP)

Distribution of data and justification of main analytic strategies
Distribution of data relevant to hypothesis 1

Non-significant results on the Kolmogorov-Smirnov Z test and the histograms indicate that in the threat condition (scenario A), the distribution of both types of cumulative doubt scores were normally distributed within the low OC group. This therefore supports a parametric analysis.

<table>
<thead>
<tr>
<th>One-Sample Kolmogorov-Smirnov Test</th>
<th>Inference Process Task</th>
<th>Inference Process Task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Scenario A</td>
<td>- Scenario A</td>
</tr>
<tr>
<td></td>
<td>- Cumulative</td>
<td>- Cumulative</td>
</tr>
<tr>
<td></td>
<td>Doubt</td>
<td>Doubt</td>
</tr>
<tr>
<td></td>
<td>(Possibility)</td>
<td>(Reality)</td>
</tr>
<tr>
<td>N</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Normal Parameters^a,b</td>
<td>Mean</td>
<td>29.6667</td>
</tr>
<tr>
<td></td>
<td>Std.</td>
<td>45.00473</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td>Absolute</td>
<td>.149</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>.144</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>-.149</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.209</td>
<td>.854</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.107</td>
<td>.460</td>
</tr>
</tbody>
</table>

^a. Test distribution is Normal.
^b. Calculated from data.
Non-significant results on the Kolmogorov-Smirnov Z test and the histograms indicate that in the threat condition (scenario A), the distribution of both types of cumulative doubt scores were normally distributed within the high OC group. This therefore supports a parametric analysis.

### One-Sample Kolmogorov-Smirnov Test

<table>
<thead>
<tr>
<th>Inference Process Task</th>
<th>Inference Process Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Scenario A</td>
<td>- Scenario A</td>
</tr>
<tr>
<td>- Cumulative Doubt (Possibility)</td>
<td>- Cumulative Doubt (Reality)</td>
</tr>
<tr>
<td>N</td>
<td>48</td>
</tr>
<tr>
<td>Normal Parameters&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>48</td>
</tr>
<tr>
<td>Mean</td>
<td>36.3542</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>51.08878</td>
</tr>
<tr>
<td>Absolute Differences</td>
<td>.136</td>
</tr>
<tr>
<td>Positive</td>
<td>.088</td>
</tr>
<tr>
<td>Negative</td>
<td>-.136</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>.944</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.334</td>
</tr>
<tr>
<td></td>
<td>.890</td>
</tr>
</tbody>
</table>

<sup>a</sup> Test distribution is Normal.

<sup>b</sup> Calculated from data.
Non-significant results on the Kolmogorov-Smirnov Z test and the histograms indicate that in the non-threat condition (scenario B), the distribution of both types of cumulative doubt scores were normally distributed within the low OC group. This therefore supports a parametric analysis.

<table>
<thead>
<tr>
<th>One-Sample Kolmogorov-Smirnov Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inference Process Task</td>
</tr>
<tr>
<td>- Scenario B</td>
</tr>
<tr>
<td>- Cumulative Doubt (Possibility)</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Normal Parameters\textsuperscript{a,b}</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Most Extreme Differences</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Test distribution is Normal.
\textsuperscript{b} Calculated from data.
Histogram Showing Distribution of Cumulative Doubt (Possibility) Scores in Non-Threat Scenario - Low OC

Mean = 29.11
Std. Dev. = 20.616
N = 66

Histogram Showing Distribution of Cumulative Doubt (Reality) Scores in Non-Threat Scenario - Low OC

Mean = 58.45
Std. Dev. = 36.729
N = 66
Non-significant results on the Kolmogorov-Smirnov Z test and the histograms indicate that in the non-threat condition (scenario B), the distribution of cumulative doubt (reality) scores are normally distributed in the high OC group. However, the Kolmogorov-Smirnov Z test indicates a non-normal distribution of cumulative doubt (possibility) scores in the non-threat condition for the high OC group. Although, the related histogram does not show a substantial skew, and parametric tests are robust enough to accommodate minor violations in their assumptions of normality. Parametric testing was therefore still considered appropriate for this hypothesis.

### One-Sample Kolmogorov-Smirnov Test

<table>
<thead>
<tr>
<th></th>
<th>Inference Process Task - Scenario B</th>
<th>Inference Process Task - Scenario B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cumulative Doubt (Possibility)</td>
<td>Cumulative Doubt (Reality)</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td><strong>Normal Parameters</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>33.2292</td>
<td>-59.6250</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>42.75524</td>
<td>44.05153</td>
</tr>
<tr>
<td><strong>Most Extreme Differences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absolute</td>
<td>.226</td>
<td>.130</td>
</tr>
<tr>
<td>Positive</td>
<td>.226</td>
<td>.084</td>
</tr>
<tr>
<td>Negative</td>
<td>-.156</td>
<td>-.130</td>
</tr>
<tr>
<td><strong>Kolmogorov-Smirnov Z</strong></td>
<td>1.563</td>
<td>.903</td>
</tr>
<tr>
<td><strong>Asymp. Sig. (2-tailed)</strong></td>
<td>.015</td>
<td>.388</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.
b. Calculated from data.
Distribution of data relevant to hypothesis 2

The Kolmogorov-Smirnov Z test and histogram suggest that the DOCS scores in the full sample are non-normally distributed. Therefore a non-parametric correlation analysis (Spearman’s Rho) was selected for this analysis.

**One-Sample Kolmogorov-Smirnov Test**

<table>
<thead>
<tr>
<th></th>
<th>Dimensional Obsessive Compulsive Scale - Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>114</td>
</tr>
<tr>
<td>Normal Parameters(^{a,b})</td>
<td>Mean 18.3246</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 17.12499</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td>Absolute .157</td>
</tr>
<tr>
<td></td>
<td>Positive .157</td>
</tr>
<tr>
<td></td>
<td>Negative -.142</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.674</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td><strong>.007</strong></td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.
b. Calculated from data.
According to the Kolmogorov-Smirnov test and histograms, the DES-II absorption and Imaginative involvement and DPS imagination scores form a normal distribution in the full sample, whilst the DES-II depersonalisation and derealisation and DPS detachment scores are markedly skewed and therefore non-normally distributed. This further supports a non-parametric analysis of hypothesis 2.

**One-Sample Kolmogorov-Smirnov Test**

<table>
<thead>
<tr>
<th></th>
<th>Dissociative Experiences Scale II - Absorption and Imaginative Involvement Subscale</th>
<th>Dissociative Experiences Scale II - Depersonalisation and Derealisation Subscale</th>
<th>Dissociative Processes Scale - Imagination Subscale</th>
<th>Dissociative Processes Scale - Detachment Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
</tr>
<tr>
<td>Normal Parameters a,b</td>
<td>Mean 450.7018</td>
<td>84.0000</td>
<td>20.8684</td>
<td>11.9649</td>
</tr>
<tr>
<td></td>
<td>Std. 304.47828</td>
<td>121.90792</td>
<td>6.95563</td>
<td>6.71273</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td>Absolute .106</td>
<td>.258</td>
<td>.100</td>
<td>.205</td>
</tr>
<tr>
<td></td>
<td>Positive .106</td>
<td>.258</td>
<td>.100</td>
<td>.205</td>
</tr>
<tr>
<td></td>
<td>Negative -.081</td>
<td>-.245</td>
<td>-.068</td>
<td>-.187</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.129</td>
<td>2.755</td>
<td>1.069</td>
<td>2.190</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.156</td>
<td>.000</td>
<td>.203</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.
b. Calculated from data.
Distribution of data relevant to hypothesis 3

The Kolmogorov-Smirnov test and the histogram both suggest that cumulative doubt as a result of possibility-based information is normally distributed in the full sample.

### One-Sample Kolmogorov-Smirnov Test

<table>
<thead>
<tr>
<th>Inference Process Task - Scenario A - Cumulative Doubt (Possibility)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>114</td>
</tr>
<tr>
<td>Normal Parameters&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>32.4825</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>47.55700</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td></td>
</tr>
<tr>
<td>Absolute</td>
<td>.142</td>
</tr>
<tr>
<td>Positive</td>
<td>.111</td>
</tr>
<tr>
<td>Negative</td>
<td>-.142</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.517</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.020</td>
</tr>
</tbody>
</table>

<sup>a</sup> Test distribution is Normal.
<sup>b</sup> Calculated from data.
According to the Kolmogorov-Smirnov test and histograms, the DES-II absorption and Imaginative involvement and DPS imagination scores form a normal distribution in the full sample, whilst the DES-II depersonalisation and derealisation and DPS detachment scores are markedly skewed and therefore non-normally distributed. This prompts the use of non-parametric analysis of hypothesis 3.

<table>
<thead>
<tr>
<th></th>
<th>Dissociative Experiences Scale II - Absorption and Imaginative Involvement Subscale</th>
<th>Dissociative Experiences Scale II - Depersonalisation and Derealisation Subscale</th>
<th>Dissociative Processes Scale - Imaginatio n Subscale</th>
<th>Dissociativ e Processes Scale - Detachment Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
</tr>
<tr>
<td>Normal Parametersa,b</td>
<td>Mean 450.7018</td>
<td>84.0000</td>
<td>20.8684</td>
<td>11.9649</td>
</tr>
<tr>
<td></td>
<td>Std. 304.47828</td>
<td>121.90792</td>
<td>6.95563</td>
<td>6.71273</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td>Absolute .106</td>
<td>.258</td>
<td>.100</td>
<td>.205</td>
</tr>
<tr>
<td></td>
<td>Positive .106</td>
<td>.258</td>
<td>.100</td>
<td>.205</td>
</tr>
<tr>
<td></td>
<td>Negative -.081</td>
<td>-.245</td>
<td>-.068</td>
<td>-.187</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.129</td>
<td>2.755</td>
<td>1.069</td>
<td>2.190</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.156</td>
<td>.000</td>
<td>.203</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.
b. Calculated from data.
PSYCHD CLINICAL PSYCHOLOGY

Major Research Project: Research Proposal

The Relationship Between Dissociation, Susceptibility to Doubt and Obsessive-Compulsiveness

Word Count: 2974

*To avoid unnecessary duplication, appendices for the MRP Proposal can be found accompanying the MRP Empirical Paper.
Introduction

Background

Dissociation is defined as “a disruption in the usually integrated functions of consciousness, memory, identity, or perception.” (Diagnostic and Statistical Manual IV-TR, DSM-IV-TR, 2000, pg519). This encompasses a range of experiences from daydreaming to pathological states, and is recognised as a transdiagnostic phenomenon. Over the last two decades dissociation has increasingly been implicated in obsessive-compulsive disorder (OCD), with those experiencing OCD reporting significantly higher propensity to dissociate than non-clinical controls (Raszka, Prasko, Koprivova, Novak and Adamcova, 2009). However, the role of dissociation has yet to be located conceptually within an OCD framework, as little is known of why and when it occurs, or the impact it has.

OCD is characterised by the experience of persistent or repetitive thoughts which cause distress and prompt the performance of actions to avert the feared event or reduce anxiety (DSM-IV-TR, 2000). Currently, cognitive-behavioural theory stands as the foremost explanatory model of OCD. However, an alternative inference-based explanation has been also been proposed (O’Connor and Robillard, 1995).

The inference-based approach regards the subjective process of reasoning as being of key importance to the formation of obsessions. Obsessions are therefore conceptualised as self-generated inferences that arise from an individual’s style of reasoning (Aardema, O’Connor and Emmelkamp, 2006). This process suggests a dynamic interplay of reality-based information with possibility-based information (Aardema, O’Connor, Pélissier and Lavoie, 2009), where crucially an individual distrusts their senses and overinvests in imagination. Ultimately remote possibilities
are seen as probable even though they are inconsistent with sense-based data (Aardema and Wu, 2011). For example, “I see the cooker is switched off, but I believe it might somehow still be on”. This reasoning style has been termed inferential confusion (IC). Although cognitive-behavioural and inference-based models assume different viewpoints on the definition of obsessions, they are not incompatible. Inference-based approaches concern the genesis of obsessions, but conversely cognitive-behavioural theory centralises the beliefs that are held about them. (Wu, Aardema and O’Connor, 2009).

Empirical support has accumulated for IC through a number of questionnaire based studies, where people with OCD have consistently endorsed this reasoning style more than non-OCD groups (Aardema, O’Connor, Emmelkamp, Marchand and Todorov, 2005). Additionally, Aardema et al.’s (2009) novel reasoning experiment, The Inference Process Task (IPT), established that people with OCD were more influenced by possibility-based information than non-clinical controls, whilst reality-based information was less influential in creating doubt. This implies a differential impact of reality and possibility-based information in the reasoning processes of people with and without OCD. However, less is understood about why this difference exists.

Aardema et al. (2005) suggested an individual who is inferentially confused continues to perceive reality accurately, however this credible sense information lacks effective integration into the reasoning process, perhaps due to the extent the person is absorbed into imagination. This idea of limited integration seemingly echoes the characteristics of dissociation. Furthermore, factor analysis of the commonly used Dissociative Experiences Scale, (DES, Bernstein and Putnam, 1986) has derived a subset of symptoms relating to absorption and imaginative involvement.
(Stockdale, Gridley, Balogh and Holtgraves, 2002), thus again resonating with IC. Indeed, Aardema and Wu (2011) found the DES Absorption subscale to form a significant and unique relationship with IC traits (as measured by questionnaire). A further test of this relationship might therefore involve the correlation of dissociative tendencies with the IPT (Aardema et al., 2009), which would capture the tendency for IC ‘in action’.

Recent review indicates that dissociation is best represented under two distinct forms, compartmentalisation and detachment, rather than one continuous variable as traditionally assumed (Holmes et al., 2005). Conceptually the role of dissociative absorption in IC might be understood in parallel to the experience of flashbacks/intrusions in post-traumatic stress disorder. Ehlers and Clark (2000) proposed that sensory impressions and emotions of traumatic events are re-experienced as if the threat were ‘here and now’, due to insufficient integration with autobiographical memory. For example, a person becomes absorbed into the imminent sense of death, as sensory memories are re-experienced away from the contextual information that says a person escaped unharmed. Mental processes are therefore experienced in a dissociated (compartmentalised) way. Essentially, if a person becomes absorbed into an internally generated event (e.g. an imagined possibility that the cooker is not properly switched off) which is not integrated with contextual reality-based information, it might be experienced ‘as if real’. Also, O’Connor and Aardema (2003) suggest imaginative possibilities gain plausibility not by their content, but through a subjective narrative. Might it therefore be possible that dissociative absorption promotes the conditions for the creation of such narratives?
To date, only the absorption subtype of dissociation has been explored in relation to IC. However, Watson, Wu and Cutshall (2004) found the subtype of detachment also correlated with OCD. On this basis it might be suggested that if a person detaches from reality through dissociation, they may feel less trusting of their sensory perceptions, thus elevating the credibility of imaginative possibility. O’Connor and Aardema (2003) also reasoned that the crossover between perception and imagination in IC was likely to involve a degree of derealisation, although this has not been tested empirically.

Summary

Within the inference-based approach, obsessions are regarded as doubts that arise from a dynamic reasoning process between reality and possibility. IC is therefore a “characteristic of OCD that leads the imagination to trump the senses” (Aardema et al., 2005, p343). However, a fundamental question remains unanswered: why does an individual disbelieve what they perceive, and possibility take on the feeling of reality? The proposed study intends to employ further replication of the IPT (Aardema et al., 2009) thus consolidating ‘in action’ evidence for IC. Also, it aims to explore whether a tendency to dissociate plays a role in susceptibility to the impact of imaginative possibilities in the formation of doubt. It is suggested that the findings will be of clinical relevance, as both IC and dissociation have been associated with the efficacy of OCD therapies (Aardema et al., 2005; Rufer et al. 2006).
Research Question

Is the tendency to dissociate related to the impact of imaginative possibility-based information and therefore the formation of obsessional doubts?

Main Hypotheses

(1) Individuals who are high in obsessive-compulsiveness will show significantly more doubt as a result of possibility-based information than people who are low in obsessive-compulsiveness. This difference will only exist in a scenario where there is inferred risk of harm to self or others.

(2) Dissociative absorption and derealisation will be positively correlated with obsessive-compulsiveness.

(3) Dissociative absorption and derealisation will predict variance in the impact of possibility-based information on doubt.

Method

Participants

A priori analysis suggests 96 participants will be required to ensure all methods of analysis are sufficiently powered (G*Power, Faul, Erdfelder, Lang and Buchner, 2007).
<table>
<thead>
<tr>
<th>Test</th>
<th>Effect size</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANOVA:</td>
<td>f = 0.25</td>
<td>96</td>
</tr>
<tr>
<td>repeated measures-</td>
<td>(based on Aardema et al.,</td>
<td></td>
</tr>
<tr>
<td>between factors</td>
<td>2009, partial eta squared = 0.06)</td>
<td></td>
</tr>
<tr>
<td>Parameters:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>alpha at 0.05,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>power at 80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bivariate correlation</td>
<td>Medium</td>
<td>84</td>
</tr>
<tr>
<td>Multiple Regression</td>
<td>Medium</td>
<td>77</td>
</tr>
</tbody>
</table>

Obsessive-compulsiveness exists on a continuum in the general population (Aardema and Wu, 2011). As the current study is interested in differences concerning the severity of obsessive-compulsiveness, participants will be recruited from the general population alongside people identifying with an OCD diagnosis, thus increasing variability in the sample.

Recruitment is proposed from:

- OCD-UK and OCD Action are national charities who regularly advertise research opportunities via their websites. Although these organisations are yet to be approached, other researchers within the department have been authorised to advertise and have achieved good response rates.
- Local authority offices or other large organisations who are likely to employ people representing a broad age and education demographic. Again, negotiations to advertise through these employers (by websites/newsletters)
are yet to take place. However, should it prove unfeasible to use these sources, participation will be requested from staff within the university.

- A request will be placed in the debrief inviting participants to forward the recruitment advert to acquaintances who might be interested in participating.

A formal diagnosis of OCD is not necessary, as a spectrum of clinical and non-clinical obsessive-compulsiveness is desired. However prior to participating individuals must confirm they are over 18 years of age, have understood the relevant information and freely consent to take part.

In a similar study carried out previously within the department using a charity and university sample, 224 participants were recruited and fully completed the study. Other studies have successfully recruited through large employers by placing adverts in staff newspapers and on notice boards (Aardema et al., 2009). If recruitment was agreed with a local authority employer for instance, the participant pool would be in excess of 1000.

**Design**

The current study will employ a combination of quasi-experimental, correlational and regressional designs, using cross-sectional data gathered through online completion of the established IPT reasoning task and self-report measures. Self-report of the variables in question provides a valid, reliable and practical way of collecting information.

The quasi-experimental component will be of mixed-design, with a between subjects independent variable of ‘obsessive-compulsiveness’ (high and low), and a within subjects independent variable of ‘information type’ (reality- and possibility-
based). The dependent variable will be the ‘cumulative level of doubt’. Correlation and regression methodology will also be used to investigate the relationship between dissociation and obsessive-compulsiveness, and the unique contribution of dissociation to the variance of doubt. As has become good practice in OCD research, analyses will control for depression (Rachman, 2007).

Measures

The Inference Process Task (Aardema et al., 2009, see appendix 2). This task offers participants a brief description of two scenarios, one concerning an OCD related threat and one which is reasonably neutral. Subsequently three couplets of reality- and possibility based information are presented. After the initial scenario and following each piece of new information, the participant is asked to rate, on a scale of 10-100, the probability of an event involved in the scenario having occurred (seven ratings in total). This probability rating equates to the level of doubt that the event has not actually happened. The presentation of new and competing information represents the reasoning process of weighing up reality- and possibility-based information. This experimental paradigm demonstrated good convergent validity with the Inferential Confusion Questionnaire (Aardema, O’Connor, Emmelkamp, Marchand, Todorov, 2005), therefore demonstrating its ability to operationalize IC. However, notably it has received no further published replications to date.

The Dimensional Obsessive-Compulsive Scale (DOCS, Abramowitz et al., 2010, see appendix 3). The DOCS is a 20 item self report scale of obsessive-compulsiveness. Overcoming limitations of previous instruments, the DOCS measures the severity of obsessions and compulsions in reference to four empirically
derived dimensions, allowing for the accommodation of a person’s idiosyncratic symptoms. The dimensions include: contamination, responsibility, unacceptable thoughts and symmetry. Severity is measured in reference to a number of domains, including avoidance behaviour, and a total severity score can be obtained by calculating the total for each domain (total possible score of 80). Convergent validity was established through correlational comparison with other common measures of obsessive-compulsiveness. Both internal consistency and test-retest reliability coefficients were comparable to other established measures. A cut-off score of 18 demonstrated an acceptable balance between diagnostic sensitivity and specificity, and will therefore be used to dichotomise the sample into a high and low OC group for the appropriate part of the analysis.

The Dissociative Experiences Scale II (DES, Carlson and Putnam, 1993, see appendix 4). The DES-II is a 28 item self report scale of dissociative traits in daily life. Items are intended to reflect both pathological and non-pathological forms of dissociation. Individuals rate the frequency of which they experience a number of dissociative phenomena on a scale of 0 to 100. Tests of reliability and validity of the full scale have shown favourable results. Whilst originally developed as single continuous measure of dissociation, Stockdale et al. (2002) confirmed that the three factor structure previously established in clinical populations was equally valid in non-clinical populations. These three factors have frequently been used in empirical studies to represent DES subscales of 1) absorption and imaginative involvement, 2) amnesia, 3) derealisation and depersonalisation. It should be noted however, that evidence for the number of underlying factors in the DES remains mixed, and the scale as a whole is limited by its assessment of frequency rather than severity of
dissociation (Holmes et al., 2005). However a stronger alternative measure of dissociation is yet to be developed.

The Depression Anxiety Stress Scale - 21 (DASS21; Lovibond & Lovibond, 1995, see appendix 5). The DASS21 is a 21 item self-report scale which has been designed specifically for both clinical and research use. It aims to represent the symptom subscales of depression, anxiety and stress in a dimensional way rather than applying arbitrary cut-off scores. Validity and reliability have been demonstrated for the DASS21. Only the depression subscale will be used in the current study, in order to control for the effects of low mood during analysis.

Other materials:

- Recruitment advertisements, see appendix 6.
- Participant information sheet, see appendix 7.
- Consent form, see appendix 8.
- Debrief information, see appendix 9.
- Sources of help and advice sheet, see appendix 10.
- Demographic data will also be collected (will not include identifying details such as name and contact details).

Procedure

1. Upon approval from the course team and ethics committee, all information, tasks and questionnaires will be organised into a format suitable for online completion.

2. Advertisements for participation will be placed on the websites of participating charities; requests will be made to other local participating organisations to place adverts on their intranet, notice board, newsletter or
email. These advertisements will direct individuals to access the online materials.

3. Once sufficient participants have completed the online task and questionnaires, the data will be transferred to SPSS for analysis.

4. Following analysis the complete project will be written up. An additional summary version of the results will be made available to any participant who indicates they wish to receive a copy.

**Ethical considerations**

In line with the British Psychological Society’s (2009) Code of Ethics and Conduct, the following issues have been considered in regard to the current study.

**Distress:** A degree of implied threat is inherent to one of the scenarios presented in the IPT and might therefore provoke distress, particularly if reminiscent of an individual’s actual obsession or unintentionally reflecting a real-life event. Accordingly, written information given prior to participation will clearly explain the potentially triggering nature of the task. Participants will be advised not to continue if they anticipate personal distress; they will be asked to indicate their informed consent; and their right to withdraw will be emphasised.

**Detection of clinically significant symptoms:** The current study assumes obsessive-compulsiveness, dissociation and unpleasant mood states to exist in varying degree amongst the general population. This means there is potential to detect clinically significant symptoms in people who are either unaware or not accessing help. It would not be feasible (nor ethical) to give individual advice to such individuals, however participants will be advised of sources of help at the end of the task should they feel the need to access advice.
Storage of data: Data shall be stored in line with the Data Protection Act (1998). All data will be anonymous as no identifying details (aside from demographic information) shall be collected.

Prior to commencement, during October/November 2012, the proposed procedure and its materials will be submitted to the Faculty of Arts & Human Sciences Ethics Committee, University of Surrey, for scrutiny and advice.

R&D Considerations

Not applicable.

Proposed Data Analysis

Data checking. The data will be checked for accuracy and completeness (e.g. all probability ratings are within the defined limits, all questionnaires have been completed fully). The data will also be checked for outliers and normality of distribution.

Data Analysis. Using the Statistical Package for Social Sciences, hypothesis 1 will be tested using a 2 x 2 mixed ANOVA, with post-hoc analysis to identify potential interactions between obsessive-compulsiveness and type of information and their effects on cumulative levels of doubt. This analysis will be repeated separately for the harm-related and neutral conditions of the reasoning task. A bivariate correlation test will be used in relation to hypothesis 2, exploring the relationship between dissociation and obsessive-compulsiveness. Hypothesis 3 concerning variance in the impact of possibility-based information on doubt will be analysed using a hierarchical linear regression model, with depression entered in the first block of predictors and both types of dissociation in the second block.
Service User and Carer Consultation / Involvement

Ideas for the recruitment of participants were explored with service users and carers linked with the University, who also later edited advertisements and participant information.

Feasibility Issues

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable to negotiate recruitment of a non-clinical sample</td>
<td>Advertise through the university for staff to participate.</td>
</tr>
<tr>
<td>through local organisations.</td>
<td></td>
</tr>
<tr>
<td>Insufficient number of participants recruited.</td>
<td>Advertise for further participation from university staff or</td>
</tr>
<tr>
<td></td>
<td>students.</td>
</tr>
<tr>
<td>Difficulties with use of online materials.</td>
<td>Approach technicians in the department for assistance.</td>
</tr>
</tbody>
</table>

Dissemination strategy

The findings of the current study will be disseminated once it has passed course requirements. It is the intention to submit the write-up to a relevant peer-reviewed journal. A shorter summary will be distributed within the organisations which allowed recruitment, and to individual participants who expressed a wish to receive a copy of the findings.
## Study Timeline

<table>
<thead>
<tr>
<th>Event</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course approval of MRP proposal</td>
<td>6&lt;sup&gt;th&lt;/sup&gt; August 2012</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; September 2012</td>
</tr>
<tr>
<td>Ethics submission</td>
<td>Draft submission September 2012 – submit November 2012</td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td>Start: January 2013</td>
<td>Finish: July 2013</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Start: September 2013</td>
<td>Finish: October 2013</td>
</tr>
<tr>
<td>Completion of drafts:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Introduction</td>
<td></td>
<td>June 2013</td>
</tr>
<tr>
<td>• Method</td>
<td></td>
<td>September 2013</td>
</tr>
<tr>
<td>• Result</td>
<td></td>
<td>November 2013</td>
</tr>
<tr>
<td>• Discussion</td>
<td></td>
<td>January 2014</td>
</tr>
<tr>
<td>Complete draft submitted to supervisor</td>
<td>January 2014</td>
<td></td>
</tr>
<tr>
<td>Assemble MRP portfolio and make amendments</td>
<td>February 2014</td>
<td></td>
</tr>
<tr>
<td>Submission of MRP portfolio</td>
<td>7&lt;sup&gt;th&lt;/sup&gt; April 2014</td>
<td></td>
</tr>
<tr>
<td>Prepare for viva</td>
<td>April-May 2014</td>
<td></td>
</tr>
<tr>
<td>Make MRP amendments following viva</td>
<td>June-August 2014</td>
<td></td>
</tr>
<tr>
<td>Submit for publication and arrange</td>
<td>August-September 2014</td>
<td></td>
</tr>
<tr>
<td>appropriate storage of data.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
University Supervisor: Laura Simonds

Field Supervisor: N/A

Signature of trainee: [Signature]

Date: 6/8/12

Signature of university supervisor: [Signature]

Date: 6/8/12
References


PSYCHD CLINICAL PSYCHOLOGY

Major Research Project: Literature Review

What is understood about the role of dissociation in obsessions and compulsions? A systematic review of the literature

Word Count: 7826
Abstract

The aim of this review was to collate and analyse research relevant to the experience of dissociation alongside obsessions and compulsions, to establish whether a relationship between these clinical phenomena exist, and if so the nature of this interaction. A systematic search of bibliographic databases was conducted, from which 18 articles were selected for review on account of their direct relevance to both subjects of dissociation, and obsessions and compulsions (OCs). A number of themes emerged from these articles which were subject to critical evaluation, they were: establishing evidence for a link, symptom sub-domains, perseverance as a trigger of dissociation, specific memory deficits and treatment implications. Also, a critique of common measurement tools was made. In general it would seem that dissociation can be considered as a feature of obsessive compulsive disorder (OCD), and is most strongly associated with the checking symptom sub-domain. However, a number of studies have suggested that the relationship between dissociation and checking may be mediated by other factors, such as cognitive uncertainty and perfectionist traits, that are common in people with OCD. A crucial finding of this review provides the most compelling evidence for continued research into this area: the discovery that dissociation can inhibit otherwise routine treatments for OCD. Suggestions for replication studies and further research have been made, to advance our understanding of the relationship of dissociation to OCs.
Interest has been shown in the area of obsessions and compulsions (OCs) for over a century, but the potential involvement of dissociation has been questioned much more recently. Pica, Beere and Maurer (1997) for instance noted the commonality of dissociative patients reporting obsessions, and obsessive-compulsive patients reporting dissociative experiences. There has been a growing movement to understand and treat dissociation within other clinical disorders too, such as in post traumatic stress disorder, however these areas have received considerably more attention than OCs. The last 25 years has seen sporadic attempts to explore the connection, if any, between dissociation and OCs. However the research literature in this area remains limited, both in quantity and the validity of findings, and it largely lacks integration. The aim of this review is to establish what is known about the role of dissociation in OCs, to identify any controversies or gaps in our understanding, and to clarify the direction that future research should take to produce a more coherent picture, one that will be relevant not only to our theoretical understanding, but also to clinical practice.

Dissociation has been defined as “a disruption in the usually integrated functions of consciousness, memory, identity, or perception. The disturbance may be sudden or gradual, transient or chronic” (Diagnostic and Statistical Manual IV-TR, DSM-IV-TR, 2000, pg 519). Whilst dissociation has been recognised within diagnostic systems as an independent disorder, it should be noted that it has also been observed as a feature of other mental health disorders (Spitzer, Barnow, Freyberger and Grabe, 2006), a non-pathological human experience (Watson, Wu and Cutshall, 2004), and in some cultures a valued spiritual experience. Holmes et al. (2005) note the tendency in both theory and research to conceptualise dissociation as a single concept, varying only quantitatively along a continuum. However, clinical reports
suggest dissociative experiences differ in nature as well as in degree. For example, Holmes et al. (2005) argue that the dissociation of feeling withdrawn or unreal when recounting a trauma, seems quite different to the sensory loss or amnesia that was assumed to be caused by dissociation in the context of conversion disorder. Consequently Holmes et al. (2005) recommend that dissociation be viewed in two distinct forms: compartmentalisation and detachment. Compartmentalisation was said to be characterised by mental processes functioning in isolation rather than in an integrated manner, leading to them being compartmentalised away from conscious awareness. Conversely, detachment could be viewed as a distancing between self and environment. Holmes et al’s (2005) review suggests this subtyping of dissociation is supported by factor analysis of symptom assessment tools and experimental research. Spitzer et al’s. (2006) review of the literature also endorsed the separation of dissociation into two discrete types, and suggested that treatment aims for each were also distinct. For example, they suggested the aim of reintegrating mental processes when they had been compartmentalised, or to reduce triggers and cease episodes of detachment. An understanding of compartmentalisation and detachment provides contextual information to the current review, however for an in depth account of the history and conceptualisation of dissociation, see Holmes et al. (2005). The following review will focus exclusively on “what is understood about the role of dissociation in obsessions and compulsions?”.

Search Strategy

The body of literature citing obsessions, compulsions and dissociation was approached systematically through a number of database searches in December 2011,
searching: PsycInfo, PsycArticles, PsycBooks, Psychology and Behavioural Sciences Collection, Medline and CINHAL. By entering the specific search terms of (Obsess* OR Compuls*) AND Dissociat* without any restricting limiters, a total of 399 unique references were returned. From these initial records, articles were examined and selected for review if their primary focus was specifically dissociation or dissociative experiences (as already defined in the introduction), in Obsessive Compulsive Disorder (OCD), Obsessive-Compulsive Personality Disorder (OCPD), or non-clinical obsessive-compulsiveness. The reference lists of these articles were also searched for other relevant research. Papers were not included for review if they mainly addressed trauma, personality disorders, eating disorders, addictions or psychosis. Also, papers were not selected if they addressed forms of dissociation other than that defined in the introduction, for example eye-hand dissociation or dissociation in reference to biological processes. Papers were also excluded if it was not possible to obtain a full English translation of the article. A final selection of 18 peer-reviewed empirical papers was made for review.

The Relationship Between Dissociation and OCs

Perhaps the first and most important question to ask of the literature is: does evidence exist to suggest there is in fact any link between OCs and dissociation? This is a particularly pertinent question given that neither DSM-IV-TR or the ICD-10 (World Health Organisation, 1992) employ dissociation as diagnostic criteria for OCD, nor is it an area commonly addressed in clinical literature.

One of the earliest indications that dissociation and OCs may be linked was noticed by Goff, Olin, Jenike, Baer and Buttolph (1992), who made the observation that OCs were frequently reported by individuals with depersonalisation disorder (a
sub disorder of dissociation according to the DSM-IV-TR). To seek clarification they administered the Dissociative Experiences Scale (DES, Bernstein and Putnam, 1986) with a clinical sample diagnosed with OCD. Through correlational tests, a significant positive association was found between dissociative symptoms and self-reported symptoms of OCD measured by the Maudsley Obsessive Compulsive Inventory (MOCI, Hodgson and Rachman, 1977). This indicated that those with higher levels of OCs also experienced high levels of dissociation, although of course causality could not be inferred. Interestingly this result could not be replicated when the measure of OC entered into the correlation was the Yale-Brown Obsessive Compulsive Scale (Y-BOCS, Goodman et al, 1989), which is a clinician administered instrument rather than self-report. Lochner et al. (2004) also could not replicate a positive association between general OC symptom severity and DES scores using the Y-BOCS. Conversely, a significant correlation was detected by Prasko et al. (2010), who found a positive relationship between the Y-BOCS and DES scores. To further test the relationship quasi-experimentally, Goff et al. (1992) went on to form high and low dissociation groups within their sample, observing the differences each group demonstrated. Using a DES cut off score of 20, 20% of the sample were classed as high dissociators, and the bottom 20% of the sample (all scoring under 3 on the DES) were classed as low dissociators. Comparison of these two groups revealed that the high dissociating group scored significantly higher on both self-report and clinician rated OCs. The authors of the DES suggest a score of 20 to detect individuals with severe dissociative difficulties, however other authors such as Lochner et al. (2004) and Raszka et al. (2009) utilized a higher score of 30. This might imply that had the higher threshold of 30 been used, the differences in OCs may have been even more significant. D’Ambrosio and Vacca (2008) found a
negative correlation with obsessive-compulsive personality disorder (OCPD) symptomology and dissociation. Also, significantly less participants with OCPD were found in their high dissociator group (demarcated by DES >30). In comparison, the correlational pattern between dissociation and OCPD and with OCD symptomology suggests that the relationship might be conceptually quite different. In summary, the evidence for a relationship between dissociation and OCs is mixed. Although, it seems likely that this variability might reflect difficulties and inconsistencies in the measurement of dissociation.

**Dissociation in OCD and Control Groups**

Raszka, Prasko, Koprivova, Novak and Adamcova (2009) compared a group of patients with OCD to healthy controls, and found that the OCD group showed significantly higher scores on the DES than the healthy controls. Merckelbach and Wessel (2000) also found that OCD patients scored significantly higher on the DES than healthy controls. In contrast, Prasko et al. (2010) found that healthy controls showed significantly higher scores on the DES than patients with OCD. Notably, the control group for this study were selected from the local community and on the basis that they had no previous axis 1 disorder, however they showed a mean DES score of 22.5. Given that a score in excess of 20 might be considered to indicate severe dissociation (Bernstein and Putnam, 1986), one might question whether this control group was indeed a healthy basis for comparison. This situation makes a good argument for applying stringent screening criteria to control groups, for both methodological and ethical reasons. Watson et al. (2004) reported that clinical and non-clinical groups did not differ significantly on overall dissociation scores. They attributed this finding to the balancing effect seen by the undergraduates rating
higher on the imagination subscale of the DES (generally considered the least pathological) and outpatients scoring higher on obliviousness and detachment subscale, implying that people with OCD may differ qualitatively rather than quantitatively from those without OCD. With opposing evidence, no confirmation can be made that individuals with OCD experience more dissociation than healthy controls. Potential reasons for this ambiguity might be that inadequate control groups have been employed, or that research has mainly focused on establishing a quantitative difference, but instead the difference resides with the nature of dissociation.

The Influence of Comorbidity

Whilst recognizing the presence of dissociation in OCs, some research has advised that it may in fact be a product of a comorbid disorder. Goff et al. (1992) found that those scoring above 20 on the DES were also more likely to report depressive symptoms and meet diagnostic criteria for at least one personality disorder. However Raszka et al. (2009) used a multiple regression analysis to discover the degree of variance in dissociation that might be attributable to depressive symptoms, and found that depressive symptoms could not independently account for elevated dissociation in their OCD group, but neither could the severity of OCs. Instead, Raszka et al. (2009) found that general anxiety symptoms were the only independent predictor of dissociation, and therefore concluded that those with OCD who experienced higher levels of general anxiety were the subset who were most likely to experience dissociation. Prasko et al’s (2010) findings seemed to partly substantiate both claims relating to anxiety and depression, finding positive correlations for both anxiety and depression with dissociation, however as no multiple regression analysis was
conducted no conclusions can be made about the exclusivity of any of these relationships. Watson et al. (2004) measured neuroticism, generalised anxiety, social phobia and blood/injury phobia, finding only generalised anxiety to significantly correlate with dissociation. Yet this association was not as strong as the link between obsessing/checking with dissociation, which existed even when controlling for general anxiety. Watson et al. (2004) therefore concluded that a unique relationship existed between dissociation and OCs. In Goff et al.’s (1992) study, 62.5% of the high dissociation group independently met criteria for a dissociative disorder. With regard to those who did not meet these criteria but still scored high on dissociation, it was proposed that certain items on the DES might mimic symptoms of OCD without necessarily indicating dissociation. For example, uncertainty over one’s performance of actions was said to independently feature in both disorders, thus accounting for the high dissociators that did not show a dissociative disorder. However, an alternative explanation might be that dissociation genuinely existed as an independent phenomenon in OCD. Although, this account must be regarded with caution as it was a smaller percentage who did not experience a dissociative disorder. Pica et al. (1997) stated that individuals with OCD and dissociative disorders shared the same trait for cognitive rigidity, involving difficulty with integrating new and old perceptual or cognitive experiences. They were however reluctant to extend this proposition to say that this style caused either OCs or dissociative experiences, believing there to be a more complex process involving an environmental contribution. A potentially important factor in Goff et al.’s (1992) study was that the mean duration of illness was 18.5 years, therefore a higher rate of co-morbidity and complexity might reasonably be expected in this group. Presumably they had been treatment resistant for this many years, and hence may not adequately represent
others with OCs. These studies regarding the comorbidity of other pathology casts an element of doubt over whether the link with dissociation resides specifically and independently with OCs. Also, questions are therefore raised about the validity of research that does not specifically control for co-morbid symptoms.

Summary
To summarise the studies in this area, it would seem that a relationship is likely to exist, but there has not been enough consistent replications to confirm a definitive link. The nature of this plausible relationship is not clear. It is a possibility that dissociation is directly linked to OCs, but alternatively this relationship may be a consequence of other disorders commonly found alongside OCD such as depression and anxiety. Goff et al’s (1992) work reported that people with OCD can experience dissociation without it being an independent dissociative disorder, although they did question whether the DES items mimicked OCD without actually detecting true dissociation. Some significant issues relating to the measurement of dissociation are apparent, however as they relate to the entire review, these will be critiqued separately further on.

OC Symptom Sub-Domains
As an extension to research ascertaining the presence of dissociation in OCs, further studies have considered the relation of dissociation to more specific subtypes of OCs.

Subtypes
Grabe et al. (1999) conducted a correlational investigation of the DES related to OC domains according to the Hamburg Obsessive-Compulsive Inventory (HOCI,
Zaworka, Hand, Lunenschloss and Jauernig, 1983). Analysis of the results revealed positive associations between dissociation and both the checking and ordering/symmetry subtypes of OCs. Consequently, Grabe et al. (1999) subjected these results to further analysis by creating a ‘high dissociators’ (DES score ≥8) and ‘low ‘dissociators’ (DES score ≤5) group. This analysis revealed that the high dissociators displayed significantly more checking, ordering/symmetry, and obsessive thoughts subtypes than the low dissociators. Although, notably this difference was obtained using a less robust way of denoting high dissociation than in other comparison studies (Goff et al., 1992, Lochner et al., 2004, Raszka et al., 2009). This finding corroborates Goff et al’s (1992) conclusions, that high dissociators experience more checking symptoms. Watson et al. (2004) conducted similar investigations with non-clinical participants and general psychiatric outpatients, using alternative measures of OCs: the Schedule of Compulsions, Obsessions, and Pathological Impulses (SCOPI, Watson and Wu, 2005) scale and also the Obsessive-Compulsive Inventory (OCI, Foa, Kozak, Salkovskis, Coles and Amir, 1998). They found dissociation (on both the DES and Dissociative Processes Scale, DPS, Harrison and Watson, 1992) to be most strongly correlated with the checking and obsessing symptom domains for both groups. Rufer, Fricke, Held, Cremer and Hand (2006a) were also able to detect significant correlations when using sub-domains of OCs with an OCD sample. They found the strongest correlation to be between the total DES score and the subtype of checking. Weaker correlations were found between total DES scores and symmetry/ordering and also with obsessive thoughts. The detection of a relationship with symmetry/ordering replicated a previous finding by Grabe et al. (1999). The relationship with obsessive thought echoed similar findings of Watson et al. (2004). However during stepwise
multiple regression, only checking could be considered to have an independent positive correlation with dissociation. Lochner et al. (2004) found that patients with symmetry and ordering type symptoms scored significantly higher on the DES, and unusually reported no relation with checking.

**OC Symptom Subtypes and Specific Forms of Dissociation**

Watson et al. (2004) demonstrated a strong positive correlation between the obsessing and checking symptom domains and two specific forms of dissociation measured by the DPS, obliviousness and detachment, which they interpreted to be the more dysfunctional forms of dissociation. Rufer et al. (2006) also looked beyond associations with general dissociation, using the subscales of the DES. They found a strong positive relationship between checking and amnesic dissociation, which would fit with Goff et al’s (1992) discovery of a high incidence of dissociative amnesic disorder in his OCD sample. This also endorses Watson et al’s (2004) finding, as obliviousness and amnesia may be considered to cover similar absent-mindedness characteristics. Two explanations for the connection were proposed by Rufer et al. (2006), one being a direct action of amnesic dissociation on checking and the other being an indirect action. The direct action would involve dissociative amnesia creating less clarity and vividness of memory for an action, and therefore a person would repeat an action just to ‘check’. Alternatively the indirect action would be mediated by other cognitive processes specific to OCD. For example, dissociative amnesia causing a less vivid image of performing an action may conflict with a perfectionist’s wish to remember precise details, thus prompting checking to enhance the memory. Also, an inflated sense of responsibility as seen in OCD would cause checking if the original memory was less vivid through dissociation, and therefore
unreliable. These are certainly interesting propositions worthy of future empirical testing, particularly due to the limitations of Rufer et al.’s (2006) correlational design. Constans et al. (1995) also declared that to feel comfortable with their memory, people with OCs desired a higher level of detail. If indeed the idea of desiring a ‘perfect memory’ is true, it would be interesting to look at what unique criteria people apply to define ‘enough’ detail.

General and objective memory failures i.e. memory problems that are consistent across time and situation, are commonly reported by people with OCs but difficult to validate empirically (Jelinek, Moritz, Heeren and Naber, 2006). It would seem memory problems induced by dissociative amnesia may offer a viable alternative explanation, that reconciles subjective and objective accounts of the problem. It might also be questioned whether this dissociative phenomenon could be evidence of a compartmentalisation type dissociation (Holmes et al., 2005, Spitzer et al., 2006), whereby the memory is intact, but compartmentalised aside from conscious awareness. Although, contrary to this Watson et al. (2004) did also find a correlation with detachment.

Summary

Research to date seems to demonstrate a potentially unique relationship between dissociation and checking. On this basis alone it would be incorrect to recommend future research only focuses on this domain. However, it is reasonable to suggest that researchers should be explicit about the representation of OC subtypes in their sample. This would enable a consistent evidence base to be formed, highlighting where differential relationships might exist between dissociation and OC subtypes. Some slightly weaker evidence points to a relationship between dissociation and
symmetry/ordering, which might make sense if one considers that these compulsions might feature ‘checking’ for exactness. Although, if this were the case, the overlap may signify a lack of discriminative ability between the OC sub-domains. This relates to another cautionary point. Leckman, Grice, Boardman and Zhang (1997) examined the ability to reliably categorise OC symptoms into distinct domains based on the Y-BOCS. Through factor analysis they established four domains of OCs, yet other attempts have failed to agree on the same categories (Pino, Eisen, Mancebo, Greenberg, Stout and Rasmussen, 2007). Even Watson et al. (2004) had to re-organise the OCI symptom domains in their study as the existing categories showed poor discriminant validity. Furthermore, Rufer et al. (2006) noted that all participants scored significantly on two or more of the symptom dimensions in the HOCl-S. Two points might be concluded here, either a tighter definition needs to be made of each sub-domain. Or in clinical reality there is no such thing as a pure subtype, which would have obvious implications for the study of which subtype is most associated with dissociation.

In light of the findings regarding OC symptom domains, it might be hypothesised that the earlier studies which failed to consistently show links between dissociation and OCs, may have employed samples with a low representation of people who engaged in checking or ordering/symmetry. At best this would have diluted any genuine relationship, but at worst if no checkers were in the sample at all, might have falsely found dissociation to be unrelated to OCs. Goff et al’s (1992) findings uphold this notion, as they found more checking in the high dissociation group. A further useful contribution of Watson et al. (2004) and Rufer et al. (2006) was their exploration beyond dissociation as a single concept, as this might be too broad to detect differences. For example it may be that OCs are more strongly
related to a specific type of dissociation, and consequently, when the overall dissociation score is used in analysis, the relationship between dissociation subtypes and OC symptoms is masked.

Perseveration

With research tending to favour the opinion that dissociation is implicated, at least in particular sub-domains of OCs, the question remains as to why this group of people are inclined to dissociate.

Working with non-clinical participants, van den Hout, Engelhard, de Boer, du Bois and Dek (2008) made the prediction that perseverative staring (prolonged visual attention), as seen in clients with checking type OC, would cause dissociation and subsequent mistrust in perceptions. Using a unique experimental design, van den Hout et al. (2008) successfully evoked dissociation by asking people to stare perseveratively at either a light bulb or a lit gas stove for 10 minutes. Through this method they were able to demonstrate that perceptual uncertainty (according to self report) increased from pre to post dissociation. They also found a high correlation between dissociation and uncertainty, which was corroborated by the similar findings of Van den Hout, Englehard, Seets, Dek, Turksma and Saric (2009). An unfortunate flaw of the study was the lack of a sufficient control group, as whilst attempts were made to create this group by asking them to switch focus (and therefore ceasing dissociation) prior to post tests, high dissociation and uncertainty did not differ significantly from the experimental group at all. The experimenters explained this curiosity by stating that dissociation must have persisted beyond perseveration. However another explanation may be offered through the findings of van den Hout et al’s (2009) study, where significant dissociation could be evoked within 7.5 to 15
seconds of perseverative staring. This would potentially mean that when the control group switched perseverative focus for the final 10 seconds, the new stimulus might have created a fresh episode of dissociation. Either way the original findings, although promising, need to be tested against a sufficient control group to gain empirical support.

The insinuation that dissociation may cause cognitive uncertainty resonates with Watson et al.’s (2004) explanation of how dissociative amnesia links with checking behaviour, through a mismatch with the perfect standards a person demands of their cognitive abilities. This idea of perfectionism fuses with van den Hout et al’s (2008) explanation of their findings. They suggested that people with OCs often try to exert control over processes that would otherwise be automatic, such as perception and memory, which creates higher standards. Perseveration may then be the result of trying to achieve these standards and therefore certainty, but the process happens to be counterproductive as dissociation is evoked. Alternatively, van den Hout et al. (2008) suggested that perseveration blocked semantic activation, creating the sense of feeling strange and disconnected.

Van den Hout et al. (2008) concluded that OC-like perseverative staring causes a person to mistrust their perception, much like previous research demonstrated perseverative checking caused doubt in memory and therefore more checking. This mistrust in perception was also found to be accompanied by dissociation, something which was not investigated in perseverative checking and memory studies and would therefore be an interesting line of enquiry. Despite the use of non-clinical participants, van den Hout et al’s (2009) indication that substantial dissociation can be induced in less than 15 seconds, endorses the generalisation of findings to a clinical population, as in reality checking does not
always take as long as 10 minutes. A significant strength of van den Hout et al’s (2008) study was the use of a state measure of dissociation as opposed to a trait measure like the DES. This therefore held the advantage of monitoring momentary dissociation rather than a general tendency.

Summary

Both studies concerning perseveration found a strong correlation between perceptual uncertainty and dissociation, however the reason for this relationship remains speculative and requires more exploration. The results at least add support to Rufer et al’s (2006) observations, that the relationship between dissociation and checking is unlikely to be a simple one, and that other intermediary cognitive phenomena, such as uncertainty are likely to be involved. Also, further evidence is contributed to the argument for cognitive uncertainty rather than objective memory impairments playing a role in checking behaviour. Both Watson et al. (2004) and Rufer et al. (2006a) found a correlation, albeit weaker, between dissociation and obsessive thoughts. This may indicate that an internal perseverative process is occurring during rumination. It could therefore be reasonable to hypothesise that any type of repetitious act, internal or external, has the potential to cause an individual to dissociate. Aside from this, related conceptual issues still need to be clarified, significantly whether situational doubt in cognitive abilities exists in people with OCs independently of dissociation, or only when dissociation occurs.

Specific Memory Impairments

A continuing body of research addressing possible memory deficits in OCs runs alongside the topic of dissociation, and it is not feasible within the scope of this
paper to provide a comprehensive account of such investigations. However, naturally there is some overlap between the two areas of investigation with the aforementioned uncertainty paradigm, and also with the notion of both reality monitoring and inferential confusion.

Reality monitoring refers to the ability to recognise whether an action or event really took place or whether it was only imagined, essentially distinguishing between memories that originated in one’s external or internal world. Merckelbach and Wessel (2000) stated that reality monitoring difficulties have frequently been linked with dissociation. Furthermore, they noted mixed findings in the literature relating to reality monitoring deficits in people with compulsive checking. Accordingly they hypothesised that reality monitoring in OCD may only be impaired if dissociation occurred. Using an experimental design they asked clinical and non-clinical controls to recognise whether they had actually performed or only imagined performing certain actions earlier in the session. Contrary to expectations, the OCD group did not perform worse on reality monitoring despite their high tendency towards dissociation, however they did express significantly less confidence in their memory. In the OCD group DES scores negatively correlated with confidence, indicating that higher dissociation is associated with decreased confidence but not ability. Using a similar methodology, but with the addition of an experimenter performing tasks and also being asked to imagine an experimenter performing tasks, Zermatten, Van der Linden, Laroi and Ceschi (2006), found variable results. They found that checkers more frequently confused their own actions with the actions they witnessed being by the experimenter, however they made no more frequent errors than the non-checkers in distinguishing between their own real and imaginary actions. Checkers scored significantly higher on the DES than the non-checkers.
The finding of no significant difference in general reality monitoring deficits matches the conclusion of Merckelbach and Wessel (2000). However, they took the confusion between differentiating own and other actions to mean that checkers tend to remember events from an observer’s stance rather than their own, stating that that dissociation prevents memories from being integrated as one’s own real experience, and therefore causes uncertainty. Interestingly, across the entire sample (checkers and non-checkers) a correlation was found between confusion of real and imaginary events with dissociation, indicating that dissociation and not checking was more pertinent to reality monitoring. Caution however should be exercised when drawing conclusions from Zermatten et al’s (2006) study in regard to checkers. This is because their sample was comprised of non-clinical undergraduates, and as such their checking prone group had mean OCI checking scores that were much lower than those expected in a clinical population. This meant that there was only a small distinction between the checking prone and non-checking groups, which casts uncertainty upon any comparisons drawn on the basis of the two groups.

A notable weakness of both studies was their use of the DES, a measure of general dissociative traits, rather than state dissociation. Consequently, it is difficult to say whether a dissociative state was immediately experienced by any of the participants whilst they undertook the task, and therefore implicated in the results. Accordingly, it may only be possible to conclude that people with OCD and dissociative tendencies do not tend to perform worse on reality monitoring tasks.

Aardema and Wu (2011) set about to investigate a related memory paradigm, inferential confusion. Inferential confusion relates to the phenomenon of becoming absorbed into what ‘might be’ which subsequently takes on the feeling of being real.
This occurs regardless of what sensory evidence dictates as reality. With a commendably large sample of 377 undergraduates, multiple regression analysis showed inferential confusion as a powerful predictor of OCs, although most OC symptoms also showed a high degree of variance predicted by absorption (as measured by the DES subscale). Similarly, Goff et al. (1992) and Raszka et al. (2009) also found a high incidence of the absorption subtype of dissociation in an OCD sample, although they claimed this mimicked what was considered normal non-pathological dissociation. Rufer et al. (2006a) on the other hand found opposing evidence for dissociative amnesia being most strongly correlated with OCs. From Aardema and Wu's (2011) results, one might predict that when people become absorbed in imaginative possibilities (e.g. the house burning down as a result of the cooker not being turned off), this falsely inflates the sense of reality. Subsequently more trust may be placed in this possibility than the reality (e.g. of having really turned the cooker off), which could prompt checking behaviour. This argument holds a logical sequence, however would require further empirical investigation for it to be extrapolated to a clinical population. An additional finding from Aardema and Wu (2011) was that depersonalisation was a negative predictor of OCs, in particular hoarding and checking. Unfortunately only a minimal explanation was offered for this interesting finding, where they alluded to the process of detaching from reality as being in some way helpful.

Summary

It is possible, and indeed logical based on evidence from other research fields, that dissociation in people with checking OCs may cause reality monitoring difficulties and therefore cognitive uncertainty. However studies have repeatedly failed to find
this expected outcome. This might be interpreted in one of two ways, either there is genuinely no relationship of these variables, or methodological weaknesses to date have acted as a barrier. A further question should also be raised as to why the ‘imagination’ has such strength in creating alternatives that are not based on reality in people with OCs? Perhaps one possibility might be based on the cognitive theory of OCD. The theory states that individuals have a propensity to process information in a distorted way, for example overestimating threat (Clark, 2007). Consequently a catastrophic representation of reality may be created.

**Genetic and Environmental Influences**

Trauma has repeatedly been linked with dissociation, both in respect to post-traumatic stress disorder and the proneness to dissociation in adulthood following childhood trauma. In fact Pica et al. (1997) asserted that the origins of dissociation mostly reside in the environment and not in biology. On this basis, Lochner et al. (2004) investigated the incidence of childhood trauma in adults with OCD who dissociate. Overall a positive correlation was established between DES scores and childhood trauma, in particular physical neglect. The participants were divided into high and low dissociation groups based on a DES cut score of 30, defining 15.8% as high dissociators. Interestingly, significantly more experiences of other disorders including bulimia and borderline personality disorder were reported in the high dissociator group. This might indicate that the dissociation could not be presumed as a unique feature of OCD in these cases, as both bulimia and borderline personality disorders (D’Ambrosio and Vacca, 2008) have been linked with dissociation and childhood trauma. A replication of this study, controlling for such co-morbidities may be helpful, and also indication on the subscale weightings for the DES, as
Holmes et al. (2005) might suggest that trauma tends to yield a detachment type dissociation. Ethical caution should always be exercised when reporting that child abuse might underlie an individual’s current problems. Goff et al. (1992) countered the proposed link with trauma, as in their OC sample those who reported abuse showed no more dissociative symptoms than those who did not. Also, Fontenelle et al. (2007) reported that OCD patients reported significantly lower rates of early trauma than did those with social anxiety, and there was no significant difference in the degree of dissociative symptoms reported.

Lochner et al. (2007) took less of a definitive stance to Pica et al. (1997), proposing that a combination of environment and genetics may offer a more convincing aetiological explanation of dissociation. Through genotyping procedures, they revealed that a combination of childhood physical neglect and specific S/S genotypes of the 5-HTT gene could account for at least some of the variance in dissociation seen in OCD. This would make sense being that the S/S alleles had previously been connected with a susceptibility to anxiety. This is a fertile area for research, as little other data exists to allow evaluation. Perhaps significantly, six of the sample had pre-diagnosed dissociative disorders, which may have skewed results as other studies show that people with OCs dissociate regardless of an independent dissociative disorder. Strangely only one of those with dissociative disorder scored over 30 which would have been considered as severe, which questions the reliability of the DES cut-off scores in identifying high dissociators.

**Interference with Therapy**

With growing evidence for the presence of dissociation alongside OCs, Rufer et al. (2006b) questioned the efficacy of therapeutic intervention for this group of patients,
particularly as they noted other research implied dissociation hindered treatment of panic disorder with agoraphobia. Additionally, Rufer et al. (2006b) noted that 20-50% of OCD patients fail to improve satisfactorily through psychological treatment.

After cognitive behavioural therapy (CBT) intervention lasting an average of 9.5 weeks, Rufer et al. (2006b) found that scores on the Y-BOCS post treatment could be adequately predicted by the DES absorption and imaginative-involvement subscale. Those who had a tendency to dissociate prior to treatment saw less improvement in their OC symptoms. Participants who were classed as treatment non-responders (did not see at least a 35% reduction in their Y-BOCS scores) were shown to experience significantly more dissociation pre-treatment to those who did show response to treatment, and again this difference was unique to the absorption aspect of dissociation. These relationships all remained significant once controlling for co-morbidities and medication use.

CBT for OCD and panic disorder with agoraphobia shares a common treatment strategy of exposure therapy. It was therefore believed that dissociation might interfere through the disruption of effective exposure, and would make sense given the rationale for the mechanism of the intervention. Exposure treatment involves an individual becoming intentionally and fully exposed to their anxiety, which is usually provoked by a specific stimulus such as an obsessional fear. The anxiety is then allowed to decline naturally over time, a process known as habituation, whereby the association between the stimulus and fear response are de-conditioned. Dissociation might therefore disrupt the process by preventing an individual from becoming fully exposed to their anxiety, which is essential to enable successful habituation to occur. As with all evaluations of CBT, the ability for comparison with other studies can be limited as CBT is an umbrella term for a
number of different techniques, meaning that each participant cannot be guaranteed to have received equivalent intervention. Additionally, the participants of Rufer et al’s (2006b) study were a mix of inpatients and outpatients, therefore inpatients would presumably be receiving support in addition to CBT sessions, so it cannot be assumed the treatment across the sample was comparable either.

In a related study Spitzer, Barnow, Freyberger and Grabe (2007) observed that non-responders to treatment began treatment with significantly higher levels of dissociation than treatment responders, although only a few of this sample were actually diagnosed with OCD. Additionally regression analysis revealed that dissociation was a predictor of non-response to treatment, alongside other factors including low psychopathology on entering treatment and personality disorder. The context of this study differed markedly from Rufer et al. (2006b), as the therapeutic approach was psychodynamic rather than CBT, however this orientation would also require a person to experience rather than disconnect from anxiety. A problem with making OC specific conclusions from this study is that other anxiety conditions were highly represented within the sample. Also in terms of usefulness, the psychodynamic approach is less likely to be implemented as a first line treatment in the United Kingdom, as NICE guidelines (NICE, 2005) favour CBT with exposure.

Summary
The studies of both Rufer et al. (2006b) and Spitzer et al. (2007) forecast a gloomy outlook on recovery for people with OCD who also experience dissociation. They suggest that dissociation acts as a barrier to psychological intervention as it distances someone, at least in part, from connecting with their anxiety. However, incongruent with this notion is Lochner et al’s (2004) findings that high and low dissociators did
not show significant differences in their response to CBT. The mixed results would urge more exploration of treatment outcomes for this group as a high priority, as it might be suggested a different treatment approach should be adopted for this unique group. Clinical implications might be for example, routine screening of OCD patients entering treatment and work targeting dissociation as an initial focus of therapy. Along these lines Lochner et al. (2007), who proposed childhood trauma as a predictor of dissociation and therefore potentially poor treatment outcomes, suggested that trauma focussed psychotherapy may augment treatment response for later OC interventions. Holmes et al. (2005) and Spitzer et al. (2006) would also advocate a different treatment approach dependent on the type of dissociation experienced, which as of yet has not convincingly been verified in OC. As a final point, Meyerson (2011) made a fascinating proposition that a lack of treatment progress may be remedied by using hypnotically induced dissociation (HID). Meyerson (2011) suggested HID may have therapeutic qualities as it facilitates ‘natural’ and positive dissociation to be restored; reintegrates elements that have been unhelpfully dissociated; and enables access to intrapsychic origins of distress that contribute to OCs. However, even Meyerson (2011) admitted that HID was yet to become a mainstream treatment. This alternative approach would most certainly need to be subjected to empirical testing to gain credibility.

**Measurement of Dissociation**

As a final point in reviewing literature in the area of OCs and dissociation, the effective measurement of these concepts will be considered. The DES has been by far the most commonly used measure of dissociation, consisting of 28 self-rated items assessing the frequency of both normal and pathological forms of dissociation.
in everyday life. However, caution should be taken when interpreting its results. For example, it might be tempting to attribute dissociation as a factor that drives checking in light of the research findings. But as the DES measures dissociative traits this inference would be precarious, as no evidence has been provided that a state of dissociation occurred whilst checking rituals took place, an alternative measure of state dissociation would be needed for this. As stated by Kruger and Mace (2002), dissociation tends to be a transient state and therefore its relevance to other phenomena needs to be measured in the moment, for example with the State Scale of Dissociation (Kruger and Mace, 2002). Also, whilst the DES has been extensively checked for reliability and validity, anomalies have still be found amongst the articles in this review (scope does not allow for a full review of the psychometric properties of the DES here). For example, the mean DES score for OCD samples has varied widely between 10.8 (Rufer et al, 2006b) and 24.5 (Merckelbach and Wessel, 2000), making it difficult to compare or integrate findings. Furthermore, in some studies the apparently elevated DES scores in OCD groups were actually equivalent to the scores of healthy controls in other studies. As already indicated, at the very least researchers should make explicit the subtype of OCs represented in their sample, as this may aid more reliable interpretation. Some studies have also created high and low dissociation groups based on a pre-determined DES cut off point, however the generalisability of these results is limited because the cut score varied remarkably, with some studies claiming people scoring over 8 were high dissociators and others, a score of over 30.

With regard to the measurement of OC’s, a wide variety of measurement tools have been employed, both self-report and clinician rated, which may impact on the ability to generalise findings. Westenberg (2004) showed that client and clinician
ratings of symptoms varied significantly, which would imply that when assessing a number of people’s symptoms the most reliable method would be for a clinician to rate, as they would at least keep consistency across the sample. The Y-BOCS appears to be the most popular tool for this, and has been considered the gold standard of assessment tools for OCD (Deacon and Abramowitz, 2005). Although, it should also be acknowledged that it would be quite unfeasible for a clinician to rate symptoms in all studies.

**Conclusion**

This review has provided a critical account of the research literature that enlightens our understanding of the relationship between dissociation and OCs. Methodological issues aside, I will attempt to summarise and assimilate the findings to date.

To warrant research interest in this area, a level of dissociation greater than what might be expected in the normal population needed to be identified in people with OCs. Several studies were able to demonstrate this, however others were unable to confirm it. These mixed findings may reflect a genuine lack of relationship, but it seems possible that the OC symptom distribution within some samples may have been such that dissociative features would not have been reasonably expected anyway. On the whole, dissociation and OC symptom severity did not seem to show a dose-dependent relationship. As it would seem that people with OCD do differ from the general population in terms of dissociation, it would be interesting to see whether this variance is about nature or degree? Amid concerns that dissociation may be the product of co-morbidities commonly occurring alongside OCD, only one study found OCs to significantly predict dissociative symptoms yet two studies showed the potentially strong influence of generalised
anxiety to dissociation. Further research into this area would be useful, to determine whether the link with dissociation is unique to OCs or is attributable to another disorder.

The cluster of research investigating which OC symptom subtypes are most associated with dissociation revealed that dissociation is most commonly found in people experiencing checking OCs, and to a lesser extent ordering/symmetry. A question in need of further investigation here is whether higher scores on the DES really reflect dissociative experiences, or whether they are actually measuring an OC symptom? For example, being unsure about really having performed an action could indicate both dissociation and checking obsessions. Also, it would be interesting to find out how dissociation and checking come together, perhaps through the concept of perfectionism. On account of dissociation being a transient state, the ‘in the moment’ experiences of people with different types of OC could be assessed too.

Relatively little has been found about why people with OCs dissociate, as overwhelmingly researchers have sought to investigate dissociative traits rather than the nature of transient states of dissociation. Only one causal suggestion has been made, that perseverative staring may induce dissociation and subsequent uncertainty, however it is difficult to conceive that this might be the only trigger. It would be worthwhile exploring the likelihood of alternative styles of perseveration found in OCs causing dissociation, for example perseverative checking when reading a sentence. A theme that has arisen frequently throughout the literature is the possibility that dissociation and OCs might be linked through a mediating factor of cognitive uncertainty. This idea suggests that people may not in fact have a poor memory in general, they may instead lack confidence in their memory ability. Two further, but unsubstantiated suggestions were given. Firstly, that dissociation may
reduce vividness of memories and therefore cause mistrust. Alternatively, people with OCD often also possess traits of perfectionism, which if applied to mental processes may mean that they demand absolute clarity to feel comfortable. If these high standards cannot be met because dissociation has reduced the quality of a mental representation, this may trigger uncertainty. Two researchers have made this tentative link with perfectionism, which is surely an interesting attempt to connect with the wider OCD literature. However another related area to think about might also be the general trend for intolerance of uncertainty in OCD. Several lines of enquiry here would benefit from more investigation. What is the experience of dissociation on the quality of memories for actions in dissociation? Also, how much detail and clarity is demanded of a memory, and how might dissociation impact on this? Some logical suggestions were made that dissociation may cause reality monitoring deficits in people with OCD, however this was not substantiated. In terms of the longer term aetiology of dissociation in OC, both trauma and genetics have been implicated, at least in part.

In drawing on the wider body of research Holmes et al. (2005) made the argument for two distinct types of dissociation, detachment and compartmentalisation, each of which could account for the different types of dissociative experiences found across a range of mental health disorders. Holmes et al. (2005) and Spitzer et al. (2006) both advocated the importance of discovering which specific dissociative process underlies a disorder, as this would have important repercussions for treatment approaches. So far, no research has attempted to categorise the dissociation seen in OCs in this way, and even research seeking to find which subscale of the DES (which do not map directly on to the idea of detachment and compartmentalisation) is most involved with OCs is relatively incongruent, with
some suggesting absorption and others dissociative amnesia. Pica et al. (1997) alluded to OCD being more akin to compartmentalisation as a person might be said to be guarding against an internal source of anxiety, whereas trauma based dissociation would guard against external threat and therefore utilize a detachment style dissociation. This is certainly an interesting idea, although the suggestion that OCD involves only a sense of internal threat might be debated. Furthermore, given the heterogeneous presentation of OCs, it might even be possible that each subtype is characterised by a different form of dissociation. Although these are of course just speculations about the conceptual split of dissociation in OCs, but hypotheses worth testing nonetheless.

Whilst we seem far from a cohesive narrative in terms of if, when and why dissociation features in OCs, we do have some promising lines of enquiry to pursue. Perhaps the most compelling rationale for investing research into this area, is the evidence suggesting dissociation may prevent the successful treatment of OCs, through interfering with the experience of anxiety during exposure treatment protocols.
References


PSYCHD CLINICAL PSYCHOLOGY

Brief Overview of Clinical Experience
Year One, Day Treatment Service and Community Mental Health and Recovery Service

In this placement I worked with adults who brought a range of issues to therapy, including obsessive-compulsive difficulties, depression, paranoia, auditory hallucinations, panic attacks and emotional dysregulation. I took a mainly CBT based approach, however also used some mindfulness and dialectical behaviour therapy skills training. Furthermore, I co-facilitated a psychoeducational group aimed at those who had recently been diagnosed with a personality disorder. With consultation from a neuropsychologist, I conducted two cognitive assessments, using the Wechsler Adult Intelligence Scale (third edition) and Wechsler Memory Scale (third edition), for individuals who were reporting deteriorations in their memory. During this placement I conducted a small scale service related research project, using focus groups to better understand the factors which affected people’s likelihood of joining and completing a therapy group. The results of this were published in the local NHS Trust’s online journal.

Year 2, Child and Adolescent Mental Health Service

Working in a child and adolescent mental health service I saw young people and their families who were experiencing emotional, behaviour and developmental problems. I drew on a range of therapeutic approaches, including systemic, narrative, motivational interviewing and cognitive behavioural therapies. Some of the issues that were brought to therapy were anger, post-traumatic stress, persistent hair pulling, difficult family relationships, anxiety and suspected Asperger’s Syndrome. In the course of this placement I carried out assessments using the Wechsler Intelligence Scale for Children (fourth edition), Wechsler Preschool and
Primar y Scale of Intelligence (fourth edition) and Wechsler Individual Achievement Test (third edition).

Year 2, Inpatient Service for People with Learning Disabilities
In this inpatient service I carried out and contributed to a number of behavioural assessments which included observations, interviews with family and carers, a review of historical records and functional analyses. Such assessments were used by other professionals to inform care plans. Furthermore I wrote and delivered training to nursing and care staff explaining functional analysis, with the aim of improving the completion and quality of ward based behaviour monitoring. I also worked with family and carers to formulate individual difficulties e.g. the experience of a service user who heard voices. During the placement I carried out psychometric testing to assist in the formal diagnosis of a learning disability, and also to establish a baseline level of cognitive function for a gentleman with Down Syndrome who was suspected to be developing dementia. Motivated by the Winterbourne View investigation, I carried out some practice based research to understand the experience and perspectives of inpatient service users on the use of physical restraint methods.

Year 3, Older Adults Mental Health Service and Memory Assessment Service
Based in a Memory Assessment Service, I undertook two neuropsychological assessments of people in their eighties who were concerned about a deterioration in their memory and everyday functioning. These assessments featured direct client and family interviews and also the following tests: Test of Premorbid Functioning – UK Edition, Wechsler Adult Intelligence Scale – Fourth UK Edition, Wechsler Memory Scale – Fourth UK Edition, The Graded Naming Test, Delis-Kaplan
Executive Functioning System, Repeatable Battery for the Assessment of Neuropsychological Status, General Anxiety Disorder 7 and Geriatric Depression Scale. Additionally within the Memory Assessment Service, I co-facilitated a Cognitive Stimulation Therapy Group for people who had already been given a diagnosis of a dementia. In a mental health service for older adults I undertook therapy with an individual with agoraphobia, and also with another person who was struggling do adapt to a family member’s cognitive decline. These interventions drew on systemic, narrative and cognitive behavioural approaches, and also involved an element of reflecting on the cases psychodynamically, thinking about relationship patterns and defences within therapy. Another part of this placement was spent designing, introducing and reporting on a team formulation group with a care home in-reach service, drawing strongly on The Newcastle Model.

**Year 3, Health - Psychological Medicine Service**

This placement was based in an acute hospital and involved working with people who were struggling to cope with a physical illness. I worked with individuals who had chronic pain, anxiety related to a heart condition, difficulty managing diabetes, were facing a future of physical deterioration and were adapting to having had cancer. My approach to therapy with these clients was influenced by CBT, mindfulness and ACT. Additionally, I undertook a neuropsychological assessment with a gentleman who had had a stroke, to better understand his strengths and difficulties when returning to work. As part of the placement I also delivered training to newly qualified nurses about maintaining resilience in the NHS.
PSYCHD CLINICAL PSYCHOLOGY

Tables of Academic Assignments
# Year I Assessments

<table>
<thead>
<tr>
<th>Programme Component</th>
<th>Title of Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of Theory and Practice in Clinical Psychology</td>
<td>Short report of WAIS-III data and practice administration</td>
</tr>
<tr>
<td>Research – SRRP</td>
<td>Evaluating group-based treatments at The Community Therapy Service: what factors do service users believe facilitate group membership and how can we better support people to attend?</td>
</tr>
<tr>
<td>Practice case report</td>
<td>Assessment and formulation with a young lady experiencing symptoms of panic within the context of an existing diagnosis of schizophrenia.</td>
</tr>
<tr>
<td>Problem Based Learning – Reflective Account</td>
<td>The relationship to change.</td>
</tr>
<tr>
<td>Research – Literature Review</td>
<td>What is understood about the role of dissociation in obsessions and compulsions? A systematic review of the literature.</td>
</tr>
<tr>
<td>Adult Case Report</td>
<td>Cognitive-behavioural therapy with a young man experiencing obsessive-compulsive disorder.</td>
</tr>
<tr>
<td>Adult Case Report</td>
<td>Cognitive-behavioural therapy and systemic thinking with a middle-aged lady experiencing paranoid ideas and low self-esteem.</td>
</tr>
<tr>
<td>Research – Qualitative Research Project</td>
<td>‘If you don’t stop crying, I’ll give you something to cry about’: Exploring adults’ experiences of being smacked as children and future intent to smack.</td>
</tr>
</tbody>
</table>
## Year II Assessments

<table>
<thead>
<tr>
<th>PROGRAMME COMPONENT</th>
<th>TITLE OF ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>Research Methods and Statistics test</td>
</tr>
<tr>
<td>Professional Issues Essay</td>
<td>The Kings Fund published - ‘Leadership and engagement for improvement in the NHS: Together we can’ (2012). What role can the clinical psychology profession make in effecting change and how might this contribution be received by other managerial professional groups?</td>
</tr>
<tr>
<td>Problem Based Learning – Reflective Account</td>
<td>A reflective account of a problem based learning exercise considering issues of difference and diversity in a child protection case.</td>
</tr>
<tr>
<td>Child and Family Case Report</td>
<td>Systemic and narrative work with a 14 year old boy referred for help with anger and behavioural problems.</td>
</tr>
<tr>
<td>Personal and Professional Learning Discussion Groups – Process Account</td>
<td>A process account of personal and professional learning and development group activity over two years.</td>
</tr>
<tr>
<td>People with Learning Disabilities – Oral Presentation of Clinical Activity</td>
<td>Developing skills in working psychologically with teams.</td>
</tr>
</tbody>
</table>
### Year III Assessments

<table>
<thead>
<tr>
<th><strong>PROGRAMME COMPONENT</strong></th>
<th><strong>ASSESSMENT TITLE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Research – MRP Portfolio</td>
<td>The relationship between dissociation, susceptibility to doubt and obsessive-compulsiveness.</td>
</tr>
<tr>
<td>Personal and Professional Learning – Final Reflective Account</td>
<td>On becoming a clinical psychologist: a retrospective, developmental, reflective account of the experience of training</td>
</tr>
<tr>
<td>Older People Case Report</td>
<td>A neuropsychology assessment with a lady in her eighties with a suspected dementia.</td>
</tr>
</tbody>
</table>