

**Dissimulation strategies on neuropsychological tests:  
A qualitative investigation**

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## ABSTRACT

People are known to feign or exaggerate symptoms of cognitive impairment for a wide range of reasons, such as for financial gain or avoidance of criminal responsibility. With £5.2 million paid out daily in compensation claims (Association of British Insurers, 2011), it is important that neuropsychologists have as much information as possible at their disposal for detecting unworthy claims. This study investigates the strategies employed by individuals attempting to feign cognitive impairment on standard neuropsychological tests. A review of the literature revealed that most previous studies in the area of malingering neuropsychological deficits have focused on developing and validating measures to detect falsification of symptoms or poor performance on standard tests. The only qualitative study published in this area investigated strategies employed by individuals feigning memory impairment (Iverson, 1995). Iverson (1995) used questionnaires and brief interviews, subjected to a simple content analysis. The present research constitutes a more thorough and in-depth qualitative study than any that have been previously disseminated in this area. Detailed semi-structured interviews were administered to 15 non-neurological individuals instructed to feign cognitive impairment on a battery of standard neuropsychological tests. The interviews examined both the strategies used and the thinking underlying participants' choices to achieve a richer and more detailed understanding of the phenomena of feigning. Thematic Analysis revealed three main organising themes. Participants described *Using Strategies*, on specific tests and generally across the battery, offered explanations of the *Rationale* behind their decisions and spontaneously commented on their *Experience of the Task*. The findings of the present study reveal numerous potentially useful identifiers of feigning strategies, including many not previously reported. The resulting themes point to the development of more effective methods for detecting feigned cognitive impairments and could have a significant impact on the way that neuropsychological testing sessions are conducted.

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# 1. INTRODUCTION

## 1.1 Overview

For hundreds of years, people have been known to fabricate or exaggerate symptoms of both physical and intellectual impairments for a wide range of reasons (Lipian & Mills, 2005). Research in the area of illness deception has become particularly significant with the litigious nature of society today. This is best demonstrated by the availability of a substantial body of literature. A significant subset of that literature is concerned with feigning neurocognitive and psychiatric disorders and the associated methods that psychologists use for testing the validity of such presentations. Due to the widening availability of measuring instruments and judicious coaching, it is becoming increasingly difficult for clinicians to discern whether the 'injured' party is genuine using traditional methods. A potentially useful response to this difficulty may therefore be to refocus our attention towards gaining more detailed information from those who have attempted to deceive about the particular strategies they have employed.

This thesis will aim to extend the knowledge of clinical psychology in the detection of illness deception by examining in detail the strategies used by test participants attempting to feign cognitive impairment. In the first chapter, the area of illness deception will be introduced within its historical context, with definitions of the terms used to describe the phenomena. An overview of the different forms of illness deception relevant to the field of neuropsychology will be presented, followed by an examination of the methodologies commonly used to detect it. The clinical implications and rationale for the present study will be outlined and a literature review will provide a comprehensive and critical overview of the available research in the area of strategies employed by those simulating cognitive impairment.

Chapter 2 (Method) will provide a detailed description of the design and procedure employed in the present study and the rationale for the choices made. The researcher's epistemological position will be outlined, as will the specific methods chosen for recruitment, data collection and analysis, along with consideration of the associated ethical issues. The resulting themes will be presented and discussed in the light of the available literature in Chapter 3 (Analysis and Discussion). Finally, consideration of the relevance of these outcomes to the profession of clinical psychology and, in particular, to the practice of neuropsychology will be presented in the concluding Chapter 4.

## **1.2 Definitions and Terms**

Discussion of dissimulation relies on complex conceptual issues and focuses on particular behaviours that distinguish dissimulation from other seemingly similar presentations. It is helpful, therefore, to precede any discussion of the research in this area by explicitly defining the relevant terms.

### **1.2.1 Dissimulation**

Dissimulation is a form of deception in which one intentionally acts to conceal one's true state, in order to gain some advantage. Often referred to as *feigning* or *faking*, dissimulation can be both positive (faking good) and negative (faking bad). People frequently fake good in everyday situations to increase their chances of getting a job or finding a mate (Bagby, Gillis, Toner & Goldberg, 1991). In the legal arena, successful positive dissimulation can have an important impact on decisions relating to parole, child custody, and criminal sentencing. In the field of medicine, faking bad is more common and heterogeneous than faking good, as it encompasses feigning and exaggerating a wide range of physical and mental health conditions (Lanyon, 1996). DSM-IV presents two types of dissimulation, malingering and factitious disorder, differentiated by whether the intention to deceive is motivated by internal or external incentives (The American Psychiatric Association, 2000).

### 1.2.2 Malingering

The American Psychiatric Association (APA; 2000) defines malingering as 'The intentional production of false or grossly exaggerated physical or psychological symptoms motivated by external incentives...' (p. 739).

Malingering can describe situations where people create the impression of a more serious form of their condition, those in which people extend the symptoms back to the time of an event and those where people fabricate symptoms entirely. This behaviour is motivated by external incentives, such as financial gain or avoidance of unpleasant responsibilities.

### 1.2.3 Factitious disorders

Factitious disorders are defined as a subset of malingering, in which the fabrication or exaggeration of symptoms is motivated by internal gains, such as the attention and nurturance afforded by the sick role (APA, 2000).

Munchausen Syndrome is a severe form of factitious disorder in which the main motivation is to gain attention and comfort, often through repeated hospital admissions (Feldman, 2004). In Munchausen Syndrome by Proxy, a caregiver creates or feigns symptoms in another, often a child, to gain sympathy and attention for themselves.

### 1.2.4 Somatoform disorders

DSM-IV defines other disorders in which false or exaggerated symptom production is unintentional. These, Somatoform, disorders are diagnosed when symptoms that suggest physical illness cannot be explained by medical investigation and are not attributable to another psychiatric disorder, such as anxiety or depression (APA, 2000). Symptoms tend to be chronic and applied to multiple areas of the body. Conversion disorder is a somatoform disorder involving actual loss of bodily functions, usually focused on a single bodily area, such as numbness, blindness, paralysis, and seizures, without neurological explanation. Both DSM-IV (APA, 2000) and ICD-10 (WHO, 1992) definitions of conversion disorder agree that there should be a convincing

association between the production of symptoms and preceding stressors, traumatic events or unmet psychological needs. Stemming from Freud's idea of 'hysteria', symptoms are assumed to be produced in response to difficulties in a person's life. Previous versions of the DSM have used psychodynamic concepts, such as internal conflict, to explain conversion disorder but these ideas have fallen out of favour in recent times (e.g. Webster, 2005).

Malingering and Factitious disorders are distinguished from Somatoform and Conversion disorders by the presence of conscious motivation to deceive. However, this distinction can become blurred when self-deception leads people to become so involved in their malingered sick role that they may lose sight of their conscious motivations. Indeed, laboratory studies using non-clinical samples have found that intentional feigning can produce a residual effect of unconscious false symptom endorsement in the future (Merckelbach, Jelicic & Pieters, 2011).

The present study will focus only on dissimulation that is motivated by internal or external gains, rather than unintentional forms of false symptom production motivated by unconscious factors, as described above.

### **1.3 Historical Background**

Examples of malingered illness and feigned madness can be found within texts as old as the Bible (e.g. Lipian & Mills, 2005), and can be assumed to pre-date the written word itself. However, disease deception did not enter the medical arena until the late nineteenth and early twentieth century. Following the industrial revolution, new legislative actions in North America and Western Europe increased medical interest in disease deception and provoked a steady stream of articles on the subject from the late 1880s onwards. Legislation, such as the 1884 Accident Insurance Law and the Disability Insurance Act of 1889 in Germany, began the introduction of progressive social legislation to protect the disadvantaged (Craig, 1978). Other industrialised countries soon followed and similar legislation, in the form of the

Workmen's Compensation Act (1908) in the USA and the National Insurance Act (1911) in Britain, marking the beginning of the Welfare State.

Physicians, who now played a key role in assessing claims under these new Acts of Parliament, were warned that workers now had more incentive than ever to exaggerate their injuries and would do so in greater numbers (Barnett, 1909). Workers using the new legislation to defraud insurance boards and evade their social obligation to work posed a threat to the culture of industrialisation and physicians became responsible for upholding the rights and resources of the state against deception (Eghigian, 2000). In his new role as detective of disease deception, with little else to guide him, the physician had to rely on his intuition to determine the worthy from the fraudulent cases.

The advent of the First World War turned detection of malingering from a moral and economic issue to a patriotic one. Deliberate avoidance of military service, by depriving the armed forces of valuable manpower, threatened the survival of the nation itself. Conscripts went to considerable and dangerous lengths to simulate or contract disease or injury to avoid the trenches (Bourke, 1996). Physicians' intuition was no longer adequate and new technologies, such as x-rays began to be used to detect the presence or absence of disease pathology (Cooter, 1998). Although advances in medical science made it more difficult to feign physical injury, the invisible impact of war was to be the greatest challenge to medical thinking. New conditions emerged that blurred the boundaries between real and feigned illness. Doctors were increasingly confronted with inexplicable signs and symptoms that could equally be a manifestation of occult brain injury, psychological reactions to trauma, or a conscious attempt to avoid one's duty (Cooter, 1998). Definitions and observations of malingering were confused and disjointed but in 1922, the Shell-shock Committee defined three basic types of malingering; true, partial, and quasi-malingering<sup>1</sup> (HMSO, 1922).

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<sup>1</sup> True malingering was the action of one who deliberately attempts to pretend to be suffering from 'shell shock'. Partial Malingering was the exaggeration of symptoms or prolongation of a condition no longer remaining. Quasi malingering included those who with little or no pretence decamped from battle as opportunity arose, excusing themselves by pleading 'shell shock'.

By 1939, the stigma associated with failing as a soldier had considerably decreased and the punishment was less severe. During the Second World War, officers frequently tried to rid themselves of unenthusiastic recruits through psychiatric channels (Shephard, 1999). Between 1943 and 1945, mental disorders accounted for 35% to 41% of medical discharges (Mellor, 1972). Mental illness currently carries far less stigma than at any time in the past and is, therefore, a more attractive option for malingerers. According to Carroll (2001), feigning psychological problems such as Post Traumatic Stress Disorder (PTSD) is now extremely common. Although prevalence estimates are difficult to find, one U.S. study reported that 25% of benefit claimants for combat related PTSD have never been in combat, suggesting those claims may be false (Office of the Inspector General, 2005).

Whilst relevant legislation had been in place through most of the twentieth century, the Thatcherite policies of the 1980s transformed the social context in which that legislation operated. Heavy industry was minimised, putting entire communities out of work, while greater accountability and efficiency were demanded of the public sector, forcing frequent restructuring and post-hoc evaluation (Robinson, 2003). While white and blue collar workers struggled, the salaries of higher management soared. By the year 2000, the average salary of Chief Executive Officers of the top 100 companies in the UK was £950,000 with additional bonuses and retirement benefits (Robinson, 2003). These kinds of situations have most likely contributed to the creation of a sub-culture in society that sympathises with and even supports attempts to redress the balance by dishonest means. Public opinion polls in the U.S. have repeatedly found that many people endorse fraudulent behaviour in certain circumstances (e.g. Insurance Fraud Prevention Authority, 2002) and, in the U.K., the Association of British Insurers survey found that not only had 47% of respondents considered making a fraudulent insurance claim but that they considered this behaviour little different from stealing towels from a hotel bathroom (Hunter, 2003).

In today's society, people are known to feign or exaggerate symptoms of neuropsychological impairment for a wide range of reasons. One reason, for example, for people to attempt to feign impairment in a civil setting is in pursuance of financial gain through compensation. According to the Association of British Insurers, £5.2 million is paid out daily in compensation claims for accidents at work, professional indemnity, and injuries to the public on commercial premises (Association of British Insurers, 2011). In forensic settings, reasons for attempting to feign or exaggerate impairment are influenced by the leniency afforded by the law to those it considers less blameworthy. Demonstrating that the perpetrator of a crime is cognitively impaired for example, might lead a jury to believe him or her to be less responsible and a judge to impose a lighter sentence. In countries where capital punishment is still in force, this can literally mean the difference between life and death. Indeed, in 2002 a law was passed in the U.S. state of Virginia prohibiting the execution of 'mentally retarded people', providing strong motivation for people facing execution to demonstrate cognitive impairment to avoid the death penalty (Grane et al., 2007).

## **1.4 Current Situation and Clinical Relevance**

### **1.4.1 Forms of feigning**

Feigning symptoms of injury or impairment can take many forms. While it is possible to feign or exaggerate almost any disorder, the most commonly faked categories of complaint are disorders that cannot be objectively evaluated, such as mental retardation, dementia, post traumatic symptoms, psychosis, amnesia, and cognitive impairment. Individuals can learn how to fake symptoms of any of these categories using information freely available on the Internet. At a basic level, one can view numerous web sites that advise young people on how they can fake physical injuries to avoid unpleasant activities such as going to school. At the most serious level, clients can be 'coached' in the production of false symptomology in order to successfully claim compensation, disability benefits or evade criminal responsibility. Indeed,

even clinicians have been found to engage in deception to gain benefits for their patients (Wynia, Cummins, VanGeest & Wilson, 2000).

#### 1.4.2 Psychiatric disorders

The best known demonstration of the ease with which psychiatric complaints could be faked was when Rosenhan and colleagues feigned symptoms of psychosis, received diagnoses of Schizophrenia and were admitted to various psychiatric hospitals in the U.S. (Rosenhan, 1973). It is notoriously difficult to distinguish malingered from genuine psychiatric 'illness', particularly as the diagnostic dimension of 'clinically significant distress' (APA, 2000) can only be determined by the sufferer. Further, psychiatric drugs are often prescribed for conditions with no underlying biological basis and which cannot be objectively investigated (Moncrieff, 2009). Therefore, faking psychiatric conditions can generate prescriptions for drugs that can be taken or sold for recreational use. A diagnosis of Attention Deficit Hyperactivity Disorder (ADHD), for example, usually leads to the prescription of stimulants, which are used by healthy adults and children to artificially increase energy, academic performance, and athletic ability (Sansone & Sansone, 2011).

MacNeil and Holden (2006) investigated whether psychopathic personality traits influence a person's ability to successfully fake on self-report measures. They found that while successful faking was not consistently related to psychopathy in general, people who were able to successfully fake good scored more highly on Machiavellian egocentricity and blame externalisation.

#### 1.4.3 Neurocognitive impairment

Subjective complaints of cognitive impairment (e.g. memory or concentration problems) are usually investigated using neuropsychological testing. In the clinical setting, poor performance on such tests is interpreted as a manifestation of cognitive dysfunction (Lezak, 1995). However, in criminal or civil (compensation seeking) cases, where exaggeration or fabrication of complaints might lead to personal gain, this interpretation is not so

straightforward. Memory deficits are by far the most commonly feigned neurocognitive impairment as they cannot be objectively evaluated (Van Oorsouw & Merckelbach, 2009). Brain injury charities and law firms frequently provide lists of symptoms of cognitive impairment that can be used as a guide by individuals attempting to fake poor performance on neuropsychological tests. This study will focus on individuals feigning symptoms in the particular area of neurocognitive impairment.

The most commonly feigned or exaggerated neurocognitive symptoms are related to mild Traumatic Brain Injury (TBI), in which there is no objective evidence of the injury itself. Prevalence estimates vary widely depending on the research sample and symptom validity tests used, amongst other factors. A poll of certified neuropsychologists (Mittenberg, Patton, Canyock & Condit, 2002) suggested that approximately 9% of claimants seeking compensation for moderate or severe head injury, and as many as 41% of those seeking compensation for mild head injury, feign neurocognitive deficits. Miller (1961) observed that many litigants were able to return to work after receiving financial compensation. The growing realisation that so many people feign symptoms of cognitive impairment in civil and forensic settings has led to neuropsychologists frequently being asked to attend court proceedings, as expert witnesses, to give their opinion of whether a claimant or defendant is malingering. Approximately 94% of neuropsychologists in private practice report having been involved in personal injury evaluations of brain-injury cases (Essig, Mittenberg, Petersen, Strauman & Cooper, 2001). It is therefore, important that neuropsychologists have as much knowledge and as many instruments at their disposal as possible to help them to determine the malingered from the genuine cases. Additionally, knowing more about the thought processes and strategies used by those attempting to feign cognitive impairment may be helpful.

Discussion of feigning in children brings with it a different set of concerns. Falsification or exaggeration of symptoms in children has received scant attention in the literature and is usually categorised as psychosomatic rather than deceptive, as intent is a very difficult concept to unravel (Libow, 2000). In

cases of Munchausen Syndrome by Proxy (see above), gradual collusion of an exploited child with the fabricating parent and the reinforcement of the benefits of the sick role can lead to a 'blended' scenario of falsification by both parties (Libow, 2002).

To circumvent the difficulties associated with studying illness deception in children, the present study will focus on investigating the strategies and thought processes employed by adults who are attempting to fake symptoms most commonly associated with mild TBI.

## **1.5 Means of Detection of Dissimulation**

### 1.5.1 Observation

One method commonly used to detect malingering of cognitive difficulties is to ask a qualified neuropsychologist to make an observation of the patient and provide an expert opinion on whether the individual is faking or exaggerating their symptoms. Proficiency among practitioners in their ability to accurately detect feigning is known to vary widely, suggesting that specific training should be undertaken in this area (Rubenzer, 2006). Studies generally show that clinicians perform at chance to slightly above chance level when asked to detect neuropsychological malingering (e.g. Heaton, Smith, Lehman & Vogt, 1978; Ziskin & Faust, 1988).

Another way to identify malingering patients is by noticing life-test discrepancies. Evaluators must notice discrepancies between the person's self-reported symptoms and their behaviour (Conroy & Kwartner, 2006). For example, a clinician may observe that a person's behaviour in between tests contradicts their test performance or the subjective difficulties they reported during the preceding clinical interview.

Millis and Putnam (1996) suggest three factors that could limit the detection of malingering by clinical judgement alone:

1. The difficulty of identifying distortions in responses by examining neuropsychological test data.
2. Attribution errors and confirmatory biases that might result in over or under diagnosis of malingering.
3. Having established a rapport with the client, clinicians might overestimate their capacity to identify malingerers.

Due to the limitation of the sole use of observations to identify malingering, a number of Neuropsychological Instruments have been developed to enhance detection.

#### 1.5.2 Stand alone neuropsychological tests of effort

Examinees must put forward their best 'effort' during cognitive testing, meaning that they must try to perform to the best of their ability, for inferences about brain function to be made. In recent years, neuropsychologists have developed a variety of dedicated tests to detect deliberate underperformance. The majority of these tests operate on the principle that genuinely cognitively impaired people will perform at least at the level of chance; the score a person would achieve using guesswork, usually around 50%. Often a genuine neurological sample will perform perfectly on some tasks. Iverson (2006) suggests that below chance performance on forced choice questions indicates that a person has deliberately chosen the wrong answers and, therefore, knew the correct ones.

The Amsterdam Short Term Memory test (ASTM; Schagen, Schmand, De Sterke & Lindeboom, 1997) is one such example of a test that addresses claims of poor memory by measuring effort. Most brain damaged patients perform at almost 100% accuracy on this test (Schagen et al., 1997). The ASTM attempts to identify implausible performance (e.g. performance below that of a severely neurologically impaired sample) and is available in numerous languages. A study of the ASTM compared patients with Closed Head Injury (CHI) with normal controls and a feigning group (Schagen et al., 1997). The results suggest that the ASTM may be very useful for the detection

of malingering and suboptimal performance. The ASTM was tested again by Jelacic, Merckelbach, Candel, and Geraerts (2007), using students as controls, instructed malingerers or coached malingerers. The finding that only 70% of the coached malingerers were detected suggests that coaching undermines the diagnostic accuracy of the ASTM.

Other standardised tests of effort and response bias in the memory domain include the Word Memory Test (WMT; Green, Lees-Haley & Allen, 2002), the Rey 15-item Memory Test (RMT; Boone, Salaza, Lu, Warner-Chacon & Razani, 2002), the Structured Inventory of Malingered Symptomology (SIMS; Widows & Smith, 2005), and the Test of Memory Malingered (TOMM; Tombaugh, 1997), which all enjoy a strong evidence base (e.g. Rienstra, Spaan & Schmand, 2009; Reznek, 2005; Den Boer & Hall, 2007).

Reznek (2005) conducted a meta-analysis of the Rey 15-item Memory Test for malingering (RMT). Reznek found that it should only be used with those who do not have mental retardation and suggests that the cut-off at seven correct items gives a specificity of greater than 95%. This result gives the RMT a very low sensitivity but would ensure no false positives. Den Boer and Hall (2007) found that significantly more coached than uncoached malingerers scored above the TOMM cut-off scores for adequate effort. Jelacic, Ceunen, Peters and Merckelbach (2011) found that the accuracy of both the TOMM and the Structured Inventory of Malingered Symptomology (SIMS) appeared to be reduced by a mix of symptom and test coaching, but are relatively resistant to other types of coaching. The nonverbal subtest of the Validity Indicator Profile (VIP; Frederick, 1997) demonstrated an overall classification rate of 79.8%, with 73.5% sensitivity and 85.7% specificity. The verbal subtest of the VIP demonstrated an overall classification rate of 75.5%, with 67.3% sensitivity and 83.1% specificity (Frederick & Crosby, 2000). A large clinical sample who underwent nine neuropsychological tests gave a detection rate of 83% sensitivity and 100% specificity (Meyers & Volbrecht, 2003). It was found that many of these tests were not robust to coaching and that combined methods are more suitable than individual tests alone (Brennen, Meyer, David, Pella, Hill & Gouvier, 2009; Kelly, Baker, Van den Broek, Jackson &

Humphries, 2005; Meyers & Volbrecht, 2003; Ord, Boettcher, Greve & Bianchini, 2010a; Rüsseler, Brett, Klaue, Sailer & Münte, 2008).

An overall performance of well below chance, or below the level of a genuine neurological sample, would signify deliberate underachievement. However, an indication of poor effort on a single sub-test from a particular battery might suggest a transient fluctuation in effort and may not indicate malingering. Some researchers express concern that this type of psychometric task can only detect biased responding and malingering should be identified using clinical evaluation (Frederick, Sarfaty, Johnston & Powel, 1994). It has also been suggested that guessing can produce scores that overlap with both low genuine and malingered performances (Flowers, Bolton & Brindle, 2008).

### 1.5.3 Validity of symptom scales

An alternative to the forced-choice tests designed to detect poor effort are tests designed to judge the validity of reported symptoms. These symptom validity tests employ both interviews and questionnaires to detect inconsistencies in symptom reporting, exaggeration of symptoms, and unlikely or absurd symptoms or symptom combinations. One such Symptom Validity Test (SVT) is the Structured Inventory of Malingered Symptomology (SIMS; Widows & Smith, 2005). The SIMS is supported by a promising body of experimental and field studies (e.g. Alwes, Clark, Berry & Granacher, 2006; Vitacco, Rogers, Gabel & Munizza, 2007). However, symptom validity tests are often longer than the batteries themselves, making their inclusion as part of standard neuropsychological testing impractical.

Other tests of validity for both neurological and psychiatric complaints rely on structured interviews, which are more lengthy and complex to administer. The Miller Forensic Assessment of Symptoms Test (M-FAST; Miller, 2001), for example, is a 25-item structured interview including measures of suggestibility, rare symptom combinations, unusual symptom course, extreme symptoms, and observed behaviour. It has been demonstrated that using lower cutting scores on the M-FAST could increase its sensitivity for detecting

malingered PTSD (Guriel et al., 2004; Jackson, Rogers & Sewell, 2005). However, concern has been expressed that this increased sensitivity may also yield decreased specificity. Two further studies found considerable misclassifications (Alwes, Clark, Berry & Granacher, 2008; Vitacco, Rogers, Gabel & Munizza, 2007). Alwes et al. (2008) also felt that the procedure was not as effective when applied to probable neurocognitive feigners versus honest groups and suggests that further study is required to prevent unacceptable levels of misclassification.

The Structured Interview of Reported Symptoms (SIRS; Rogers, Bagby & Dickens, 1992), which was originally developed to assess over-reporting of psychiatric symptoms, has been extended to false reporting of neurocognitive symptoms (Alwes et al., 2006). The SIRS consists of 175 items organised into eight subscales that focus on absurd or unusual symptom combinations, symptom severity and inconsistencies between reported and observed symptoms. The SIRS has been found to have excellent reliability and has therefore been widely adopted in malingering research (Van Oorsouw & Merckelbach, 2009). Green and Rosenfeld (2011) conducted a Meta-Analysis to evaluate the ability of the SIRS to differentiate feigners from genuine responders. This review consisted of 26 studies using the SIRS to identify feigning published between 1990 and 2009. The results of this meta-analysis provide considerable support for the accuracy of the SIRS as a measure of feigned mental disorders. They found that the study results varied considerably among both the forensic and correctional samples indicating that the specificity of the SIRS is lower than that expected since its original publication. The results vary from those reported in the SIRS manual, leaving as many as one in four genuine psychiatric patients and 6% of non-mentally ill offenders being misclassified. This has led to the suggestion that the SIRS should be supported by expert clinical judgement or other multi-scale inventories when making a classification.

Patterns of feeling-of-knowing ratings made by genuine and simulating subjects were found to be similar in several respects but also differed systematically (Schacter, 1986). Tasks that exploit lay-people's inaccurate

beliefs about amnesia were most promising for detection of feigning (Horton, Smith, Barghout & Connolly, 1992; Martin, Franzen & Orey, 1998; Wiggins & Brandt, 1988). Van Oorsouw and Merckelbach (2010) suggest that forensic experts should be more concerned with information about psychological conditions associated with amnesia than relying on a single test to screen for malingering.

The National Academy of Neuropsychology recommends that symptom validity tests should be included in all neuropsychological assessments (Bush et al., 2005). However, as mentioned previously, this is rarely implemented in practice due to the increased administrative burden.

#### 1.5.4 Embedded performance on neuropsychological tests

A more accurate way for neuropsychologists to attempt to distinguish between malingering and true impairment is noticing when patterns of performance on standard neuropsychological tests are inconsistent with our knowledge of brain dysfunction. For example, if short term memory is purported to be intact and long term memory impaired, two tests of recent memory should produce similar results (Hall & Poirier, 2000). Malingering is indicated when patients with mild traumatic brain injuries perform more poorly on tests than patients with well documented structural brain damage. Egeland and Langfjaeran (2007), for example, found that malingerers had low Trail Making Ratios (TMR) and inverted Stroop (Stroop, 1935), whereas impaired participants had high TMR and specific Stroop interference. Fakers may try to distribute their errors evenly throughout tests, not realising that items on some tests, such as the Wechsler Test of Adult Reading (WTAR), increase in difficulty sequentially (Hall & Poirier, 2000).

Measures of performance validity on standard neuropsychological tests can often be calculated directly from previously scored protocols. British Psychological Society (BPS) guidelines for the assessment of effort in neuropsychological testing recommend using particular sub-scales of commonly used batteries to calculate actuarial indicators of suboptimal effort

(BPS, 2009). The BPS recommends using the Effort Index (EI) of the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) developed and validated by Silverberg, Wertheimer, and Fichtenberg (2007). The EI involves converting raw scores from the Digit Span and List Recognition subsets of the RBANS into weighted scores and aggregating them. A score of less than three would be rare in the general population and should, therefore, be considered suspicious. However, Silverberg and colleagues issue a caveat that their RBANS effort index is more adept at detecting malingering in the simulating rather than the clinical population and its ability is attenuated by coaching.

Standard neuropsychological tests are intrinsically vulnerable to malingering behaviour because what is required for a bad performance is relatively obvious (e.g. work slowly, make errors). Some standard neuropsychological tests include measures of suboptimal effort to help in the detection of malingering. For example, simulators will often perform more poorly than genuine neurological patients on the Digit Span subscale of the Wechsler Memory Scale (WMS-III). They mistakenly believe the test is measuring memory, rather than attention and concentration (Axelrod, Fichtenberg, Millis & Wertheimer, 2006; Mittenberg, Azrin, Millsaps & Heilbronner, 1993).

The Wechsler scales are helpful for validity testing because they include subtests used in many psychological examinations. For example, using the Reliable Digit Span sub test of the Wechsler Adult Intelligence Scale (WAIS) has been found to provide generally good specificity when aggregating the longest forwards and backwards string in which both trials are passed and comparing it to the cut off score of seven (Greiffenstein, Baker & Gola, 1994; Larabee, 2007). However, this method has met with mixed success in clinical trials and should, therefore, be interpreted with caution (e.g. Babikian, Boone, Lu & Arnold, 2006; Heinly, Greve & Bianchini, 2005). Declines of more than 24 points on Wechsler tests of verbal IQ are rarely seen, except in cases of very severe TBI (Greve, Lotz & Bianchini, 2008). However, the potential for using this information to detect malingering is limited as pre-morbid IQ scores are rarely available for comparison. Jasinski, Berry, Shandera, and Clark

(2011) conducted a meta-analytic review of twenty-four studies utilizing the WAIS Digit Span subtest scale (RDS or DS-ACSS) to evaluate their effectiveness in detecting malingered neurocognitive dysfunction. They found no significant differences between RDS and DS-ACSS in discriminating dissimulators from honest responders. No differences were found between the Digit Span subtest from the WAIS or the WMS. The review provides evidence to support the use of the Digit Span sub test to detect malingering of neurocognitive dysfunction. Further research is suggested focussing on investigating the full range of cutting scores and associated sensitivity and specificity.

A study employing the California Verbal Learning Test (CVLT) found that malingerers often overestimate memory impairment associated with mild head injury (Coleman, Rapport, Millis, Ricker & Farchione, 1998). However, exposure to a simple instructional set appeared to render many indices of malingering insensitive. Below chance performance on standard neurocognitive tests is regarded as a relatively secure method of detecting malingering (Slick, Sherman & Iverson, 1999). However, the discriminatory ability of non-memory tasks, such as confrontation naming (Backhaus, Fichtenberg & Hanks, 2004) and line orientation (Iverson, 2001) have yielded disappointing results, while recall of prose passages and geometric figures has scarcely been examined in the literature (Silverberg, Wertheimer & Fichtenberg, 2007).

Obviously, performance on a single sub-scale cannot be taken in isolation to be an indicator of malingering. Standard neuropsychological tests are affected by actual ability more than specifically designed tests of validity and these tests can be successfully malingered with a little research or coaching. Therefore, any single set of cutting scores should only be considered in relation to other validity measures, and within the context of the case history and presentation as well as demographic variables, such as level of education (Lezak, Howieson, Bigler & Tranel, 2012).

### 1.5.5 Recommendations

Malingering has serious negative consequences for the NHS, for malingerers themselves, and for society in general. Within the NHS, time and resources are often wasted on malingerers, making it more difficult for those in genuine need to access appropriate resources. Malingerers themselves, who may have initially benefited from monetary reward or time off work, can ultimately become trapped in a downward spiral of inactivity and isolation, which can lead to depression (Beck, Rush, Shaw & Emery, 1979). In extreme cases, the residual effects of intentional faking can turn the malingered sick role into a reality (Merckelbach, Jelicic & Pieters, 2011). Lengthy periods of illegitimate paid sick leave put employers under financial strain and co-workers, who are frequently forced to provide cover, under physical and psychological pressure. At a societal level, fraudulent compensation claims not only drain the public purse but increase taxes and insurance premiums for all individuals in society.

It has been shown that the validity of most tests of malingering can be compromised by the availability of knowledge about their procedures (e.g. coaching or Internet based research) (Ruiz, Drake, Glass, Marcotte & Van Gorp, 2002). For this reason, some researchers (e.g. Giger, Merten, Merckelbach & Oswald, 2012) advocate a multi-method approach, administering several measures of effort, symptom validity, and observation; a method that has proven more difficult for coached malingerers to exploit (Gorny & Merten, 2005). The British Psychological Society (BPS) and American Academy of Clinical Neuropsychology (AACN) have published guidelines to aid practitioners in the detection of malingering. They both conceptualise 'effort' on a continuum.

The American Academy of Clinical Neuropsychology (AACN) has issued a consensus statement providing recommendations for good practice in the measurement of effort, response bias, and neuropsychological malingering (Heilbronner, Sweet, Morgan, Larrabee & Millis, 2009). The AACN guidelines state that psychometric measures are the most valid indicator of performance validity and that both stand-alone and embedded validity indicators should be

employed. While life-test discrepancy observations should be considered only alongside psychometrics with proven validity, discrepancies between test results and known patterns of performance for particular medical conditions should raise immediate concern. Validity measures should be distributed throughout testing to overcome variation in levels of effort. The clinician should be aware that if the characteristics of the examinee are not well matched with the normative sample used to validate the effort test, the clinician should select alternative measures and adjust conclusions accordingly. Finally, clinicians should consider the potential influence of mood disorders, such as anxiety and depression, when assessing poor effort and response bias.

Around the same time, the British Psychological Society (BPS) published its own guidelines for the assessment of effort in the clinical testing of cognitive functioning in adults (BPS, 2009). The BPS acknowledge that the diversity of practice settings and range of client groups makes the kind of mandatory effort testing strongly endorsed in the U.S. problematic in the U.K. They recommend the calculation of various effort indices from sub-set scores on standard neuropsychological tests. The BPS also recommends careful consideration of the usefulness of effort measures, especially with clients affected by sensory or motor impairment, psychiatric illness, learning disabilities, and dementia. They suggest that Malingering should only be identified in the presence of evidence of an intention to deceive. The BPS recommends gathering information from a variety of sources including previous testing sessions, effort tests, symptom validity tests, clinical history, and occupational background, when considering motivation to deceive. They recommend warning examinees that effort tests are to be included in the battery and raising issues of insufficient effort as it occurs. The BPS and AACN both emphasise the importance of thorough and detailed reporting, particularly in relation to effort testing. They both also explicitly recommend withholding the specific details of the effort tests employed to protect the security of the tests, reducing their vulnerability to coaching.

As discussed above, both the BPS and AACN recommend the use of embedded measures of performance validity on standard neuropsychological tests. Therefore, this study will concentrate on strategies and how they are used by those attempting to feign cognitive impairments on measures embedded within standard neuropsychological test batteries. Such tests are widely and reliably available, are commonly employed for research in this area, and are those recommended by the BPS for use in the U.K.

## **1.6 Review of Existing Literature**

A systematic search for all publications relevant to strategies for dissimulation on neuropsychological tests was performed using EBSCO, PsychInfo, PsychArticles, PubMed, Academic Search Complete, Science Citation Index, CINAHL, and Cochrane Library databases. Additional materials were identified from the reference indices of the papers discovered through automated searching and relevant reference books were also consulted. Advice on relevant articles for this research was also sought from the academic supervisor (see Table 1).

The following search terms were used; malingering, feigning, faking, dissimulation, effort index, test validity, simulated injury, disease deception, brain injury, cognitive impairment, neuropsychological impairment, neurocognitive deficit, and strategy. The terms used for the initial searches were combined to narrow down the result set and yield studies relevant to the study of dissimulation strategies. These terms were considered to be the most commonly used key words for describing research concerning detection of feigning and strategies for simulating cognitive impairment. The terms physical health and physical disability were not included as this study is solely concerned with feigning cognitive impairment, rather than other types of illness or impairment. To avoid omitting any major information it was not considered necessary to confine the searches to specific years.

Papers were selected according to their relevance to feigning, detection and simulation strategies in relation to cognitive impairment. Studies in which children are examined were excluded, as this research concentrates only on the feigning ability of adults. The papers found were analysed according to their relevance to the present study.

Although a number of related publications were identified (see below), only seven studies fulfilled my search criteria, concerning strategies used by participants when feigning cognitive impairment. There were no overarching reviews concerning strategies for malingering.

**Table 1 – Summary of search results by database**

Database	Search Terms (Combined)	Results (Total)	Relevant Studies
Academic Search Complete	Search Number 1 Malingering OR feigning OR faking OR dissimulation OR effort index OR test validity	498,358	-
British Library Document Supply Centre Inside Serials & Conference Proceedings		3,836	-
Business Source Complete		294,549	-
CINAHL		33,933	-
Communication & Mass Media Complete		1,771	-
eBook Collection (EBSCOhost)		23,383	-
MEDLINE		29,661	-
PsycARTICLES		40,185	-
PsycBOOKS		21,700	-
PsycINFO		79,687	-
Science Citation Index		33,959	-
Social Sciences Citation Index		21,024	-
SPORTDiscus		51,516	-
UK & Ireland Reference Centre		35,426	-
Academic Search Complete	Search Number 2 Simulated injury OR disease deception OR brain injury OR cognitive impairment OR neurocognitive deficit OR neuropsychological impairment	248,921	-
British Library Document Supply Centre Inside Serials & Conference Proceedings		24,961	-
Business Source Complete		23,856	-
CINAHL		17,335	-
MEDLINE		89,982	-
PsycARTICLES		14,973	-
PsycINFO		53,692	-
Science Citation Index		101,410	-
Social Sciences Citation Index		30,142	-
SPORTDiscus with Full Text		27,550	-
UK & Ireland Reference Centre		31,617	-
Academic Search Complete	Search Number 1 AND Search Number 2 AND Strategy combined	780	(i) (iii) (iv) (v) (vi)
British Library Document Supply Centre Inside Serials & Conference Proceedings		32	(i) (iii) (iv) (v) (vii)
Business Source Complete		69	-
CINAHL		7	-
Communication & Mass Media Complete		34	-
MEDLINE		22	(i) (iii) (iv) (v) (vi) (vii)
PsycARTICLES		169	0
PsycBOOKS		28	0
PsycINFO		69	(i)(iii) (iv) (v) (vi) (vii)
Science Citation Index		96	(iii) (iv) (v) (vii)
Social Sciences Citation Index		93	(iii) (iv) (v) (vii)
SPORTDiscus		144	-
UK & Ireland Reference Centre		3	-
Cochrane Library	No relevant studies		
From reference indices	1	(ii)	

### 1.6.1 Research concerning dissimulation and test instruments

There is a large body of research concerning malingering of head injury using neuropsychological test instruments and tests of malingering. This research is focused mainly on determining which measures perform best at detecting malingering of cognitive impairment. As real life malingerers rarely acknowledge their deception, research in this area circumvents this problem with two commonly used designs. Most research in this area is conducted using simulators (participants from the normal population who are asked to try to simulate or fake cognitive impairment) and comparing their results to those of genuine neurological patients. This *analogue* method demonstrates high internal validity (Lezak et al., 2012). However, the research is often limited by the sole use of college students as simulators, the administration of validity tests outside the context of a test battery, and the fact that participants have little incentive to malingering effectively. Therefore, simulator designs tend to overestimate the sensitivity of tests of malingering when used on a clinical population (Vickery, Berry & Inman, 2001). The second commonly used method employs two groups, one of genuine neurological patients and the other of suspected malingerers from a clinical sample. The main difficulty with this *known groups* design is that participants tend to be those patients exhibiting extreme symptoms and test performance patterns. Therefore, tests validated using this design tend not to be so sensitive to more subtle response distortions.

Much research has been devoted to addressing the validity of specifically designed Symptoms Validity Tests (SVTs), with various levels of success. The Test of Memory Malingering (TOMM), for example, has been shown to be relatively insensitive to genuine memory impairment, while detecting 90% of feigned memory deficits, and remains highly respected (Tombaugh, 1997). The Portland Digit Recognition Test (PDRT; Binder 1993), on the other hand, has been found to miss between 67% and 84% of potential malingerers (Ju & Verney, 2000) and to be more vulnerable to the effects of coaching than other tests (Brennen et al., 2009). Hart (1995) concludes that some of these measures are too simplistic to detect malingering reliably, while others

incorrectly identify genuine TBI patients as malingering. There is a general consensus that a combination of tests to measure over-endorsement of symptoms and sub-optimal performance in several domains is the most reliable strategy for detecting malingered cognitive impairment (Oorsouw & Merckelbach, 2010).

In a known groups design, Curtis, Greve and Bianchini (2009) found that the Digit Span subset of the WAIS-III failed to distinguish accurately between malingerers and non-malingerers. On the other hand, in a simulation design, Vickery and colleagues found that tests of malingering, such as the Digit Memory Test (DMT), Letter Memory Test (LMT), and Test of Memory Malingering (TOMM) successfully distinguished brain injured participants from simulators (Vickery et al., 2004).

Blanchard, McGrath, Pogge, and Khadivi (2003) used a simulation design to compare the Minnesota Multiphasic Personality Inventory–2 (MMPI–2; Butcher et al., 2001) and Personality Assessment Inventory (PAI; Morey, 1991) as indicators of over reporting. Both instruments offer a variety of scales designed to identify feigning response styles. Blanchard and colleagues found that while the MMPI-2 is a better identifier of feigning response style, the PAI demonstrates significantly better incremental validity. They conclude that although either inventory offers an effective approach to the detection of over reporting, the MMPI-2 and PAI should be administered together for greater accuracy (Blanchard et al., 2003).

In the comparison made by Sullivan and King (2010), also using a simulation design, the Personality Assessment Inventory (PAI) and the revised Symptom Checklist-90 (SCL-90-R) were assessed for detecting simulated malingering. The PAI was found to be superior, particularly Rogers' Discriminant Function. Overall, results from this study demonstrated the vulnerability of the PAI and SCL-90-R to simulated psychopathology, but they also found the capacity of these measures to detect this when specific indexes were used.

### 1.6.2 Research concerning dissimulation strategies

Very few studies have investigated how people go about feigning cognitive impairments and examining what strategies people use to deliberately perform poorly on neuropsychological tests. Those studies that have been published in this area tend to either make use of subjective observations of strategies (see Goebel, 1989, below), observations of effects (see Suhr, 2002, below), or forced choice questionnaires to elicit participants' own ideas about the strategies they used (see Tan, Slick, Strauss & Hultsch, 2002, below).

Of the seven studies found in the search, five predominantly employed analysis of questionnaires given to participants who had previously attempted to fake bad (i) Den Boer & Hall, 2007; (ii) Freedland, 1982; (iii) Haines & Norris, 2001; (iv) Suhr, 2002; (v) Tan et al., 2002. Overall, these studies found that faking amnesia and performing more slowly were the strategies most widely used (Haines & Norris, 2001; Tan et al., 2002).

Den Boer and Hall (2007), for example, examined the performance characteristics of successful brain injury simulators. Successful simulators were identified from groups of coached and uncoached simulators and a control group using a battery of standard tests, including the TOMM. They also administered a questionnaire to check whether participants followed the instruction to malingering. Successful simulators were those in the coached and uncoached groups whose TOMM scores indicated adequate effort. They observed that coached simulators were the most successful, as their performances on the effort test were generally worse than the control group (performing normally) but better than the uncoached simulators. Disappointingly, however, they did not examine the dissimulation strategies used by participants in their study.

Tan et al. (2002) examined test-taking, presentation strategies, and ability to feign believable cognitive impairment on three forced-choice symptom validity tests; the Test of Memory Malingering (TOMM), the Victoria Symptom Validity Test (VSVT), and the Word Memory Test (WMT) with normal participants

asked to feign cognitive impairment. Their test taking strategies were evaluated using a questionnaire designed to enquire how, for the experiment, they formed their strategy management and their perceptions of the face validity of each measure. They found that feigning memory loss (76%) and slow response rate (32%) were the most frequently reported strategies. Other reported strategies included, feigning poor concentration, feigning confusion, pretending to be nervous, and feigning poor comprehension. From the reported findings, 68% found it difficult to maintain their strategy and 48% reported changing strategy part way through. The most commonly cited reasons for altering strategies were difficulty maintaining concentration, problems keeping responses consistent, and embarrassment. A small number of participants reported having no strategy for feigning on the tests. However, preparation effort did not translate to believable performance on the symptom validity tests and malingerers did not necessarily feel that their strategies made them successful dissimulators.

Suhr (2002) observed that simulators from both brain injured and non-brain injured groups showed lower primacy scores in delayed word recall tests, while the expected performance pattern indicates the presence of both primacy and recency effects. Suhr concludes that the serial position effect could, therefore, be a useful indicator of malingering in TBI.

There were three studies (Freedland, 1982; Goebel, 1989; Iverson, 1995) that summarised post-test interviews with feigners, to obtain information concerning faking strategies, as well as factors that inhibited or facilitated their efforts to fake. All of these studies used content analysis to summarise their interview data and presented the results in terms of percentages. Providing frequency counts in this way, allows quantitative analysis of initially qualitative data but does not offer much depth or detail (Ryan and Bernard, 2000; Wilkinson 2000).

### 1.6.3 Qualitative investigations of dissimulation strategies

Freedland (1982) proposes that patterns of malingering on neuropsychological test batteries can be analysed in terms of the sophistication of the participant, the events to which he attributes his or her apparent dysfunctions, the symptoms the participant intends to fake, the strategies used in attempting to feign believable cognitive impairments without being detected, and the perceived costs and benefits. Freedland analysed patterns of faking on standard neuropsychological tests using three groups: participants malingering specific impairments, participants malingering global unspecified symptoms of TBI, and a control group. Post-test questionnaires and interviews were administered to the faking groups. He found that feigners internalised a scenario with criteria that needed to be matched or maintained to support their 'perceived brain injury'. Some of the participants used the tests to form the criteria and, as a result, had difficulty maintaining consistency over varied tests. The most commonly employed strategies in this study were feigned problems with speech and understanding, not trying hard, giving approximate answers, distributing errors, slow responding, and being consistent. Participants were concerned with performing badly on the tests but not so badly that their deception was obvious. Many participants tried to present themselves as honest and behave as if they were trying their best, and a small percentage (13%) felt unprepared and did not know what to do. Freedland suggests that a structured behavioural observation system should be developed to study the discrepancies between test performances and role behaviour.

In a study using the Halstead Reitan Neuropsychological Battery (HRNB), Goebel (1989) asked 141 participants, including 52 with brain injuries, to feign different types of specific or diffuse brain injuries. In this study, a post test interview was conducted to investigate faking strategies and factors that facilitated or inhibited participants' attempts to fake bad. A summary of participants' general faking strategies showed that 36% attempted to fake bad on every test, whereas 54% only faked bad on specific tests. This study determined that the most commonly used general faking strategies were:

- Slowing performance or looking dull or confused 36%
- Giving the wrong answer 30%
- Showing motor in-coordination 14%
- Simulating memory impairment 2%
- Ignoring stimuli 2%
- Changing emotional state 1.5%
- Stuttering 0.5%

Goebel found that only a few participants tried to simulate memory impairment. This contrasted with Iverson's (1995) study, in which participants spent time prior to testing convincing themselves that they had a memory problem and attempted to fake partial or total amnesia upon testing. A number of participants, despite being given explicit instructions, did not attempt to fake the test results, as they either felt the task was too difficult or they struggled with dishonesty and felt more motivated to try their best (Freedland, 1982; Goebel, 1989).

The only example of qualitative research using interviews that the researcher discovered in this area was the aforementioned study by Iverson (1995). Iverson devised an interview based study to investigate the more qualitative aspects of malingering memory impairment. He interviewed 160 undergraduates, community volunteers, psychiatric inpatients, and federal inmates who had previously participated in analogue (simulated) malingering studies. Participants were asked about strategies they used on each assessment procedure and also if they had any further ideas on how to fake a memory impairment. Iverson conducted a content analysis on the interview data and sorted participants' responses into broad categories. The table of results included only responses that were mentioned by at least three participants. Participants indicated that if they were to mangle they would show poor cooperation, aggravation, frustration, slow response times, frequent hesitations, and general confusion during the testing process. They might also ask for questions to be repeated, confuse test instructions, and pretend to forget what was being asked or presented during the tests. Some

participants engaged in elaborate preparatory activities such as engaging in deceptive behaviours in their daily lives prior to testing, as well as research and planning related to memory loss. Iverson comments on the large amount of missing data (n=49) and low frequency of category endorsements across groups, due to participants finding it difficult to express their ideas in a manner that could be analysed in this way.

Many previous studies have employed a vignette, which is given to participants before they undertake the neuropsychological tests, outlining a situation that gives rise to a desire to feign cognitive impairment. The majority of previous studies have employed scenarios depicting head injuries sustained during car accidents and implying that the motivation to perform poorly would be pursuance of a compensation claim (e.g. Den Boer & Hall, 2007; Haines & Norris, 2001; Iverson, 1995; Tan et al., 2002). The content of the vignette has been shown to affect the results obtained from experimentation. In a study using students asked to feign cognitive impairment on the Dot Counting Test, California Verbal Learning Test, and the Benton Visual Retention Test according to motivation, Erdal (2009) found that compensation seekers favoured errors of omission (leaving out correct responses) and attention seekers favour errors of commission (deliberately making errors). It is, therefore, important to consider this when designing a study, and to take the potential effects into account when considering the results.

## **1.7 Rationale for the Present Study**

A review of previous studies in the area of malingering neuropsychological deficits shows that, most, have used quantitative methods to trial instruments for detection of malingering and attempt to discover the strategies people commonly use to feign cognitive impairment. Only one study (Iverson, 1995), which concentrated on memory impairment, has exclusively used interviews to examine self-reported strategies for faking poor performance on neuropsychological tests. Iverson performed a simple content analysis on the

resulting data and recommends that future research should attempt to examine the qualitative aspects of malingering more systematically and in greater detail.

I plan to undertake a qualitative investigation of self-reported malingering strategies by administering detailed semi-structured interviews to non-brain injured participants immediately after they have been asked to feign cognitive impairment on standard neuropsychological tests. This study will focus on strategies for faking impairment in a broad range of cognitive domains, such as memory, attention, visuo-spatial ability, and executive functioning. Interviews will examine not only the strategies participants use to mangle but also the thinking underlying those chosen strategies.

The present study aims to extend the knowledge of clinical psychology in the detection of feigning by conducting detailed post-test interviews with ordinary members of the public who have responded to a request to dissimulate on a standard battery of neuropsychological tests. I hope to uncover useful information about strategies and thought processes employed by malingerers, which will be of particular importance to neuropsychologists who advise on compensation claims and provide expert witness testimony in criminal cases.

The specific research question to be addressed is: What strategies do people use to simulate cognitive impairment when undertaking neuropsychological tests?

## **2. METHOD**

### **2.1 Introduction**

In this chapter, I will describe the process of selecting a methodology and, hence, specific methods for this research, to address the methodological issues highlighted in the review of literature presented in Chapter 1. I will begin by discussing ethical issues, outlining my epistemological position and demonstrating how this led to the selection of the methodology I have employed. Finally, I will describe in detail the procedure by which participants were recruited and the research was conducted.

### **2.2 Ethical Approval**

This study was approved by the University of East London Research Ethics Committee; see Appendix A for a copy of the letter of approval. This research does not involve a clinical population and, therefore, did not require NHS ethical approval. Nevertheless, detailed guidelines for carrying out medical research were adhered to, as outlined within the Manual for Research Ethics Committees (Eckstein, 2001). Richards and Schwartz (2002) suggest that there are a number of special ethical issues that should be considered when undertaking qualitative research, such as “treating informed consent as a process rather than as a one off event” (p.138). They raise the possibility that the interview could be confused with a therapeutic encounter and in the present study support was made available to the participants where necessary. If required, the researcher was prepared to offer immediate emotional support to each participant following their interview. If any participant had been identified as requiring further psychological input, the researcher was prepared to advise them to approach their GP for a referral to appropriate psychology services.

As qualitative data can contain indications of participants' identities, care was taken to ensure anonymity when the interviews were transcribed by removing names and other identifying data. The identities of the participants were known only to the researcher and the data (e.g. audio files and transcripts) were stored, in accordance with the Data Protection Act (1998), on a password protected computer at the researcher's home. Paper copies of neuropsychological test data and interview transcripts were kept in a locked cabinet at the researcher's home. All identifying material, such as consent forms, was stored separately from the test and interview data, which were identified only by a research number linking them together. All data will be destroyed once this thesis has been accepted.

Although the research topic is not sensitive and participants are not considered vulnerable, a reflexive approach was used to avoid the effects of professional or personal bias. Discussion with a skilled researcher in supervision allowed me to reflect on the purpose of the research, the role of the researcher, and supported decision making at every stage of the project. Qualitative research requires consideration of the experiences and assumptions of the researcher. In this case, the researcher, a trainee clinical psychologist, had suffered an anoxic brain injury in young-adulthood, which resulted in temporary memory impairment. Many years of attempting to understand that experience inspired an interest in neuropsychology and the particular difficulties associated with being asked to describe and demonstrate cognitive impairments in relation to forensic proceedings. However, in addition to supervision, critical and reflective skills gained through clinical psychology training serve to mediate the assumptions and beliefs that accompany my personal experience.

## **2.3 Epistemological Position**

Before beginning any research project, it is important to consider the methods by which we can acquire particular knowledge, if such knowledge exists.

Adopting a Realist ontology would require that there exists an external reality,

separate from our thoughts, language and imagery, that can be objectively known outside our perceptions and representations. Social Constructionism, on the other hand, questions the existence of a 'true' reality and asserts that all knowledge is relative; derived through constructing the world from different perspectives that serve particular agendas (Burr, 2003).

Many Social Constructionists do maintain a concept of reality existing outside of discourse (e.g. Collier, 1998; Parker, 1992; Willig, 1999). Willig (1999) suggests that our observations and experiences are 'generated by underlying, relatively enduring structures, such as biochemical, economic and social structures' (p.45). Social constructionists who endorse this, Critical Realist, perspective take the view that although an external reality may exist, it can only be approximated by what we perceive.

Participants in this study were to be asked to describe the way in which they conducted themselves during a neuropsychological testing session and to reflect on the thinking behind their behaviour. This request carries an implicit assumption that participants will be able to access their thoughts on an objective reality and describe them accurately. This study, therefore, took a Critical Realist epistemological position, supposing that it is possible to gain insight into the behaviour of people feigning cognitive impairment through their own accounts, but acknowledging that researchers play a role in constructing this knowledge through their analyses (Madill, Jordon & Shirley, 2000).

## **2.4 Selecting a Methodology**

As the aim of the present study was to open up discussion about the experiences involved in dissimulation, rather than reducing them to predictions about discrete relationships, I felt that qualitative methods would be the most appropriate way to achieve this objective. This research sought to understand the strategies and rationale used in malingering by consulting dissimulators about their own experiences, whilst remaining mindful of the interpretative processes at work. From the diverse range of qualitative

approaches under consideration when approaching a study such as this, Thematic Analysis appeared to be the most appropriate method for analysing semi-structured interviews with dissimulators. Thematic Analysis is a widely used qualitative analytic method, which acts to identify, analyse and interpret patterns within data in rich detail (Boyatzis, 1998). Its flexibility allows broad and sometimes unanticipated themes to be identified. As it is not connected with any particular theoretical framework, Thematic Analysis is compatible with the critical realist epistemological position in its ability to both reflect and disentangle reality. Subjecting the data from participants' interviews to a Thematic Analysis should allow the development of an in depth understanding of feigning cognitive impairment.

Other methods for describing patterns across qualitative data were considered, but these were found to be less appropriate due to important differences in their epistemological bases. Interpretative Phenomenological Analysis (IPA; Smith & Osborn, 2003), for example, is underpinned by a phenomenological epistemology, concentrating on understanding participants' lived experiences through interpretation of their dialogue. Grounded Theory (Charmaz, 2002), is similar to Thematic Analysis but concentrates on generating a theory of phenomena through interpretation of the data. However, the present study was not concerned with generating a detailed understanding of the entire phenomena, understanding the way participants experience the process of the investigation, or making interpretations of the participants' dialogues in an attempt to uncover latent meaning.

Any theoretic framework carries a number of assumptions and Thematic Analysis assumes that participants will be able to accurately report on their own behaviour. Thematic Analysis is a relatively straightforward method that can provide a rich and complex account of the data, allowing for broad and sometimes unanticipated themes to be identified (Braun & Clark, 2006).

Semi-structured interviews provide access to participants' own views of how they went about feigning cognitive impairment on the neuropsychological test battery. Interviews are the preferred method for investigating research

questions, such as this, which are long, open ended and complex (Oppenheim, 1992). Semi-structured interviews are guided by a brief schedule and, therefore, allow the participant the freedom to express themselves in a way that is not possible with other, more rigid methods, such as questionnaires or structured interviews. Semi-structured interviews also allow access to other aspects of thought, such as emotions, and enable the interviewer to probe further into particular responses and follow the respondents' concerns.

## **2.5 Recruitment**

Potential participants were to be of working age, with English as their primary language and having no previous history of brain injury or cognitive impairment. To guard against practice effects, they should not have previously undergone any neuropsychological testing. Participants were not paid for their time.

In order to provide the broadest possible range of participants, a convenience sample of 15 people were recruited from the general public in the following areas of the UK: London, Portsmouth, Southampton, Bournemouth, and Lincolnshire. The researcher approached a number of contacts in person, by telephone, and via email, and provided them with an information sheet outlining the rationale for the study and briefly describing the experimental procedure (see Appendix B). These contacts in turn supplied the researcher with the contact details of other people they felt might be appropriate and interested in participating. In total, 19 potential participants were initially approached and provided with information. Two potential participants declined to take part: one objected to the topic of the investigation and one did not wish to undergo cognitive testing (please see Section 4.3 for further consideration of this matter). One person agreed to take part but was unable to arrange a convenient time and another was rejected as it transpired that he had a history of TBI. Potential participants were given time to decide whether they

were willing to take part and invited to make contact to arrange a date and time to meet, either at the researcher's or participant's home.

Prior to testing, a verbal briefing was given and any questions answered before informed consent was obtained by means of the Consent Form, in Appendix C. Participants were informed, both verbally and in writing, of their right to withdraw at any time and to have their personal data destroyed. Following the cognitive testing and the subsequent interview, a verbal debriefing provided another opportunity for participants to raise any concerns they may have had whilst taking part. Additionally, participants were informed that the results of the study would be submitted as part of a dissertation for a doctoral degree in clinical psychology and that they may also be written up for publication. Participants were assured that they would not be identified in any part of these disseminations and all information would be treated in the strictest confidence. A separate appointment time was agreed with each person who consented to participate and testing began only when they were satisfied with my responses to their concerns.

## **2.6 Participants**

There were 15 participants in this study, seven males and eight females, whose ages ranged from 27 to 66 years (mean=44.80, SD=14.71). To ensure a spread of educational and occupational status, they included a chef, seamstress, retired fisherman, nurse, linguist, architect, barrister, financial advisor, engineer, musician, student, and university professor. They had between seven and 21 years of education (mean=16.07, SD=3.63). The participants were all White British.

## **2.7 Resources**

In the present study, a scenario was employed, giving participants instructions to fake poor performance on the neuropsychological tests (Appendix D). Care was taken to make the scenario as neutral as possible in order to avoid

influencing the types of strategies participants may choose to employ (as discussed in section 1.6). To achieve this, the circumstances in which an injury was sustained and the reasons for feigning cognitive impairment were not described. Many previous studies have also supplied participants with contextual information (e.g. Den Boer & Hall, 2007) advising them of the possible effects of brain injury or advising them to undertake Internet-based research prior to testing (e.g. Tan et al., 2002). To ensure that naive participants were able to plan strategies to realistically fake cognitive impairments, a short list of common symptoms of cognitive impairment was provided with the scenario. This *contextual information* was constructed using information freely available from brain injury associations on the Internet.

The Repeatable Battery for the Assessment of Neuropsychological Status (RBANS; Randolph, 1998) was the main neuropsychological test employed. This was supplemented with several additional procedures to comprise a comprehensive but brief neuropsychological testing battery, typical of those used in an NHS setting with clients presenting with Traumatic Brain Injury (TBI).

The RBANS is a brief neurocognitive battery, originally developed as a screening tool for the assessment of dementia (Randolph, 1998). However, the RBANS offers many advantages, including short administration time, normed index scores and alternate forms, making it increasingly popular for use with other populations (Beatty, 2004; Larson et al., 2003). The RBANS contains a number of tests likely to be familiar to most neuropsychologists. Immediate and delayed verbal recall are measured using word list and story recall tasks. Attention is measured using Digit Span Forward and a symbol coding task similar to that offered by the Wechsler Adult Intelligence Scale (WAIS; PsychCorp, 2008). Language functioning is assessed using confrontation naming and category fluency tasks. Visuospatial skills are assessed using figure copy and recall tasks and a modification of the Benton Judgement of Line Orientation Test (Benton, 1991). The RBANS demonstrates good internal reliability (alpha coefficients) and has good

convergent validity (relationship between raw scores and comparable neuropsychological measures).

Lezak, Howieson and Loring (2004) recommend the addition of tests of executive function, semantic fluency, and motor response to the RBANS. These cover important areas not included in the standard battery and increase its sensitivity to milder forms of cognitive dysfunction. Therefore, the following tests were added: (a) The Wechsler Test of Adult Reading (WTAR; Wechsler, 2001), commonly used to estimate a person's level of pre-morbid cognitive functioning. (b) Digit Span Backwards, in addition to the forwards version, was added to parallel the more comprehensive test of attention offered by the WAIS. (c) The Letter Fluency task was added as a test of verbal executive functioning. (d) A test of list recognition, similar to that offered by the CVLT (Delis, Kramer, Kaplan & Ober, 2000), was added to assess recognition memory. Two novel tests of recognition memory were also added: Story Recognition (simple forced choice questions relating to story recall) and Picture Recognition (a three item forced choice identification procedure). A novel test of visuo-spatial executive functioning based on the Brixton Spatial Anticipation Test (Burgess & Shallice, 1997), a visual sequencing task with rule changes, was also added to ensure the battery was comprehensive (Flower Test).

## **2.8 Data Collection Procedure**

Participants were presented with a scenario sheet explaining that they were about to undertake a neuropsychological test, typically administered to people who had suffered brain injuries, to detect changes in their cognitive abilities. They were asked to alter their performance on the test to suggest that their thinking had been adversely affected by a mild brain damage. Some very brief contextual priming information was supplied, listing abilities commonly affected by cognitive impairment, such as speed of thought, memory and concentration (Appendix D).

After the scenario had been introduced, participants were given a few minutes to consider their approach to the test. When the participant indicated their readiness to begin, a battery of standard neuropsychological tests was administered, which took around 45 minutes to complete. It was felt that this length of testing was appropriate to ensure that participants completed a comprehensive and realistic test battery but remained willing and able to engage in a detailed interview immediately afterwards.

Having completed the neuropsychological testing session, participants took part in a semi-structured interview. Interviews ranged in length from 10 to 28 minutes (mean = 17.4, SD= 5.4). Participants were interviewed about how they set about attempting to perform poorly on the neuropsychological test, both in general and in relation to the individual sub-tests. Interview questions focused on what participants were thinking whilst undertaking the tests, what motivated their choices of strategy, how successful they thought they were at feigning poor performance, and how they felt about the experience. The interview schedule was designed to allow participants the freedom to speak about the experience in their own words and raise factors that had not been anticipated by the interviewer (Appendix E). The interviews were recorded using a digital MP3 audio recorder.

## **2.9 Data analysis**

The qualitative data from this study (participants' interviews) were subjected to a Thematic Analysis. Braun and Clark (2006) suggest a number of steps to ensure that Thematic Analysis is conducted in a reliable manner. Through reading and re-reading the transcript, the researcher observed patterns that seemed to recur across the entire dataset and grouped those into themes. Although some themes arose more frequently than others, more or less numerous occurrences of a theme were not considered to be reflective of their relative importance.

The Thematic Analysis was conducted using a theoretical (deductive) approach, where the identification of patterns in the data is driven by the researcher's theoretical interest (Braun & Clark, 2006). Analysis of data was, therefore, guided by the specific research question: 'What strategies do people use to simulate cognitive impairment when undertaking neuropsychology tests?', rather than aiming to provide a rich description of the entire dataset. However, some unexpected themes emerged during analysis concerning participants' reactions to attempting to feign cognitive impairment. A more inductive approach was used in coding these data as they were considered relevant to the investigation, despite not strictly being responses to the research question. The resulting analysis, as in any qualitative research, is influenced by the interview questions put to the participants, the context of the research, and the assumptions of the researcher who coded the data as well as the specific research question.

The analysis was conducted according to the following stages:

#### Stage 1 – Familiarisation with the data

Familiarisation began during data collection and continued throughout the transcription process. The transcription process began as soon as the 15 interviews had been completed. Ideas for coding and discussion were noted during the transcription process and informed the early stages of the analysis. Transcription was conducted at word for word level, broadly following the guidance of Banister, Burman, Parker, Taylor & Tindall (1994). However, it was not considered necessary to transcribe non-verbal features, such as laughs and coughs, word emphasis, and length of pauses. False starts and perseverations were included and the text was punctuated to enhance readability. A backwards slash (\) was used to indicate interruptions or overlapping talk and all pauses were represented by three dots (...). All names and other identifiable information were removed. The interview transcripts were printed in double spaced type on A4 paper with line numbers to aid identification of relevant quotes and sufficiently large margins to allow interesting features of the dataset to be annotated.

### Stage 2 – Generating initial codes

Interesting semantic or latent features of the data were coded systematically across the whole dataset, as illustrated by the excerpt of annotated transcript in Appendix F. The data were read and coded multiple times to ensure that all relevant data segments related to the topic in question were included. All codes were then transferred from the transcript into an Excel Spreadsheet, along with the corresponding participant numbers, line numbers and quotations. Where relevant, some quotes were listed under more than one code. At this stage, an initial list of 331 code-quote pairs was generated.

### Stage 3 – Identification of themes

The codes were then analysed and organised into meaningful groups. These codes were then collated into potential overarching themes and sub-themes (Appendix G). Some codes were sufficiently explicit to form a theme of their own while others were combined to form new themes. Links were made between themes at different levels and a thematic map was then generated as a visual representation of how the groups related to one another.

### Stage 4 – Reviewing themes

The themes and sub-themes were reviewed in relation to the overall story generated by the analysis and finally assembled into organising themes. Candidate themes were reviewed in terms of distinctness from each other and internal consistency. Some were discarded and others collapsed into each other. At this stage there were three themes that did not fit with the research question. Although they did not focus on dissimulation strategies, these themes related to the experience of the dissimulation itself and were considered to be important. Therefore, rather than being discarded, they were assembled into an organising theme entitled 'Experience of the Task'. The other organising themes related to 'Using strategies' and 'Rationale'. The final thematic map can be seen in Appendix H.

The resulting analysis and discussion (Chapter 3) uses quotes from participants to illustrate the themes and their relevance to the research question. Pseudonyms have been used in place of participants' names.

### **3. ANALYSIS AND DISCUSSION**

Using thematic analysis, three global themes were identified within the interview data (see Table 2). These global themes are examined consecutively; firstly, considering the essence of the theme illustrated by quotes from the interviews, then by linking the themes to the literature and other available evidence in this research area. In light of the research question, the implications of these findings for the detection of dissimulation are explored in Chapter 4.

**Table 2 – Summary of Themes**

<b>Global Themes</b>	<b>Organising Sub-Themes</b>	<b>Basic Themes</b>
1. Using Strategies	1. Specific Test Strategies	1. Intrusions
		2. Omissions
		3. Production errors
		4. Approximate answers
		5. Response patterns
	2. General Strategies	6. Estimating task complexity
		7. Impulsivity
		8. Being slow
		9. Attention and concentration probs.
		10. Tiredness
		11. Trying to be consistent
		12. Faking memory impairment
	3. Impression Management	13. Trying to appear helpful
		14. Appearing to be trying
	4. Counterfactual Strategies	15. Performing under natural ability
		16. Faking confusion
2. Rationale	5. Explanations Offered for Strategies Used	17. Making assumptions
		18. Using prior knowledge
		19. Imitation
3. Experience of Dissimulation	6. Emotions and Reactions	20. Anxiety
		21. Personal conflicts
		22. Suppressing abilities
		23. Genuinely struggling
		24. Residual effects
	7. Experiencing Difficulties	25. Finding it difficult to fake bad
		26. Finding it hard work
		27. Not knowing what to do
		28. Having second thoughts
	8. Strategies Failing	29. Things slipping out
		30. Forgetting to simulate
		31. Being drawn to the correct answer
32. Inconsistencies		

### **3.1 Global Theme 1 - Using Strategies**

The first global theme to be considered is Using Strategies. This global theme addresses the types of strategies that participants reported using, both generally and on specific tests, as well as strategies that participants used to confound the examiner or convince the examiner of their integrity. Out of this global theme came four organising sub-themes:

### 3.1.1 Specific Test Strategies

This organising sub-theme refers to strategies participants reported using for dissimulating on specific neuropsychological tests within the battery. This sub-theme is split into five basic themes:

#### Basic Theme 1: Intrusions

Participants reported using intrusions and false positives as a dissimulation strategy in relation to particular tests within the battery, such as word list recall, story recall, figure recall and word list recognition:

211 Yeah. It was a general thing of ... sort of remember if it's  
212 close say yes even if it's wrong. Like the fifth of May I think  
213 was wrong. Erm... but and then at the end I think I just  
214 kept saying yes to things as well like how many things  
215 were destroyed yes yes yes...

*Louise talking about story recognition.*

163 I decided to do that as best I could but add a little bit extra  
164 in as though I hadn't quite remembered it correctly.  
165 [----- Interviewer speaks -----]  
166 [----- Interviewer speaks -----]  
167 [----- Interviewer speaks -----]  
168 Yes. Because I think if I'd have missed things out, it might  
169 have looked like I was deliberately doing it wrong. And  
170 because it was such a simple figure I thought if I add a few  
171 bits in it might look like I couldn't remember it all but I was  
172 adding some just in case.

*Elizabeth talking about recall of the complex figure.*

182 And again what I was doing was picking out things that  
183 were coming from other bits, other words, other phrases  
184 that came from other bits of the test. So I was pulling  
185 them in and saying that they were in the story when they  
186 weren't.

*Daniel talking about story recognition.*

The idea of using intrusions and false positives as a dissimulation strategy on particular neuropsychological tests has not been widely reported in the literature. However, these phenomena have been well reported in studies of normal memory functioning. Laboratory studies of memory have found that intrusion errors (where thematically related information that was not part of an original event becomes associated with the memory) are extremely common (e.g. Jacobs, 1990). It has been long recognised that similar errors of intrusion frequently occur in the retelling of stories and events, particularly where gaps within accurate memories are subconsciously filled with false information (Bartlett, 1932). Memory errors, such as intrusions and false positive identifications, have been especially important in revealing the inherent inaccuracy of eyewitness testimony in the forensic arena (e.g. Loftus & Palmer, 1974). Participants in this study felt that adding items into the word list, the story or the complex figure would be a suitable dissimulation strategy that would not seem deliberate to the examiner. It has been observed that the type of motivation to malingering can affect performance strategy in terms of whether errors of omission or commission are more likely (e.g. Erdal, 2009).

## Basic Theme 2: Omissions

In contrast to using intrusions, participants also felt that leaving things out, particularly during recall of the complex figure, the word list and on the digit span task, would be a suitable dissimulation strategy. Participants tried to omit what they believed were 'specifics' from their recall of the story and attempted to simulate memory blanks resulting from being put under pressure by the testing:

170 Erm just miss out a couple of things. I genuinely  
171 couldn't remember what had been on this side. I knew  
172 something had been but I chose not to draw it. There had  
173 been three circles in here which I chose not to draw.

*Judy talking about recall of the complex figure.*

88 Err I was purposely missing out ... on the three digits I  
89 was purposely missing out ... I was purposely missing out  
90 the middle one so it made it look like I could remember  
91 something at the beginning, something at the end and no  
92 attention span in the middle.

*Chris talking about the Digit Span task.*

99 Erm well... I thought, again, this would be an easy one to  
100 get wrong because there was loads of detail and you  
101 wouldn't really expect me to remember all of it, I wouldn't  
102 have thought. So if I had the very bare bones of the story  
103 then that it would be easy to make it seem as though that  
104 was all I could remember.

*Steve talking about story recall.*

Although participants in previous investigations of dissimulation have identified errors of omission as a strategy they deliberately employed, it has not been cited as one of the most frequently used approaches (e.g. Tan et al., 2002). However, in the present study, making errors of omission was a

preferred method, particularly for participants who were attempting to feign memory impairment. This finding is consistent with the work of Haines and Norris (2001), who suggest that malingerers are likely to learn and recall fewer words over repeated list learning trials than genuine neurological patients and suppress the relatively easy recall of primacy items.

### Basic Theme 3: Production errors

Making deliberate errors on reproduction tasks was a strategy that participants reported using because they felt that someone with a brain injury may confuse or fail to recall the placement of items on visual tasks. They, therefore, tried to make deliberate errors with their placement of parts of the complex figure, both on copy and recall trials:

70 Erm.... I was trying to ... think that it shouldn't be really  
71 accurate and get some things a bit wrong. Deliberately  
72 sort of misplace things. And I thought also that I wouldn't  
73 complete it in the time.  
74 [----- Interviewer speaks -----] Erm... Just 'cause I thought  
75 that that might be one of the things that people might get  
76 wrong. And also because I planned some of the other  
77 things to look like I didn't remember stuff, I thought I'd give  
78 the diagram a go and make that particularly bad.

*Rachel talking about the figure copy task.*

78 I might put things in  
79 the wrong place. Like just little details. The less obvious. I  
80 think that one depends. I mean, some people are just not  
81 good at drawing are they?... Erm... so it might be  
82 nothing to do with whether or not you actually had a  
83 problem with... replicating the same thing, just... hard to  
84 draw.

*Miranda talking about the figure copy task.*

219 Erm... I think I was just trying to rotate stuff. .  
220 So erm obviously I drew the the rectangle and then rotated  
221 the cross that was in the middle a little bit. I brought the  
222 thing in and took that from there and that from there,  
223 missed out the squiggle and the three circle, turned the  
224 three circles into one circle in a completely incorrect place  
225 erm and that was that.

*Jon talking about the figure recall task.*

The strategy of making deliberate production errors was conducted quite sophisticatedly by those participants who reported making errors on recall trials. Examples included distorting aspects of the complex figure and swapping words around on story recall. There is little knowledge within the existing literature of malingered practices on recall of geometric figures or prose passages (Silverberg, Wertheimer & Fichtenberg, 2007) and nothing whatsoever on item misplacement. It appears from the data that participants in the present study were attempting to feign memory impairment, rather than disorientation or perceptual problems.

#### Basic Theme 4: Approximate answers

Participants attempted to simulate Ganserism, by naming items wrongly, leaving out detail and saying something similar to the correct answer:

140 Well, it was immediate obvious when you showed me the  
141 first picture that they would be easy to do, ... and  
142 there so therefore I thought, if I'm going to get any of these  
143 wrong erm it's not, it's not going to be because I don't  
144 know what they are erm therefore I had to choose just to  
145 choose not to get them right really. Either by pretending  
146 not to know what they are or by calling them something  
147 that was a bit like what they were but not, so as to make it  
148 look like I was trying to get them.

*Steve talking about the picture naming task.*

200 Yeah. I sort of thought, just simplify it down to the very  
201 bare bones... and pretend I'd forgotten most of it.

*Louise talking about story recall.*

112 obviously a chair not a seat. Erm but something I guess  
113 that was related to something that I could see, in some  
114 way shape or form, erm but a relatively sort of abstract  
115 connection, if I could.

*Jon talking about object recognition.*

Ganser Syndrome is well reported (Dwyer & Reid, 2004; Spodenkiewicz, Taïeb, Speranza, Moro & Révah-Levy, 2012; Staniloiu et al., 2009) and can be a deliberate and recognisable attempt to dissimilate. Although it is uncertain whether Ganserism is a form of malingering or a dissociative disorder, it has not been found to be a result of genuine cognitive dysfunction (Spodenkiewicz et al., 2012). Giving approximate answers has also been reported by Freedland (1982), who found that this strategy was used by 80% of participants attempting to dissimilate. Some researchers consider this practice rather obvious and suggest that it would be noticed as soon as it was introduced by anyone attempting to dissimilate (e.g. Staniloiu et al., 2009). However, disappointing results from research into the discriminatory reliability of confrontation naming tasks and recall of prose passages (e.g. Backhaus et al., 2004) makes these tests especially vulnerable to dissimulation; an advantage unwittingly utilised by participants in the present study.

#### Basic Theme 5: Response patterns

Employing patterns for answering was described by participants in their attempts to ensure that they performed poorly on specific tests. The most common patterns used on visual tasks that required pointing to the correct answer were to select the middle option from the group, to select an answer that was one item away from the correct selection, and to repeatedly get one right then one wrong. On the verbal tasks, repetition of answers was the most

common pattern and reversing symbols was the most common strategy employed for the symbol coding task. Random guessing was a pattern employed as a dissimulation strategy on all tasks:

77 Erm I think I tried to do one right and one wrong. Yeah. Of,  
78 you know, each pair. So not sort of one line wrong each  
79 time but every other time. Yeah, I was aiming to get one  
80 wrong.

*Judy talking about line orientation.*

205 I was picking the thing that was darkest.

*Daniel talking about picture recognition.*

215 Yeah, no. Just random... [----Interviewer speaks----]  
216 Yeah because I thought to myself, the list the images that  
217 you showed me, you must have shown me previously.  
218 Yeah. So I've just got to pick one of them,

*Participant 14 talking about picture recognition.*

138 I was going with the repeating things one again.

*Rachel talking about picture recognition*

232 Err the only strategy was after er after a handful of words  
233 to start repeating myself.

*James talking about the letter fluency task.*

300 Well I'll tell you what I did straight away was that the two  
301 similar symbols I would confuse so one and six and two  
302 and five. Yeah. And then I thought that would be too  
303 obvious so I'll start off getting it right... then I'll get  
304 some of it wrong ok and then I was going for a pattern of if  
305 I was going to get it wrong I would always go up the  
306 sequence.

*Mark talking about symbol coding.*

376 I was trying to make it look as  
377 though I had in my own mind a pattern, rather than just  
378 picking completely randomly.... Even though my  
379 pattern wasn't correct.

*Steve talking about the flower test.*

Using random guessing to create errors would usually mean that the errors will become evenly distributed throughout a particular test. This may be a successful strategy on some tests, as it should ensure a performance of at least chance level. However, on tests in which the items increase in difficulty sequentially, such as the WTAR, Flower Test and Picture Naming task, this will have produced an unrealistic performance (Hall & Poirier, 2000). More interesting were the participants' descriptions of the patterns they used to distribute their errors randomly throughout particular tests. One participant, for example chose the darkest of each set of items on the picture recognition task; a pattern that could be seen if the responses were carefully examined in relation to the stimulus material but one that could easily be missed otherwise. Many participants felt that repetition would be a good strategy to produce errors and indicate confusion. In explaining their thinking behind this strategy, participants commented that people who had memory problems were known to repeat themselves often. Naive dissimulators who employed patterns of answering in their dissimulation strategies may be unaware that unusual patterns in performance, such as similar scores on both easy and difficult tasks, can be uncovered by performance curve or error magnitude calculations (Rogers, Harrell & Liff, 1993). Although inconsistency in presentation is common in severe brain-injuries (Pankrantz, 1988), improbable patterns of performance rarely occur in patients with mild cognitive impairment (Den Boer & Hall, 2007). Response patterns, which may suggest exaggeration or faking, are sometimes caused by organic dysfunctions, conversion disorders or factitious disorders (Freedland, 1982). However, participants who used patterns of answering when responding to the standardised tests in the present study could have been detected.

### 3.1.2 General Dissimulation Strategies

Using a particular strategy throughout the entire test battery was reported by participants who considered this to be the most convincing approach. The organising sub-theme of General Dissimulation Strategies is divided into seven basic themes:

#### Basic Theme 6: Estimating task complexity

Participants reported that they made some attempt to estimate the complexity of the different tasks before determining whether they should perform those tasks, or elements of tasks, less well. They felt that the more complex the task appeared to be, the more badly they would be performed by someone who had a cognitive impairment:

- 5 Well, I decided that the simple tests I would do fairly well  
6 but anything that looked complicated, I would then decide  
7 which bits I would score badly on. I would deliberately do  
8 something that I thought would be stupid.  
9 *[----- Interviewer speaks -----]*  
10 For instance, when I was reading the words, I started all  
11 the simple words off straightforward and decided that any  
12 that looked too long I would then say it wrongly.  
13 *[----- Interviewer speaks -----]* Yeah. Or  
14 or complication of the er letters that went together. So for  
15 instance where it was Q U E I decided to do that badly.  
16 Ok. Because that would be the sort of word that a child  
17 would get wrong.

*Elizabeth.*

- 14 But er erm.. I'd like to think I was er I appeared to be  
15 slightly brain damaged and not fit for work by the amount  
16 of things I got wrong and I was aiming to try and get the  
17 more complex things really quite wrong erm so that erm

18 it would look like I'd managed the simple tasks but do the  
19 more complex things you know.

*Daniel.*

As previous research concerning feigning strategies has not specifically addressed participants' ideas about task complexity, very little information about task perception is available for comparison. Dissimulators in the present study made the assumption that they would be able to accurately determine the complexity of the different tasks and then decide whether each task would be too difficult for someone with a mild cognitive impairment to perform well on. As the participants were often unsure of which were the simpler tests, and made inaccurate assumptions about what the perceived complex tests would reveal about a cognitive impairment, this strategy is of primary importance in revealing the behaviour of naive dissimulators. However, coached individuals might have been better prepared to make such assumptions and may, therefore, have produced a more convincing result.

#### Basic Theme 7: Impulsivity

Sometimes participants chose to base their entire performance around giving the impression of being impatient and impulsive as they felt that this behaviour would be considered unusual for an unimpaired adult:

11 Yeah. To try and genuinely guess the answer and then  
12 sort of play it into a pattern of being either kind of...  
13 impatient and sort of not trying and thinking of it as... erm  
14 as though I was genuinely trying to prove being able to do  
15 it but then also sort of dispelling with the more sort of  
16 social layer that I'm not interested in doing the test.

*Mark.*

34 Well, I tried to remember the list from the offset, beginning  
35 to end... and then I thought, if I gave a very impulsively  
36 straight answer of as many as I might remember quickly

37 and then stop them really but kind of remember different  
38 fragments.

*Mark talking about immediate word list recall.*

Those participants who based their entire performance around creating the impression of being impatient and impulsive gave a similar performance to that reported by Goebel (1983). Goebel's student participant, who successfully faked brain damage on subjective analysis, stated that she attempted to fake on all the tests, "Lie a lot ... play dumb, try to appear frustrated" (p. 740). Impulsivity is a symptom most likely to be produced by a condition such as executive dysfunction, which is usually associated with severe head injury or fronto-temporal dementia. Therefore, simulating dysexecutive symptoms when feigning mild cognitive impairment might have made participants dissimulation more easily detectable.

#### Basic Theme 8: Being slow

Cognitive slowing, as a strategy for dissimulation, was achieved by hesitating or employing strategies for wasting time on particular tasks:

4 What I decided to do was, as the person that was  
5 supposed to be something wrong with them, I decided  
6 they were gonna try hard at the test but would do it very  
7 slowly.

*Sue.*

36 Erm. There was a couple that I could I thought could go  
37 either way. Erm. I think I did it quite slowly. Words that had  
38 more than three, some had more than three syllables and  
39 stuff down the end I said them quite slowly.

*Mary talking about the WTAR.*

Again participants drew on their own observations to develop their strategy. They had previously observed, for example, that there was an increase in time

taken for older people and those with cognitive impairments to complete certain tasks. It was, therefore, not entirely unexpected that many participants chose to employ being slow as a dissimulation strategy. It has been shown that test time is a discriminatory variable (e.g. Goebel, 1983; Haines & Norris, 2001), so the fact that many participants invoked this strategy was not surprising. Tan et al. (2002) found that being slow was the second most popular dissimulation strategy in their research and this has been found to be a commonly employed dissimulation strategy in numerous other studies. Goebel (1983), for example, found that 36% of participants on his dissimulation study either slowed their performance or attempted to appear dull, confused, or slow to comprehend. Seymour, Seifert, Shafto, and Mosmann (2000) appraised the efficacy of response time as an indicator of concealed knowledge. They found that response times were approximately 300 milliseconds longer for individuals who participated in a mock crime when they responded to verbal stimuli related to the crime than when they responded to neutral stimuli. Moreover, the classification accuracy of detecting deception surpassed that of the polygraph. The researchers argued that concealed knowledge evoked cognitive interference (a hesitancy in responding) when perpetrators encountered relevant artefacts or information. Therefore, the strategy of being slow, whilst being invoked for dissimulation, was also masking the fact that time was being used to dissimulate.

#### Basic Theme 9: Attention and concentration problems

Participants reported that they had attempted to feign attention and concentration problems throughout the entire testing session:

10 the patterns ... I was guessing ... or ... I would  
11 pretend that I was losing concentration and keep going  
12 back to the same one.

*Chris.*

150 I just thought I'd put a few random numbers in as though I  
151 didn't want to do any more.

*Rachel.*

164 There I thought, I can't be bothered! I thought if I if I Yeah  
165 because because the process of recalling is or processing  
166 the task is more intense or requiring more of you then I'd  
167 lose lose interest.

*Mark.*

Attention and concentration problems were felt to be key to dissimulation, as participants thought that demonstrating that they were unable to maintain an interest in the task would indicate the presence of some kind of cognitive deficit. Tan et al. (2002) found that concentration difficulty was reported in 12% of dissimulators, although concentration problems, which are quite common in mild cognitive impairment, are often misinterpreted as memory problems and feigners often mistake the purpose of the tasks that measure them. They might assume that the Digit Span task, for example, aims to measure long term memory when in fact it exploits attention and concentration abilities to provide an estimate of working memory function. In other studies investigating malingering, Digit Span has been found to be relatively insensitive to various forms of brain dysfunction and that malingerers will often perform below the level of genuine neurological patients (Axelrod et al., 2006; Mittenberg et al., 1993). If participants perform well below chance level on tests of attention and concentration then they will be revealed as dissimulators.

#### Basic Theme 10: Tiredness

Feigned tiredness was a dissimulation strategy employed by participants, who believed that a person with a cognitive impairment would become tired and confused more quickly than normal:

157 Erm I thought I'd do the obvious ones and then again lose  
158 interest a bit. And decided to stop because I got really  
159 tired. [----- *Interviewer speaks* -----  
160 -----] Yeah. By that point I thought you know,

161 after going through that many tests and after that long that  
162 people might not be able to concentrate

*Rachel.*

60 And what I did was I towards the end I pretended I was  
61 getting tired, so of course I got myself muddled.

*Sue.*

249 Erm... It had already taken quite a long time so I was sort  
250 of playing that I was very tired by this point. Erm. I was  
251 thinking if I did have some kind of injury I probably would  
252 be erm... completely sort of worn out by this point.

*Louise.*

Even though fatigue is a familiar experience in the general population, it is particularly troublesome to those with traumatic brain injury (La Chappelle & Finlayson, 1998). Continuing emotional and cognitive symptoms, remaining after mild acquired brain injury, can be so disabling for some patients that it reduces life satisfaction due to the daily challenges (Stalnacke, Elgh & Sojka, 2007; Tiersky et al., 2005). Johansson, Berglund, and Ronnback (2009) found that mental fatigue after mild traumatic brain injury can last for several years and can be profoundly disabling and affect working capacity as well as social activities. According to Ziino and Ponsford (2006), fatigue is related to task difficulty or cognitive inefficiency on more complex cognitive tasks with a higher working memory load. The participants that pretended to become tired were using a dissimulation strategy that they felt was believable. Indeed, research has shown that fatigue has been known to affect cognitive performance, since Van Zomeren, Brouwer, and Deelman (1984) highlighted the potential relationship between fatigue and cognitive resources following traumatic brain injury. They proposed that fatigue may be due to the additional compensatory effort expended by individuals with brain injury in meeting the demands of everyday life in the presence of cognitive deficits. As it is understood that brain injury can cause fatigue, dissimulators using this strategy could be successful in their deception. However, Resnick (1997)

cautions that simulators are often unable to maintain their behavioural pretences, becoming increasingly 'normal' as time elapses. If this is the case, subjecting suspected malingerers to a lengthy interview process may provide a means of revealing this inconsistent behaviour. In the current literature on dissimulation, feigning tiredness does not appear to have been previously reported.

#### Basic Theme 11: Trying to be consistent

Consistency in performance was considered necessary by participants who felt this would make their performance appear most realistic. This sometimes meant continuing with the same dissimulation strategy, even if they felt that it was not effective:

326 Err... that's an interesting one. I think that they gave some  
327 consistency...

333 it was trying to develop a strategy. I think on the whole I  
334 think if I'd had more time to think about numbers, I'd have  
335 probably developed something else and it was a hard  
336 decision which number ones to get wrong. Erm so I think I  
337 was sort of consistent. So I think its sort of worked.

*James.*

60 I was making serious errors on there..... And I tried to  
61 make them erm work together so that the words that I was  
62 getting wrong I was getting wrong each time....  
63 Similar words I was getting wrong. So cough and  
64 although I said them both said them both wrongly. Erm  
65 and there was something else er something with a b in it  
66 or something. Just different words, words that were  
67 similar.

*Daniel talking about the WTAR reading test.*

90 I was doing a mixture. So ones that were in a similar  
91 direction but not exactly the same. [----- Interviewer  
92 speaks -----] Yeah, because I was aware that I hadn't  
93 done anything completely reversed before so then it would  
94 look obvious if I suddenly started to reverse things.

*Rachel talking about line orientation.*

Homogeneity of performance was of the utmost concern to these participants, as they felt that a realistic performance would be consistent and found this challenging to achieve. They were aware that at times they had been unable to keep their performances consistent and sometimes felt that, as a result, they had failed in their task. Tan et al. (2002) found that difficulties maintaining consistency was one of the main reasons that some of their participants cited for changing strategy during their tests. Past research investigating dissimulation strategies has found that participants rate consistency quite highly as a potential malingering strategy (e.g. Goebel, 1989). Some participants in the present study interpreted behaving consistently as attempting to produce an impaired performance across the entire battery of tests. Others chose to perform poorly on tests that they thought were testing a particular ability, such as memory, which may be more realistic. Those that decided to perform poorly on every test were not aware that sub-optimal performance in multiple domains is considered to be a potential indicator of malingering (Oorsouw & Merckelbach, 2010). Declines of more than 24 points on Wechsler IQ tests in mild cognitive impairment would also raise suspicion (Greve et al., 2008). Goebel (1989) also found that around one third of simulating participants chose to attempt to fake bad on every test. The remainder elected to attempt to fake on only some of the tests, consistent with the reports of participants in the present study.

#### Basic Theme 12: Faking memory impairment

Exhibiting what they believed were characteristics of short term memory impairment was a strategy employed exclusively by participants who chose to feign a specific impairment:

11 Well, I wanted to emulate short term memory failure sort of  
12 thing.

*Barry*

151 I was trying to make it seem like I couldn't hold things in  
152 my memory.

*Daniel*

145 Yeah. I think by that point I'd erm started to decide that  
146 memory wasn't something that I was going to be good at  
147 in this test,

*Jon*

Feigning memory deficits has been commonly reported across the literature as a strategy for simulating cognitive impairment (e.g. Haines & Norris, 2001; Tan et al., 2002) and Iverson's (1995) qualitative study concentrated entirely on malingering strategies in the memory domain. The popularity of simulating amnesia and memory impairment may be due to the relative availability of lay experiences with deficits in this domain in comparison with any other. Most people will have had some experience of 'forgetting' in their ordinary lives. Many are likely to have encountered older friends and relatives for whom memory has deteriorated due to dementia or contextual factors, such as sedentary lifestyle (Simensky & Abeles, 2002; Szabo et al., 2011). Furthermore, people often mistake other commonly experienced everyday malfunctions in cognition, such as lapses in attention and concentration, for failures of memory. In spite of this, malingerers have been shown to overestimate the memory impairments associated with mild head injury (Coleman et al., 1998). Suhr (2002), for example, observed that malingerers tend to present a performance pattern more consistent with severe amnesia than mild cognitive impairment. Inaccurate beliefs about cognitive impairment are thought to be most promising in detecting feigning (Horton et al., 1992; Martin et al., 1998; Wiggins & Brandt, 1988).

### 3.1.3 Impression Management

Various strategies were used to attempt to manage the impression participants made upon the examiner in the hope of provoking particular feelings in them. The impression management organising sub-theme was broken down into two basic themes:

#### Basic Theme 13: Trying to appear helpful

Participants performed in a way that they felt would show they were trying to be helpful in order to evoke feelings of sympathy and trust within the examiner. By doing this they hoped to convince the examiner that they were being truthful and were not the sort of person who would engage in deceptive behaviour:

- 39   stuff down the end I said them quite slowly to show that I  
40   was just trying to go for it... I was trying to show, I was  
41   doing my best to show you I was trying to be helpful.

*Mary*

In the present study, participants tried to persuade the examiner that they were being honest by behaving as if they were being helpful. This is consistent with Freedland's (1982) research finding that many dissimulators used test items to show that they are much 'too honest and trustworthy to do anything that is fraudulent or deceptive' (p. 93). This finding is validated by Bordini, Chaknis, Ekman-Turner, and Perda, (2002), who point out that 'many malingerers often present as at least superficially cooperative' (p. 99). As the examiner is likely to appear 'receptive' to the 'helpfulness' of the examinee, in order to elicit optimal performance, the dissimulator may feel that they have been successful in their deception and that the examiner has been 'taken in'. However, this would not be the case if test performance was not consistent with expectations for the injury or impairment presented.

#### Basic Theme 14: Appearing to be trying

Basing their impression management strategy around the appearance of trying hard at the tasks and being cooperative, participants hoped to evoke feelings of empathy within the examiner, by appearing to be cooperating even though they were struggling:

182 Yeah. I was thinking that, if I didn't understand it I might  
183 just any, just give an obviously wrong answer, Yeah, to  
184 show that I couldn't understand what was going on....  
185 So I was a bit embarrassed that I was keep getting it  
186 wrong, but I was giving you some answer so that you  
187 thought that I was at least trying to do it right

*Steve*

14 as though I was genuinely trying to prove being able to do  
15 it

*Mark*

Participants used the impression management strategies, of trying to appear helpful and appearing to try hard, so that they would be believed and their honesty would not be doubted. Fakers often use this strategy to attempt to convince the neuropsychological examiner that they are being cooperative. This behaviour sits very much in line with Freedland's (1982) observation that malingering participants tend to present themselves as honest characters and behave in a way they believe will indicate that they are trying their best to solve a problem but are unable to do so. They accomplished this by using the 'Fractional effort strategy', distributing errors among the correct answers (Freedland, 1982).

#### 3.1.4 Counterfactual Strategies

Participants reported using strategies to manipulate the appearance of their situation that were in immediate opposition to the reality of their cognitive

capabilities. This counterfactual strategies organising sub-theme was broken down into two basic themes:

#### Basic Theme 15: Performing under natural ability

Deliberately performing under what they felt would have been their natural ability was frequently achieved by participants finding some way of making the task more difficult for themselves:

8 Erm... Basically sort of minimal lying..... Erm enough to  
9 sort of feel realistic, as if I was doing it from sort of my own  
10 level of, I don't know what you'd say, you know the way I  
11 remember things. Mmm. So I did it a little bit less than  
12 that.

*Judy.*

132 Yeah... So I suppose I was trying to do the same as I  
133 had done with the memory really, to do perform as I would  
134 have done but knock a bit off... So maybe sort of  
135 seventy percent of what I would have been expected to  
136 do.

*Steve talking about Figure Copy.*

As the inclusion criteria for participants in the present study stipulated that they must have no prior experience of undergoing or providing neuropsychological testing, a measure of their natural ability is an unknown quantity. Therefore attempting to perform under their natural ability was an interesting approach. Depending on participants estimations of their natural ability at particular tasks, performing under their natural ability may not have been enough of a decrement in their performance to give a realistic impression of a cognitive impairment or may have been too much to be seen as realistic. Ideal dissimulation involves performing sufficiently under optimal levels to indicate impairment but sufficiently well not to be detected (Den Boer

& Hall, 2007). As far as participants in the current study were concerned, producing such a performance would involve 'minimal lying'.

#### Basic Theme 16: Faking confusion

Feigned confusion or disorientation was a dissimulation strategy that was achieved on certain occasions by participants actually making themselves confused deliberately in order to fake bad:

142 thought I I quite liked doing that that way. I don't know if  
143 that would if I pulled it off or not. It could have done. Part  
144 of me thought, I wonder if that would have happened to  
145 someone that they would suddenly just get confused and  
146 forget and just carry on repeating.

*Louise.*

45 Well I hope that I managed to fool you a bit. Yeah.  
46 Probably not, but I thought that the way to do it was to do  
47 it so that I ended up getting muddled and I ended up not  
48 being right so it looked like I was not quite with it in the  
49 respect that I was a bit too slow and I was trying to think  
50 very hard and then I got muddled on a couple of things  
51 and that's why I got muddled on a couple of things.

*Sue.*

Freedland (1982), Goebel (1989), Iverson (1995), and Tan et al. (2002) all observed the deliberate use of confusion and disorientation as feigning strategies on neuropsychological tests. Participants who simulated confusion may have drawn on some prior knowledge they had absorbed from the popular media as it is relatively well known that disrupted cognitive functioning follows most forms of brain injury. Indications of this cognitive impairment usually manifest themselves in loss of focus, lack of concentration, distractibility, impaired multi-tasking skills, and memory difficulties that affect planning and organisational abilities (Mahar & Fraser, 2012).

## 3.2 Global Theme 2 - Rationale

The second global theme, Rationale, explores the thinking behind participants' choice of strategy based on the explanations they gave while describing the strategies they used. This global theme comprised one organising sub-theme:

### 3.2.1 Explanations Offered for Strategies Used

When describing dissimulation strategies, participants frequently offered explanations for their choices, allowing an insight into the thinking behind the strategies employed. This organising sub-theme comprised three basic themes:

#### Basic Theme 17: Making assumptions

Participants frequently employed their own assumptions to guide their dissimulation strategies. The majority of participants reported assumptions about how they thought having a brain injury (impairment) might affect one's performance. Some felt that, despite the contextual priming information, they must simulate impairment in all cognitive domains and others mentioned assumptions about normal performance, mostly underestimating it:

90 I didn't really want to know anything more than two  
91 numbers...[----- Interviewer speaks -----] Because I  
92 thought it was too much to remember more.

*Mary talking about word list delayed recall*

177 Trying to remember ten words in a row,  
178 there's not many people would be able to remember ten  
179 words in a row so even with head injury they're not going  
180 to remember ten words.

*Chris*

268 Well, I thought that most people would be able to get one  
269 or two

*Steve talking about word list delayed recall*

93 when people are taking tests and things  
94 they're usually under pressure... And of course  
95 they go blank.

*Fiona talking about word list recall.*

Everyday experiences of thinking and learning often lead to lay opinions and assumptions about how these skills would be affected in someone with a cognitive impairment. Some participants, for example, mistakenly assumed that their reading ability might have been impaired and performed poorly on the WTAR. However, it is well documented that over-learned skills, such as reading, are usually preserved except in the most extreme cases of dementia or severe head injury (Nelson & O'Connell, 1978). For this reason, tests such as the WTAR are widely employed to estimate pre-morbid functioning. Some participants grossly underestimated normal performance; believing, for example, that most normal people would not be able to remember more than a few words from a list. However, according to the RBANS manual, the list of words used in the current study are high in imagery and low in age of acquisition to reduce the affect of education upon performance (Randolph, 1998). For adults up to the age of 39 (47% of our participants), performance within the Average range would require them to recall seven or more words from the list of 10. For those between the ages of 40 and 69 (the remaining 53% of our participants), an Average performance would involve recalling at least six words. As a result of these faulty assumptions, participants would perform far too poorly to realistically simulate mild cognitive impairment.

#### Basic Theme 18: Using prior knowledge

Dissimulation strategies involving the use of prior knowledge, usually of memory, were frequently reported:

134 Erm... see I ... err... I used my own knowledge because I  
135 know the whole seven plus or minus two thing.  
136 So ... I thought I'll go with the lower end that's still  
137 plausible but low so I was sort of I think I stopped about  
138 five digits, I decided to get lost at that point.

*Louise talking about digit span.*

113 I was telling myself to remember the last number then start  
114 to forget the first number because you always remember  
115 the first.

*James talking about digit span.*

136 We did something at school erm I remember about the  
137 memory things and I just remember them saying that the  
138 last thing, if you can get a picture of that you'll remember  
139 that.

*Mary.*

Their broad span of ages, educational and occupational experiences meant that participants had accumulated a range of knowledge concerning the mind and the mechanisms of cognitive functioning. Opportunities to gain this knowledge came from school, college, university, and popular media (television programmes, books, and magazines). Participants reported having been exposed to well-documented affects such as primacy and recency and normal digit span (seven+/-two). Dissimulators gained a sense of security from knowing they were using information that was either 'common knowledge' or from sources they considered reliable. In some cases this information was only vaguely remembered. They confidently reported using strategies such as only remembering the most recent things they heard to perform poorly on tasks like word list recall and digit span. As in previous studies, these participants reported performing poorly on digit span, for example, believing it is measuring memory, rather than attention (Axelrod et al., 2006; Mittenberg et al., 1993). Participants who reported remembering only the first or only the last items on lists at recall were revealing themselves

by demonstrating unusual patterns of performance on the serial position curve, as observed previously by Suhr (2002).

### Basic Theme 19: Imitation

Imitation as a strategy for dissimulation, involved participants employing their own previous observations of children or people with cognitive impairments to help them decide how to behave:

58                    I actually ended up in my head with this image  
59    of a woman I know who has learning difficulties and I was  
60    thinking, what would she say. I was trying to kind of get  
61    into character.

*Louise.*

118    My Dad couldn't remember anything after a while, He can't  
119    remember. [----- -Interviewer speaks -----  
120    -----] I  
121    suppose a bit on him. I did yeah. I mean they just gave  
122    him three words but nothing two seconds later.

*Mary.*

14    It's. I mean it's very difficult to do actually.  
15    And when you're not aware of what people with, you  
16    know, certain impairments, how they would actually tackle  
17    something, erm it's quite difficult to know. Because  
18    sometimes, I mean I'm going back to my father actually  
19    used to suffer from these little tiny strokes which would,  
20    you know, transient ischemic attacks, lots of them. So  
21    each time a little bit of his memory would go, or some kind  
22    of function would go... and I was trying to sort of  
23    remember how he might have approached some of those  
24    things.

*Miranda*

Those participants who based their strategies for dissimulation around imitating children or people with cognitive impairments felt that this would be a more successful strategy as they expected that drawing on their experiential knowledge would be less challenging than creating an impaired identity from scratch. Although their strategies may be successful on some tests, where they may accurately imitate the correct symptoms, they may fail due to their lack of clinical knowledge, which would be revealed when attempting to simulate a head injury. This choice of strategy may give some insight into attitudes and beliefs around cognitive impairment; for example, that if one were to become cognitively impaired then one would also become childlike.

### **3.2.3 Global Theme 3 - Experience of Dissimulation**

The third and final global theme, Experience of Dissimulation, comprised three organising sub-themes exploring participants' reactions to the request to dissimulate, difficulties they reported experiencing when doing so, and their subjective experience of their chosen strategies failing through inconsistencies:

#### 3.3.1 Emotions and Reactions

Participants felt ambivalent about being asked to dissimulate, which often led to experiences of internal conflict, as described under five basic themes:

#### Basic Theme 20: Anxiety

Feelings of anxiety and physical tension were associated with the request to produce a dishonest performance on the tests:

- 288 Erm... I felt quite tense all the way through it.... Err  
289 and I could sort of feel it in my chest up here and all sort of

290 aware that I was hunching over... And being quite er,  
291 quite tense in all. Yeah.

*Daniel.*

350 Erm..... not really. But I think I felt slightly anxious that erm  
351 erm er I would not be able to keep it up. It was a a  
352 physical strain to remain consistent on something that isn't  
353 me. So erm there was a I wouldn't say it was a physical  
354 feeling it was a very mental exercise. Yep.

*James.*

The feelings of anxiety and physical tension associated with lying have been noted by Gray (2011). These emotions can be detected by shrewd observers as they are betrayed by facial micro-expressions lasting only a few seconds in a process called *emotional leakage* (Ekman & Frank, 1993). Participants felt that the task of dissimulation was physically and mentally demanding. Ross, Putnam, and Adams (2006) found that anxiety positively affects performance on easy tasks but negatively affects performance on more difficult ones. In light of this, any positive affect on normal performance that might have been produced by the anxiety of the testing situation would actually have been a hindrance to the dissimulator's attempts to perform more poorly, making the situation even more anxiety provoking. Anxiety and physical tension can manifest themselves in a number of ways and the clinician might be aware of certain behavioural indicators in someone undertaking these tests. However, it would be very difficult for the clinician to distinguish between natural and excessive anxiety without prior knowledge of the participant's base level of anxiety.

#### Basic Theme 21: Personal conflicts

Personal conflicts were experienced by participants in response to being asked to dissimulate:

226 A bit annoying in some ways because one would like to  
227 know exactly how they would perform. So if one's doing it,  
228 one's thinking to oneself erm its gonna come out poorly  
229 and as a person you just want to do your best. But if  
230 you're gonna do badly, you want to do your best badly! So  
231 so you're you're working out how you can do your best  
232 badly without erm making yourself look a complete idiot.  
233 But then you want to make yourself look a complete idiot  
234 so, there's quite a conflict going on in your head actually.

*Elizabeth.*

200 It just feels unnatural.... Because when  
201 someone asks you something, you want to do it right. You  
202 want to be helpful... I think. [*Interviewer speaks*] So it was  
203 actually quite horrible being put in that situation, where  
204 you're trying to ... yeah. It was a bit of a struggle to. I'm  
205 sorry! I'm not very good at lying.

*Mary.*

236 It felt weird not being honest and not doing things to the  
237 best of my ability. It goes against the nature of my nature.  
238 Probably most people's nature.

*Judy.*

Many of the interviewees felt ambivalent about being asked to dissimulate, which often led to experiences of personal conflict during the dissimulation. Some felt that they were intrinsically too honest to dissimulate well or that it was contrary to their nature not to perform to the best of their ability on tests. This is a finding consistent with other research in the field. Both Goebel (1989) and Freedland (1982) reported that many of their participants also struggled with dishonesty and felt motivated to try their best on tasks. In spite of these conflicted reactions to the task, it is interesting to note that all of the participants in the present study made some attempt to dissimulate on at least a few tasks. This is not an observation replicated in other studies, where

despite being given explicit instructions to do so, a number of participants made no attempt to dissimulate (Freedland, 1982; Goebel, 1989).

### Basic Theme 22: Suppressing abilities

Participants described struggling to suppress particular skills or characteristics while dissimulating:

142 frustrating because you're... I'd made my decision I was  
143 going to go very slow on everything and speak precisely  
144 and go slow and it, it is not in my nature to go slow...

*Sue.*

105 And it would be an in-grained skill, numbers you  
106 play with numbers all the time ... and I was ... That took a  
107 lot of thinking about and I'm not sure if I played that as  
108 genuinely as I should have done

*James.*

The natural or learned abilities participants brought to some tasks were difficult for them to conceal. Artistic abilities, for example, were difficult to suppress when completing the drawing tasks. Others who had occupations that employed certain skills, such as working with numbers, on a daily basis, found it difficult to perform poorly on tasks such as digit span backwards, where the manipulation of numbers is a core component. For people who normally think quite quickly, suppressing personal characteristics might have involved pretending to think slowly in order to produce a more hesitant or time-poor performance, which they found cognitively demanding. This finding corresponds to Goebel's (1989) report, that dissimulators found some tasks too easy to fake bad.

### Basic Theme 23: Genuinely struggling

On tasks they felt they would genuinely struggle with, participants described performing as they normally would, making no effort to dissimulate and embracing their mistakes:

132 No. I thought if I draw it, my drawing's not very good. So I  
133 thought just draw as you would think. I knew that there  
134 was something else here but I couldn't recall what it was.

*Fiona talking about figure copy.*

40 Yeah with that one I was quite honest. Yeah. But I don't  
41 pronounce things well and I can't do it that well anyway so.

*Judy talking about the WTAR reading test.*

127 I got that completely wrong! *[Interviewer speaks]* Genuine  
128 mistake. Complete and utter genuine mistake, yes.  
129 *[------ Interviewer speaks -----]* I'm  
130 completely rubbish at doing reverses of numbers!

*Daniel talking about digit span backwards.*

Several participants commented about shortfalls in their natural ability in specific tasks. They did not appear to find their shortcomings concerning and, in fact, sounded relieved that when tasks seemed to involve those abilities with which they normally struggled, as they would be able to under-perform without very much effort. Pretending the testing is too hard has been reported previously as a strategy for feigning memory impairment (Iverson, 1994). However, observation of this type of performance could be genuine, rather than an indication of dissimulation, as reported by several participants in the present study.

## Basic Theme 24: Residual effects

Residual effects from dissimulation, such as difficulties de-rolling, continued involuntarily after the test had ended. Participants also described residual effects common to test-taking conditions, such as persisting desire to know if they had responded well to the request to fake bad:

298 Afterwards I started I was thinking slow and I think it was a  
299 bit strange feeling that I was erm. Because I'd got myself  
300 in the frame of mind of almost having a learning disability  
301 or something and I found myself thinking like that and  
302 finding it hard to get out of character but at the same time  
303 feeling like that would actually be quite obvious to anyone  
304 that knew me.

*Louise.*

259 No I think that's erm... It would be quite interesting to  
260 know how well, how badly I did and would I have got  
261 myself out of work?

*Daniel.*

Dissimulating has a similar effect to a method actor immersing his or herself into their character and some participants found that it took a little time for them to de-role after the completion of the testing. The effect, although short term, should not be underestimated and time was taken in allowing the participants to talk through their feelings about their experience. This effect has also been noted by Merckelbach et al. (2011), in their laboratory studies using non-clinical samples. Other participants spent time following the test in a state of curiosity about whether they were able to succeed in their attempts at faking and whether they would have been caught out. This is considered a natural consequence of trying to succeed at the task and time was given to allowing participant to talk about this and ask questions in the debriefing time following the interview.

### 3.3.2 Experiencing Difficulties

There were a number of ways that participants experienced difficulties when attempting to dissimulate on the neuropsychological tests. These are split into four basic themes:

#### Basic Theme 25: Finding it difficult to fake bad

Participants reported finding it difficult to fake bad, particularly at tests involving skills they felt they would ordinarily excel at. Some found themselves having to employ extra strategies to prevent themselves doing well on those tests:

51 Ah erm... That's really hard because ... having done  
52 English at Uni words are my thing! So I just read them and  
53 I found it really hard to fake not being able to read them,  
*Louise talking about the WTAR reading test.*

238 its very difficult because erm... er that challenge I had is  
239 my job involves understanding space and understanding  
240 numbers.

*James*

The fact that participants in this study reported finding it difficult to fake bad is consistent with the previous study by Goebel (1983), who found that 30% of his participants became too involved with the testing procedure to fake. Similarly many of the participants in the present study found that the tests were not challenging due to their prior knowledge or occupation and felt that they were too easy to allow successful faking; a finding that has also been observed in previous research (e.g. Goebel, 1983).

### Basic Theme 26: Finding it hard work

The task of dissimulation was generally found to be hard work:

284 Err it was difficult. A lot more difficult than I thought it was  
285 going to be. I think when you're trying to get things wrong  
286 on purpose, the right answer immediately comes into your  
287 head first. You then have to discard it and make  
288 something credible up afterwards. So, it's erm, it makes it  
289 three times the work of getting it right, if you like.

*Jon.*

274 Erm... It wasn't easy. I mean I had to try and think what  
275 my strategy was all the time... and try and see how I  
276 could work it in. I then had to consider, was it relevant to  
277 muck up this particular part; does it fit in with the strategy?

*Barry.*

The hard work involved in lying was surprising to the majority of participants who did not realise that this would be cognitively demanding. Any form of lying will be cognitively demanding as the act of concealment, of emotion or ability, requires a great deal of attention (Gray, 2011). Evidence of cognitive overload caused by having to work too hard at relatively straightforward tasks could provide evidence of dissimulation. Tan et al. (2002) found that successful dissimulators had been those who had reported monitoring themselves very closely throughout the process.

### Basic Theme 27: Not knowing what to do

Being uncertain of what to do in order to dissimulate was common, as participants were unsure what type of injury they should fake and did not know what a realistic performance would look like:

7 I wasn't sure how I was going to approach it. Actually erm  
8 because ... I wasn't sure what kind of role I was playing, if  
9 you like and what kind of injury I was trying to fake. Erm so  
10 it made it quite difficult I suppose without having done prior  
11 research into what exactly I was trying to fake if you like.

*Jon.*

7 Erm... I really didn't know if I was sort of over or under  
8 doing it with the accuracy. It was quite hard to gauge how  
9 much of that, if you do have a head injury, how much you  
10 would remember.

*Louise.*

These participants who felt unsure of what to do in order to dissimulate were uncertain of how they could guarantee a realistic performance. They had not necessarily been exposed to people with cognitive impairment and, despite the contextual information sheet, felt that their performance would be more believable had they had time to research a particular condition beforehand. Participants who have taken part in previous research in the area of dissimulation have often had the benefit of formal coaching and exposure to people with cognitive impairment (e.g. Den Boer & Hall, 2007; Suhr, 2002) and it is possible that they would be better able to produce a more equitable performance.

#### Basic Theme 28: Having second thoughts

Having second thoughts lead to participants changing their minds about the strategies they were using, either during or after the tests:

176 Do you know, what I did, which I probably thought maybe  
177 someone would read too much into it and then I started  
178 thinking. So what I started I started doing was go for the  
179 beginning of the alphabet, go for the C A words.

180 And then I thought, I'm being too sophisticated with this  
181 approach so then I started naming things I could see in the  
182 room.

*Mark talking about verbal fluency.*

121 But maybe I went a bit over the top with some of the more  
122 regular items, such as pencil. You know, maybe giraffe  
123 and trumpet and things like that, I still could have got  
124 wrong. I said colander for trumpet. But erm yeah you  
125 know, some of the more common things, perhaps if I was  
126 to do this again I probably would get the common things,  
127 the really common things right and get the other ones  
128 wrong.

*Jon.*

70 I think the first one I tried to do well. *[Interviewer speaks]*  
71 The second one I sort of had second thoughts about what  
72 I was doing and I'm not one for remembering vegetables  
73 very well.

*Fiona.*

At the beginning of the session, participants had decided to employ a particular approach but later had second thoughts about the strategies that they had used. Some participants changed their minds mid-test on certain tasks, believing that their approach could be seen as too sophisticated, and therefore, decided to alter their method of dissimulation part way through. Post test, other participants, reviewed their strategies and found them lacking. These participants reflected that if they were to attempt the test again, they would utilise alternative methods. Iverson (1995) asked simulators what they would do differently if they were to attempt the task again, however, the majority of their participants did not suggest any additional strategies and according to Iverson (1995), those that did could not express their ideas in a meaningful way and therefore they were not reported.

### 3.3.3 Strategies Failing

Participants noticed that their chosen dissimulation strategies were not as robust as they had hoped during the course of testing. These experiences of strategies failing were separated into four basic themes:

#### Basic Theme 29: Things slipping out

While trying to dissimulate, participants found that the correct answer tended to slip out unexpectedly:

51                                   That's kind of difficult because May to me  
52    is my Mum's birthday so I was desperately trying not to  
53    remember May. But then it sort of popped out and I  
54    thought, oh no.

*Mary.*

As deception incurs high cognitive demands, the truth tends to leak out in verbal slips and speech errors, especially when the dissimulator is feeling under pressure (Gray, 2011). Freud first proposed that errors in speech or action, such as slips of the tongue (parapraxis), revealed some unconscious train of thought guided by the super-ego, which guides correct behaviour (Freud, 1915/1981). This concept has pervaded popular culture as a hall-mark of the truth 'slipping out'.

#### Basic Theme 30: Forgetting to simulate

Instances of forgetting to simulate on particular tasks were described throughout the testing session:

29    Err. At first I sort of forgot. It was almost like I would just  
30    answer I was thinking just answer those and then then  
31    start putting it on. And then I suddenly remembered that

32 oh if this is the start I ought to be acting a bit slower or  
33 whatever already erm.

*Louise.*

151 Well, I completely forgot myself because I was enjoying it!

*Fiona.*

Forgetting to simulate was sometimes attributed to the novelty of the task, causing the participant to temporarily forget their dissimulation strategy. Others described becoming so involved in the test taking activity that they forgot to dissimulate entirely. These reports are consistent with previous research by Freedland (1982) and Goebel (1989), who found that a number of participants became so involved in the tasks that they forgot to fake bad.

#### Basic Theme 31: Being drawn to the correct answer

Participants reflected that they often felt drawn to the correct answer and had to struggle against the urge to give the correct response:

242 Yeah. Well maybe with the ones where I  
243 had to point, maybe I was naturally drawn to the one that I  
244 thought was right but.

*Judy.*

284 Err it was difficult. A lot more difficult than I thought it was  
285 going to be. I think when you're trying to get things wrong  
286 on purpose, the right answer immediately comes into your  
287 head first. You then have to discard it and make  
288 something credible up afterwards.

*Jon.*

They struggled with themselves to give the wrong answer in particular circumstances, where they planned to dissimulate but the first thing that occurred to them was the correct answer. These situations often involved personally salient information and, therefore, might represent another example of Freud's idea of parapraxis, as previously discussed. Freedland (1982) suggests that it is almost impossible to 'guess' when the correct response is known. This would also increase the reaction time of their responses as it takes a longer time to process the automatic response (the correct answer), then suppress it and arrive at a suitable and credible alternative (Gray, 2011).

### Basic Theme 32: Inconsistencies

Reported inconsistencies in performance reflected both consciously chosen and haphazard dissimulation strategies:

178 Yeah. Well I decided I know I did badly on that because I  
179 decided to go for the middle ones of the one set as though  
180 it was too difficult to remember and too much effort. But  
181 then I thought to myself, that's too obvious, so then I  
182 decided to do some right and some wrong.  
183 [----- Interviewer speaks -----] Yes yes. So all the way  
184 through I've done one lot correct, one lot slightly wrong, so  
185 it doesn't look too obvious that everything's wrong.

*Elizabeth.*

Participants described inconsistencies in their performance, stating, for example, that they used different strategies for two trials of the same test. They did not all say whether those inconsistencies had been a deliberate attempt to feign cognitive impairment but they reported deliberately changing their approach during their performance of certain tasks. Others decided to be inconsistent in their approach during the battery of tests. Participants who

identified being inconsistent when taking a test with two trials approached the first trial using a particular strategy and the second trial using a counter strategy. They presumed that this inconsistency in approach would be a benefit in dissimulation as they felt sure that someone with a cognitive impairment might behave in this way. As two tests measuring the same attribute should produce consistent results (Hall & Poirier, 2000); this revealed a failure in their strategy to dissimulate, which was not recognised by the participants.

## **4. CONCLUSION**

What strategies do people use to simulate cognitive impairment when undertaking neuropsychological tests? The findings indicate that people use a wide range of strategies for dissimulating on specific tests within a given battery, as well as using general strategies throughout the testing session to manage their performance on the test battery as a whole. When describing the strategies they used, participants frequently provided an explanation of the rationale behind their choices. They spoke both of strategies they used to alter their task performance and to influence the impression they made upon the examiner. They talked about managing the relationship between themselves and the examiner by using strategies to try to generate a particular state of mind in the examiner, such as empathy and belief in the integrity of the participant's character. This chapter will outline the implications of these findings, examine the limitations of the present study, and make suggestions for improvements and further research.

### **4.1 Summary**

The findings of the present study suggest that people attempting to simulate cognitive impairment can supply valuable first-hand accounts of the strategies they used, the rationale behind their choices, and their experiences of dissimulation. These observations have important implications for the detection of malingering and in particular for neuropsychologists who advise on compensation claims and act as expert witnesses in forensic and medico-legal settings (see Section 4.2 below).

#### **4.1.1 Using Strategies**

The findings of this study confirm that dissimulators employ strategies to help them in their attempts to feign cognitive impairment. Specific strategies that bias responding on particular tests within a given battery are used judiciously,

while more general strategies are applied across the entire battery to produce an overall desired effect. On specific tests, participants reported using intrusions, adding erroneous details (on tests such as story recall) and false positives (on tests such as list recognition). The latter is a dissimulation strategy that has not been widely reported in previous literature. Erdal (2009) observed that type of motivation to deceive can affect performance strategy. He suggests that errors of commission, such as intrusions and false positive identifications, are more likely to occur when deceptive behaviour is motivated by attention-seeking rather than external gain. Participants in the present study were not motivated by material gain, as the scenario made no mention of the possibility of compensation and they received no recompense for taking part in the study.

Deliberate production errors were also reported by participants feigning memory impairment, particularly on complex figure and story recall tasks. There has been little prior research on recall of complex figures or prose passages and none whatsoever on item placement. Further investigations in this area might be a valuable resource for discovering more useful information about deceptive behaviours on neuropsychological tests.

Specific test strategies involving errors of omission and Ganserism, reported in previous research, were substantiated by the present study and remain important observations. Participants producing errors of omission left items out during word list recall and failed to reproduce parts of the complex figure on the recall trial. Those employing Ganserism gave answers that approximated but did not match the correct answer on tests such as picture naming and story recall.

Participants also reported generating response patterns to ensure that a suitable proportion of their answers were incorrect; a phenomena that has not been observed previously. On certain tests, this strategy is likely to have produced improbable performance patterns, which could lead to identification of dissimulation. On those tests where improbable performances are less likely to be revealed by examination of the scores, a visual appraisal of the

examinee's responses could be more revealing. Simple numerical patterns, such as choosing the third item from each group or alternating between correct and incorrect answers, may produce a chance-level performance but would be easily identified on inspection. More elaborate strategies can lead to patterns that are much less easy to spot. For example, the participant who reported selecting the darkest picture from each group, on picture recognition, would have produced a response set that appeared numerically random. However, further examination of those responses in relation to the stimulus material would have revealed an obvious pattern. This finding has implications for the way that clinicians examine test performance. Clinicians could routinely examine stimulus materials in relation to test responses, for example, in order to identify patterns that are not immediately visible.

Certain 'generalised' strategies across the entire battery were utilised in the hope of demonstrating the impression of particular cognitive difficulties or specific impairments. All of those participants in the present study, who chose to feign a specific impairment, chose to dissimulate in the memory domain. Feigning memory deficits is widely reported in the literature and many previous studies have concentrated entirely on this strategy, possibly because of the availability of lay knowledge and media coverage relating to memory failure. Participants used their own knowledge, especially in the field of memory, to guide their dissimulation strategies. Previous research has shown that misapplication of known effects such as primacy and recency can lead to implausible performances on tasks such as digit span and peculiar effects on the serial position curve (Suhr, 2002). Therefore, the present study substantiates the implication from previous research that studying inaccurate beliefs about amnesia could be a promising avenue to improving the detection of malingering (Horton et al., 1992; Martin et al., 1998; Wiggins & Brandt, 1988).

The present study substantiates the findings of previous research suggesting that dissimulators use certain general strategies throughout the testing process. Specifically, participants feigned symptoms of dysexecutive syndrome (such as impulsivity and frustration), were deliberately slow, feigned

attention or concentration problems, and attempted to sustain consistency. Although these particular strategies may be difficult to detect, Resnick (1997) cautions that simulators are often unable to maintain their behavioural pretences on an ongoing basis. Clinicians should, therefore, continue to be vigilant during testing for signs of exaggeration and faking through observation of life-test discrepancies and behavioural inconsistencies.

The un-coached participants in the present study attempted to estimate the complexity of individual tasks in order to decide whether they should perform well or badly on each one. It is very likely that their estimations of the complexity of some of the tasks would have been affected by their knowledge of their own personal strengths and weakness and by their estimation of normal performance. Participants' estimations of complexity might have been altered if formal coaching, beyond the contextual information supplied, had been provided, as it has in other studies in this area. Although task perception has not been formally investigated in previous research, it has been considered. Some tests, such as the Rey 15-item Memory Test (Boone et al., 2002), are deliberately arranged to appear complex when they are actually very simple and vice versa. More formal study of examinees' ideas about the purpose and complexity of neuropsychological tests might generate new methods for identifying dissimulators whose strategies rely on misperceptions of task complexity.

Previous research by Freedland (1982), suggesting that malingerers often present themselves as honest and superficially co-operative in order to evade detection, is supported by the reports of dissimulators in the present study. These behaviours are designed to evoke feelings such as empathy and trust in the examiner that may lead to barriers to effective clinical judgement, as suggested by Millis and Putnam (1996). Impression management strategies, such as appearing to try hard and presenting as of honest character, might lead to attribution errors and confirmatory biases that hinder accurate identification of potential malingerers. The implications of this finding for rapport building during testing are substantial. The clinician must establish a suitable level of rapport to sufficiently engage genuine patients in the testing

process while guarding against their own reactions to possible impression management strategies. Further research is necessary to identify suitable techniques for building rapport without compromising clinical judgement.

Strategies that produce counterfactual effects are employed by dissimulators to enhance the production of a sub-optimal but credible performance. Performing under their natural ability was a strategy that, although implicitly being used in previous research, has not been explicitly studied or formally discussed. Participants in the present study reported choosing to perform slightly under what they believed to be their natural ability, in order to achieve the optimal level of underachievement described by Den Boer and Hall (2007). Neuropsychological examiners should, therefore, be vigilant for signs of deliberate underperformance, which may be revealed when feigners using counterfactual strategies fail to maintain the desired balance of underperformance and believability.

#### 4.1.2 Rationale

The interview questions were posed in such a way as to encourage participants to comment on the rationale behind their dissimulation strategies. The explanations of their rationale frequently revealed the assumptions and attitudes they held about cognitive impairments and normal abilities. For example, participants often reported incorrect assumptions about which skills would be affected by a brain injury and underestimated normal performance on various different tasks. Participants who described forgetting to simulate on specific tasks, inadvertently exposed their belief that they 'should' have been dissimulating or doing badly on every test in the battery to successfully feign cognitive impairment. However, evidence points to the contrary, as suboptimal performance in multiple domains is considered to be a potential indicator of malingering (Oorsouw & Merckelbach, 2010). Dissimulation based on imitation of cognitively less able people, such as children or people with learning disabilities, is a novel finding in this research area. While it is not possible to speculate as to whether this would have yielded a credible performance in practice, it would seem likely to produce a performance that

would not be accounted for by mild cognitive impairment. Discovering more about inaccurate beliefs and attitudes regarding both normal and impaired cognition has important implications for the study and detection of malingerers in practice.

#### 4.1.3 Experience of Dissimulation

As in previous research (e.g. Goebel, 1989), tasks that lent themselves to dissimulators' natural abilities were most difficult to fake bad. Therefore, an estimation of the likely skills and talents of the examinee might enhance the ability of the testing clinician to detect dissimulation. A detailed examination of a patient's educational and occupational background is usually included in a pre-test clinical interview but additional knowledge of their outside interests and hobbies might reveal something more about their talents and abilities that could aid clinicians in detecting individual dissimulators.

Participant reports of having 'second thoughts' about the strategies they chose, either during or after testing, is also consistent with previous research (e.g. Iverson, 1995), although there has been little meaningful data to draw upon. Participants in the present study described inconsistencies in their performances in a way that implied they were deliberately producing an inconsistent performance across the entire battery. Freedland's (1982) participants also reported being inconsistent as a feigning strategy, as well as reporting that consistency was important. Although participants felt that someone with a brain injury would perform inconsistently, their dissimulation would be revealed by inconsistent performances on multiple tasks measuring the same ability. Dissimulators in the present study also reported experiencing their planned strategies failing, for example because they had accidentally vocalised, or were drawn to, the correct answer. This is a novel finding with implications for clinicians working in neuropsychological testing as failures of this kind, if noticed, could reveal that strategies were being used to distort test performance in some way.

## 4.2 Implications for Clinical Practice

The present study constitutes a more thorough and in-depth qualitative study in this area than any that have been disseminated previously. Knowing more about the strategies and rationale used by those attempting to feign cognitive impairment will be helpful to practising neuropsychologists in determining the malingered or factitious presentations from the genuine cases. Using this knowledge to develop more effective methods for identifying dissimulation should also make it easier for those in genuine need to access NHS services. With little previous research on feigning strategies, and that existing being mainly quantitative, the present study has extended the knowledge of clinical psychology in the area of dissimulation. The addition of a qualitative perspective has moved the profession a step closer to developing more sophisticated and less cumbersome methods of detection.

Both the AACN and the BPS agree that embedded tests on standard measure are the most valid indicator of performance validity (BPS, 2009; Heilbronner et al., 2009). The findings of the present study have revealed numerous potentially useful identifiers of test strategies used by dissimulators on standard neuropsychological tests. These include many not previously reported:

- Intrusions
- False positives
- Production errors
- Response patterns
- Random guessing
- Performing poorly on tasks appearing complex
- Feigning tiredness
- Performing under natural ability
- Imitating someone else (e.g. child or person with LD)

Those strategies and reactions that have been suggested by previous research are substantiated in the present study with greater qualitative detail:

- Errors of omission
- Approximate answering
- Symptoms of dysexecutive syndrome
- Being slow
- Showing attention and concentration difficulties
- Consistently poor performance across the battery
- Changing strategies
- Impression management
- Feelings of ambivalence

The AACN also suggests life-test discrepancies and implausible performance patterns should also raise alarm in clinicians working with potential malingerers. The present study describes patterns of responding, methods of reasoning and other supplementary information from dissimulators that could be used to enhance our ability to determine which improbable performances are truly a result of malingering. The BPS also recommends consideration of information from the clinical interview and the patient's social and occupational background in the identification of malingering. We can add to this recommendation by suggesting some investigation of the person's pre-morbid talents and abilities outside the professional and educational sphere to enhance our impression of what their particular skills should be and whether it is likely they have been compromised by injury.

The findings of the present study suggest that examinees' ideas about the purpose and complexity of individual tests, as well as their knowledge and assumptions about impaired and normal performance, play a vital role in determining the way they undertake dissimulation. This knowledge could have a significant impact on the way that neuropsychological testing sessions are conducted. A short post-test interview, for example, could be introduced to elicit examinees' impressions of what the different tests were measuring and their ideas about task difficulty. More focused questions on areas where they performed very poorly might reveal faulty assumptions a dissimulator has tried to use to their advantage.

### 4.3 Limitations

Qualitative research overall has been criticised for being unscientific and non-generalisable due to its dependence on small samples (Hamel, Dufour & Fortin, 1993; Yin, 1993, 1994). Thematic analysis in particular has been criticised for its lack of clear guidelines (Fereday & Muir-Cochrane, 2006). To address this criticism, Braun and Clarke's (2006) guidelines were employed to ensure standardisation of procedures in the present study. However, critiques surrounding researcher bias, small sample sizes, and non-generalisability still apply. In order that important and subtle details of the data were not overlooked, it was necessary to adopt both a broad and detailed approach. In order to achieve that, it was necessary to use a relatively small sample size. We, therefore, do not know whether the strategies and thinking reported by participants in the present study are typical of those employed by other people attempting to dissimulate on neuropsychological tests.

Aguinaldo (2012) criticises thematic analysis, saying that 'when encountering data that constitutes a dilemma of voice, thematic analysts simply avoid or censor that data' (p. 771). As there were no data in the present study that were considered problematic in terms of anonymity or confidentiality, no overt attempt at censorship was employed at the transcription stage. However, whilst every attempt was made to retain transparency in the analysis, subtle censorship, of which the researcher is unaware, may have taken place at the coding stage.

Ideally, to ensure optimal standardisation of procedures, the cognitive tests for all participants would have taken place in the same location, preferably a clinic room. However, in order to encourage participation, reduce travel expenses and make participants feel as comfortable as possible, the testing and interviews were conducted at either the participant's or the researcher's home. Although the interviewer ensured that all of the testing and interviews took place in a quiet, private room, free from distractions with adequate time available, the circumstances and time of testing were often very different. Some participants, for example, took part in the morning, after a good night's

rest, while others took part after a busy day at work. There is a body of literature exploring how time of day affects cognition (see Schmidt, Collette, Cajochen & Peigneux, 2007, for a review). Lezak et al., 2012, for example, suggest that neuropsychological test scores tend to be lower in the afternoon, due to fatigue or variations in diurnal rhythms. Although the time of testing may have influenced participants' performance on the RBANS, quantitative analysis of test scores did not form part of this research. Tiredness may have affected the way in which participants chose to perform and the level of effort they were able to apply to both the testing and the interview. However, although some participants reported feigning tiredness as a dissimulation strategy, none reflected on whether they were actually tired whilst taking part. Therefore, this would appear to be a separate issue to participants' self-reports about the strategies they chose to use to under-perform during testing.

The analysis covered interview data from the entire cohort and no examination of the test scores was used to separate those participants who would have dissimulated successfully and those who would not. Please see Section 4.5 for further discussion of this issue.

As there were very few exclusion criteria for participation in the present study, it was not difficult to find people willing and interested to take part. Many commented that they found themselves very curious about what the tests would encompass and what dissimulation strategies they would choose to employ and expressed high levels of motivation to participate. However, as with any research investigation where participation is voluntary, this produced a self-selected sample. It has been suggested that responders tend to be more agreeable and open to new experiences than non-responders (Marcus & Schutz, 2005). Non-responders in the present study appeared to have more concrete and personal reasons for non-participation. For example, one potential participant refused to take part because he was concerned that it would be possible for the interviewer to 'see inside my soul'. Another was offended by the premise of the research because he had previously experienced having to 'prove' that a physical injury prevented him from working and found it distressing to think about the idea of dissimulation.

To increase generalisability, a sample of participants should be recruited that adequately represents the target population in terms of demographics, such as age, socio-economic background, and education (Patel, Doku & Tennakoon, 2003). The target population in this research were adults within the general population who, in their lifetime, could acquire a brain injury. To ensure that the participants in this research represented the target population in age, location, and socio-economic background, convenience sampling was undertaken. Participants were identified from different areas of the country by means of the *snowball* sampling technique (using informants to identify further participants that would be useful and available to include in the research). This strategy has the disadvantage of including the exposure of the initial contact's membership of a hidden population when recommending others and the recruitment of participants who represent only a sub group (Becker, 1963; Brooks, 1998). This was not considered a problem in the recruitment of this sample as the population was not considered to be a "hidden" population. As some members of the population have no chance of being chosen, the extent to which the sample represents the entire population cannot be known (Biemacki & Waldorf, 1981). A further limitation of convenience and Informant driven sampling comes from the interactions that occur between participant and researcher, or participant and participant, prior to the interview. These earlier dialogues penetrate the interview, meaning that interaction during the interview is not a sterile or virgin encounter (Noy, 2008).

It has been suggested that the presence of the researcher during data gathering, which is often unavoidable in qualitative research, can affect participants' responses (Anderson, 2010). In the present study, the entire process, from recruitment to analysis was conducted solely by the author. Having the researcher deliver the neuropsychological testing session and also conducting the interview meant that they were aware that the examiner knew that they were attempting to dissimulate. This personal contact may have affected the way that they planned and carried out their dissimulation and the way they reported on their experience in the interview. Although internal consistency is enhanced by having just one person collecting interview data

and carrying out the analytic process, it fails to provide the multiple perspectives that a team of researchers with differing expertise could have provided.

#### **4.4 Critical Reflections**

Anderson (2010) suggests that the quality of qualitative research is dependent upon the individual skills of the researcher and is more easily influenced by the researcher's personal biases and idiosyncrasies than research using other methods. The author's involvement in this area of research began through volunteering for a charity, supporting people with a Traumatic Brain Injury (TBI), as they worked towards social rehabilitation. Through this work, the author encountered many deserving people who had been denied their claims to legitimate financial benefits due to their inability to demonstrate their impairments in a manner considered satisfactory by particular authorities. While I observed the claims of legitimate individuals being rejected, it seems likely that elsewhere, skilled malingerers feigned impairments to falsely claim valuable resources. It therefore seems vital that we develop more effective methods for determining genuine from malingered cases of cognitive impairment, so that available resources can be allocated effectively.

It has been suggested that qualitative research can achieve general applicability as a result of the methodological qualities and the rigour with which the study is constructed (Yin, 1989). Yardley (2000) proposes four flexible principles to guide the production of valid and rigorous qualitative research. The first principle, *sensitivity to context*, is shown by the extensive literature review presented in Chapter 1, which demonstrates a solid understanding of relevant theory and literature in the research area. The socio-cultural positions of the researcher and participants are considered both in the Method section (Chapter 2) and in the Limitations section of the current chapter. *Commitment to rigor* is established through adherence to the 15 point checklist of criteria for good thematic analysis suggested by Braun and Clarke (2006). This check list was used to evaluate the process of analysis and write

up in order to ensure consistency and quality. This research complies with the criteria for *coherence and transparency*, by demonstrating transparency in the application of the research method and data presentation (described in detail in Chapter 2). Reflexivity is demonstrated through acknowledgement of potential professional and personal biases throughout this thesis. The impact and importance of this research in developing new knowledge in the area of malingering cognitive impairment and its detection has been discussed in relation to the potential benefits to clinical psychology, as a profession, as well as individual neuropsychologists working in forensic and civil settings.

To overcome the criticism that most studies of dissimulation generally use students as participants, members of the general public were approached for the present study. Only those who were interested and willing to take part were involved and this excluded many other people whose responses would be of value. Cohort effects may have influenced the data due to ethnicity of this sample being solely White British. The researcher's gender, ethnicity, and social class can influence the relationship between themselves and the participants. As the researcher and the participants were all of similar ethnicity, it is felt that this did not compromise the research. However, the differences in gender and social class may have had some influence. Despite the researcher's best efforts at equalising the intercourse between herself and the participants, a power imbalance was still revealed in particular comments. For example, when Sue was asked whether she felt she would have been good at a particular test if she had not been feigning, she responded '*I don't know. I don't know but you know.*' (Sue, line 98). This seems to indicate that participants felt the researcher would know more about their natural abilities than they themselves. The fact that a small number of participants were known personally to the researcher may also have influenced the data collected for this research. Louise, for example, when asked if she felt her dissimulation strategies were successful, responded '*And if the person didn't know me, I might have got away with it.*' (Louise, lines 20-21).

It is difficult to engage individuals who have falsely presented or exaggerated impairments in the past to take part in research. We must, therefore, consider

to what extent the findings from an experimental study can be generalised to real life situations. Interview data from simulators may not reveal themes that are transferable to genuine malingered or cognitively impaired presentations. Using a simulator design, where there are no potential costs to participants failing to feign skilfully and no double-blind testing, weakens its transferability to a genuine cognitively impaired population (Vickery, Berry & Inman 2001). The outcomes of the research may have been different if genuine clinical samples had been used, but, as discussed in Section 1.6.1 there is no way of determining if the clinical samples are genuine or have malingerers within them. However, experimental designs employing simulators remain the most widely used method in this area and demonstrate high internal validity (Lezak et al., 2012).

As the inclusion criteria for this study stipulated that participants should have no prior experience of neuropsychological testing, to minimise practice effects, there existed the possibility of discovering genuine cognitive impairment in some participants. This raises an ethical issue, in that it would not have been possible in this study to distinguish between participants who were successful feigners and those with a genuine, but as yet unidentified, cognitive impairment. Appropriate steps were taken to attenuate this risk by excluding potential participants with prior neurological disorders of any kind, regardless of whether they reported any long term sequelae and choosing a sample of working age. It is possible that people with known cognitive impairments or learning difficulties excluded themselves from the study (see Section 2.6).

Participants were aware that the examiner knew that they were attempting to dissimulate. This may have affected the way that they planned and carried out their dissimulation and the way they reported on their experience in the interview. Participants' motivation to participate might have determined who was willing to take part and, therefore, the type of strategies and thinking styles that were revealed in the analysis. As discussed above, participants in this study produced errors of both omission and commission, which suggests the presence of both internal and external incentives to deceive (Erdal, 2009). Participants who stated that they wanted to take part because they thought it

would be fun and those who expressed a desire to be helpful to the researcher, for example, could have been motivated by internal incentives, such as pleasant feelings. The small number of participants known personally to the researcher may have been consciously or subconsciously motivated not only to help but also to please the researcher. Pleasing the researcher could have been an external incentive for participants if they felt that enhancing that relationship in this way would have some long term advantage. Offering financial remuneration or some other material gain would have ensured that participants were motivated to under-perform by external incentives. However, this would not have negated the possibility of unknown internal incentives existing within the participants.

Research in the area of disease deception, which makes use of simulators, necessarily involves participants being given some instructions to alter their behaviour in a particular way. In the present study, participants were asked to 'alter their performance on the [cognitive] tests to suggest that their thinking had been adversely affected by a mild brain damage'. Previous literature in this area does not explicitly discuss the validity and reliability of the instruction to 'feign' but some studies have considered this by investigating whether participants have obeyed the instruction or not (e.g. Rogers, 1988; Tenhula & Sweet, 1996; Suhr & Gunstad, 2000). As the present study concentrates on participants self-reports of their own behaviour, this was not an issue that was dealt with in the present qualitative study but will be considered in future quantitative research using data gained from the cognitive testing.

Considering the reliability of this instruction to 'alter' performance, we must ask whether the question is internally consistent and stable. It is possible that each participant constructed the meaning of the instruction differently and, therefore, the instruction itself may not rate highly for internal consistency. In terms of stability, each participant is likely to interpret the instruction the same way if they were asked to complete the task again in the future, but may choose to respond differently. This is not considered problematic as replicability is not expected in qualitative research (Seale, 1999). Considering validity in terms of whether the instruction produces the effect that was intended, depends on there being an agreed meaning for the construct in

question. It was hoped that validity was enhanced by the 'spelling out' of the instruction to fake bad very specifically, by asking participants to 'alter their performance to suggest that their thinking had been adversely affected', rather than using constructs such as 'malingering' or 'feign'.

#### **4.5 Further Research**

The themes relating to dissimulation strategies presented in the current study resulted from the analysis of interview data from the entire cohort, regardless of whether they dissimulated effectively or not. In order to improve the present study, it might have been useful to separate those who dissimulated successfully from those who did not by examining their scores on the neuropsychological test battery, as suggested by Den Boer & Hall (2007). This could have been achieved by calculating the RBANS Effort Index (Silverberg et al., 2007) and the Reliable Digit Span sub test of the Wechsler Adult Intelligence Scale (Larabee, 2007). By this means we could have analysed the self-reported dissimulation strategies of successful dissimulators only. One drawback of this suggestion is that a much larger cohort would have been required to ensure that data from a reasonable number of 'successful' dissimulators could be included in the thematic analysis.

To overcome the previously stated limitation of participants being asked to dissimulate by the person who acted as the examiner, participants could have been randomly allocated to two groups by the researcher (dissimulating or honest) prior to testing. A research assistant could then have acted as a 'blind' examiner, administering the neuropsychological tests to participants in both groups. Participants in the dissimulating group could also have been offered some incentive to avoid being detected by the examiner. This might have overcome any biases in behaviour, of either the participants or the examiner, resulting from the openness of the request to dissimulate.

Useful further research could be developed from examining the neuropsychological test performances of participants in the present study in

relation to their interview data, to determine whether their self-reported dissimulation strategies were a good match with what they actually did. This may turn up some interesting avenues for future research, particularly if participants' test responses do not correspond well with use of the strategies that were their stated intention.

Thematic analysis provides one way of examining the interview data to construct the story of this experience in one particular way in direct response to our research question. This same data could be re-analysed using alternative qualitative methods to uncover different meanings. Discourse Analysis, for example, could be used to examine the various subject positions participants adopt and the metaphors they use to describe their experience of the task and their own attempts at deception. Alternatively, Conversation Analysis could be used to provide a more reflexive analysis of the data.

Particular attitudes and assumptions about traumatic brain injury are revealed in participants' descriptions of the rationale they used to select dissimulation strategies which seemed appropriate. For example, participants who chose to base their dissimulation strategies on their observations of children were inadvertently demonstrating their supposition that if one were to become cognitively impaired through injury, one would become childlike. A re-analysis of the present data in terms of participants' attitudes towards cognitive impairment, as revealed by their dissimulation strategies, might also provide insight into societal attitudes and assumptions. Further research into how attitudes, assumptions and prior knowledge can be misapplied by dissimulators could be a useful addition to the body of knowledge clinical psychology has about malingering. Another useful avenue for exploration, as highlighted by the present study, is that of examinees' perceptions of the difficulty and purpose of the different tasks on a standard neuropsychological test battery and how this affects performance.

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## APPENDIX A – Ethical Approval

### ETHICAL PRACTICE CHECKLIST (Professional Doctorates)

**SUPERVISOR:** Matthew Jones Chester      **ASSESSOR:** Zoë Boden

**STUDENT:** Stephanie Cobb      **DATE (sent to assessor):** 10/02/2012

**Proposed research topic:** Dissimulation strategies on neuropsychological tests: A qualitative investigation

**Course:** Clinical Psychology

- |  |     |
|--|-----|
| 1. Will free and informed consent of participants be obtained?   | YES |
| 2. If there is any deception is it justified?  | N/A |
| 3. Will information obtained remain confidential?  | YES |
| 4. Will participants be made aware of their right to withdraw at any time?   | YES |
| 5. Will participants be adequately debriefed?  | YES |
| 6. If this study involves observation does it respect participants' privacy?   | N/A |
| 7. If the proposal involves participants whose free and informed consent may be in question (e.g. for reasons of age, mental or emotional incapacity), are they treated ethically? | N/A |
| 8. Is procedure that might cause distress to participants ethical?   | N/A |
| 9. If there are inducements to take part in the project is this ethical?   | N/A |
| 10. If there are any other ethical issues involved, are they a problem?  | N/A |

#### APPROVED

YES	YES, PENDING MINOR CONDITIONS	NO
-----	----------------------------------	----

**MINOR CONDITIONS:**

**REASONS FOR NON APPROVAL:**

Assessor initials: ZB

Date: 16.2.12

## RESEARCHER RISK ASSESSMENT CHECKLIST (BSc/MSc/MA)

**SUPERVISOR:** Matthew Jones Chester      **ASSESSOR:** Zoe Boden

**STUDENT:** Stephanie Cobb      **DATE (sent to assessor):** 10/02/2012

**Proposed research topic:** Dissimulation strategies on neuropsychological tests: A qualitative investigation

**Course:** Clinical Psychology

Would the proposed project expose the researcher to any of the following kinds of hazard?

- |    |  |    |
|----|--|----|
| 1  | Emotional                              | NO |
| 2. | Physical                               | NO |
| 3. | Other<br>(e.g. health & safety issues) | NO |

If you've answered YES to any of the above please estimate the chance of the researcher being harmed as:      NA

### APPROVED

YES	YES, PENDING MINOR CONDITIONS	NO
-----	----------------------------------	----

**MINOR CONDITIONS:**

**REASONS FOR NON APPROVAL:**

Assessor initials: ZB      Date: 16.2.12

Please return the completed checklists by e-mail to the Helpdesk within 1 week.

**SCHOOL OF PSYCHOLOGY**

Dean: Professor Mark N. O. Davies, PhD, CPsychol, CBiol.



**School of Psychology  
Professional Doctorate Programmes**

To Whom It May Concern:

This is to confirm that the Professional Doctorate candidate named in the attached ethics approval is conducting research as part of the requirements of the Professional Doctorate programme on which he/she is enrolled.

The Research Ethics Committee of the School of Psychology, University of East London, has approved this candidate's research ethics application and he/she is therefore covered by the University's indemnity insurance policy while conducting the research. This policy should normally cover for any untoward event. The University does not offer 'no fault' cover, so in the event of an untoward occurrence leading to a claim against the institution, the claimant would be obliged to bring an action against the University and seek compensation through the courts.

As the candidate is a student of the University of East London, the University will act as the sponsor of his/her research. UEL will also fund expenses arising from the research, such as photocopying and postage.

Yours faithfully,

Dr. Mark Finn

Chair of the School of Psychology Ethics Sub-Committee

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The University of East London has campuses at London Docklands and Stratford  
If you have any special access or communication requirements for your visit, please let us know. MINICOM 020 8223 2853



## APPENDIX B – Information sheet

<b>School of Psychology Information Sheet</b>
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**Project Title:** Dissimulation strategies on neuropsychological tests: A qualitative investigation  
**Researcher:** Stephanie Cobb  
**Supervisor:** Dr Matthew Jones Chesters

You are invited to take part in the research named above. Before you decide, it is important for you to understand why the research is being carried out and what it will involve.

### Background to the study

The aim of the study is to investigate the strategies people use when attempting to fake cognitive impairment on standard neuropsychological tests. Previous studies in this area have been largely limited to using questionnaires and observations of people's behaviour. We hope to extend the knowledge in this area by obtaining more detailed information using qualitative methods (e.g. interviews).

### Why I have been chosen? Do I have to take part?

We are asking healthy adults to participate in the research. You are not obliged to take part in this study and should not feel coerced. It is your decision whether or not you take part. If you decide to, you are free to withdraw at any time, without giving any reason and without any disadvantage to yourself. If you withdraw before the study is written up (by January 30<sup>th</sup> 2013) we will remove your data from the results.

### What will happen if I take part?

You will be asked to read and sign a *Consent* form. You will be asked about your age, gender, your level of education and whether you have suffered a head injury. You will then be given a scenario asking you to attempt to perform poorly on a series of neuropsychological tests. After the tests have been completed, you will be interviewed in detail about the strategies you used to perform poorly. It should take no more than one and a half hours. You will be given an opportunity to ask questions after the tests are done.

### What are the benefits of taking part?

We hope that this information will contribute to the existing knowledge base concerning detection of feigned symptoms and assist neuropsychologists when they act as expert witnesses in compensation claims and criminal cases.

### Are there any possible harmful effects or risks in taking part? What if something goes wrong?

There are no risks in taking part in this study. It is highly unlikely that the methods used in this study have harmful effects. However if you felt you were harmed by taking part in this research, there are no special compensation arrangements.

### What will happen to the results of the study? Will my confidentiality be respected?

The results of the study will be written up and submitted as dissertation for a doctoral degree in clinical psychology. We may also write the study up for publication as a research article. You will not be identified in any part of these reports. All information will be treated in the strictest confidence. Only the researcher and project supervisor will see your answers. The *Consent* form, which bears your name, will be separated from the rest of the information, and destroyed once we have coded the data held on computer.

### Contact for further information. Who is organising this research?

The research is being carried out by Stephanie Cobb, under the supervision of Dr Matthew Jones Chesters, Senior Lecturer at the University of East London. If you have any questions please email [U0722745@uel.ac.uk](mailto:U0722745@uel.ac.uk)

This copy of the *Information* is yours to keep; please retain it for future reference.

If you agree to take part, you will be asked to sign a *Consent* form prior to participation. If you have any concerns about how the study has been conducted, contact the Chair of the *School of Psychology Research Ethics Sub-committee*: Dr Mark Finn, School of Psychology, University of East London, Water Lane, London E15 4LZ. Tel: 020 8223 4493. Email: [m.finn@uel.ac.uk](mailto:m.finn@uel.ac.uk)



## **APPENDIX D – Scenario and Contextual Information**

### **Scenario**

You are about to be administered a selection of short neuropsychological tests used to determine changes in the cognitive abilities of people who have suffered brain injuries. I would like you to imagine that you are being tested to determine whether your abilities are normal or impaired.

However, I would like you to alter your performance on these tests to suggest that your thinking has been adversely affected by mild brain damage. Your goal is to try to produce the most impaired performance that you can whilst taking care to ensure that the examiner will not know that you are pretending.

The information below should help you to plan how you can simulate cognitive impairment and perform poorly on the tests. It is important that your performance is realistic so that you are not suspected of malingering. Please take a few minutes at the start of each test to plan your strategy.

### **Common symptoms of cognitive impairment**

Head injury can damage some, but not necessarily all, of the following cognitive abilities:

- speed of thought
- memory
- understanding
- concentration
- problem solving
- language

From [www.headway.org.uk](http://www.headway.org.uk)

## **APPENDIX E – Interview Schedule**

### **Interview Schedule**

*Can you tell me, in general, what you did to perform badly on the tests?*

For each neuropsychological test the participant undertook, they will be asked the following questions:

*How did you perform badly on this particular test?*

*Did you think it worked?*

The interview schedule will be very flexible to allow the interviewer to probe further as desired using sub-questions such as:

*How or why.....?*

*Can you tell me more about.....?*

*What was it like to do this test and try to perform poorly?*

## APPENDIX F – Excerpt from the data

### Louise

49 *What about the next one? That was the list of words that*  
50 *you had to pronounce.*

51 Ah erm... That's really hard because ... having done  
52 English at Uni words are my thing! So I just read them and  
53 I found it really hard to fake not being able to read them,  
54 until it got I can't remember, there were a couple of them  
55 at the end where I actually didn't know the words. I wasn't  
56 sure if they were made up words or not. I'm probably just  
57 being really stupid though. Erm... Yeah, and so that was  
58 really hard. I actually ended up in my head with this image  
59 of a woman I know who has learning difficulties and I was  
60 thinking, what would she say. I was trying to kind of get  
61 into character. Yeah, 'cause I was really struggling. And I  
62 think there were a couple where I said them. Was it  
63 vengeance? I said it and thought, hang on a minute, I  
64 shouldn't have just said it. It's like I tripped up and just  
65 read it out. *So it's quite automatic for you so it was quite*  
66 *hard. Yeah to perform badly on that.* It was and then when  
67 I got to the end, I thought I should have stopped but me  
68 being persistent that's obviously I forgot that that might not  
69 be part of the character as well.

Finding it hard  
to fake things  
you're good at

Trying to  
imitate  
someone else

Trying to  
suppress  
personal  
characteristics  
or skills

70

71 *The story. How did you think you got on with the story?*  
72 Erm... I really didn't know if I was sort of over or under  
73 doing it with the accuracy. It was quite hard to gauge how  
74 much of that, if you do have a head injury, how much you  
75 would remember. *Mmm.* So I... but having said that there  
76 were bits I left out and then when you reread it, I had  
77 genuinely forgotten them anyway. So and I don't have a  
78 great memory anyway so ... it was... I'm not sure how well

Being unsure  
what a realistic  
performance  
would look like

79 I did on that one. As in how well I faked it. Ok, so you're  
80 not sure if that worked well? No. I don't have a clue  
81 actually. I'd be interested to see.

Wanting to  
know if they did  
well (at faking)

82

83 *Ok. What about copying the figure? How did you think you*  
84 *got on with that?*

85 That was really hard to fake and that's when I thought, oh  
86 I've overdone it now 'cause I just did so... such a stupid  
87 line across the middle erm... and I thought ... it could as I  
88 say I could only get away with that if it was someone who  
89 hadn't ever known me before. *Mmmn. I think it would be*  
90 quite hard because it's erm ... I could see every line and I  
91 was breaking it down one line at a time and I was trying to  
92 copy it and then get stuck with one but because I was  
93 doing that, I was thinking, well that's the way to do it  
94 correctly and so I couldn't find a way in my head of doing it  
95 wrong. And that's why I just ended up with a stupid picture  
96 with scribbles on, 'cause I just couldn't find a way to  
97 accidentally get bits wrong. If that makes sense, Yeah  
98 *yeah it does absolutely. So that was quite hard? Yeah.*

Struggling to  
find a way to do  
it wrong

99

100 *Erm. Ok. The next one was picture naming. I showed you*  
101 *a selection of pictures which you had to name and I am*  
102 *interested to know how you approached that. Did you*  
103 *have a particular strategy in mind?*

104 I suppose again I was almost thinking of people that might  
105 have a learning disability and I was thinking, well they're  
106 quite simple pictures, so I answered most of them erm and  
107 ... I sort of had the approach that if it almost like a picture  
108 that a child would understand I would just say it, until it  
109 came to something where there was even like if there was  
110 a hint of ambiguity then I would pause so I kind of thought

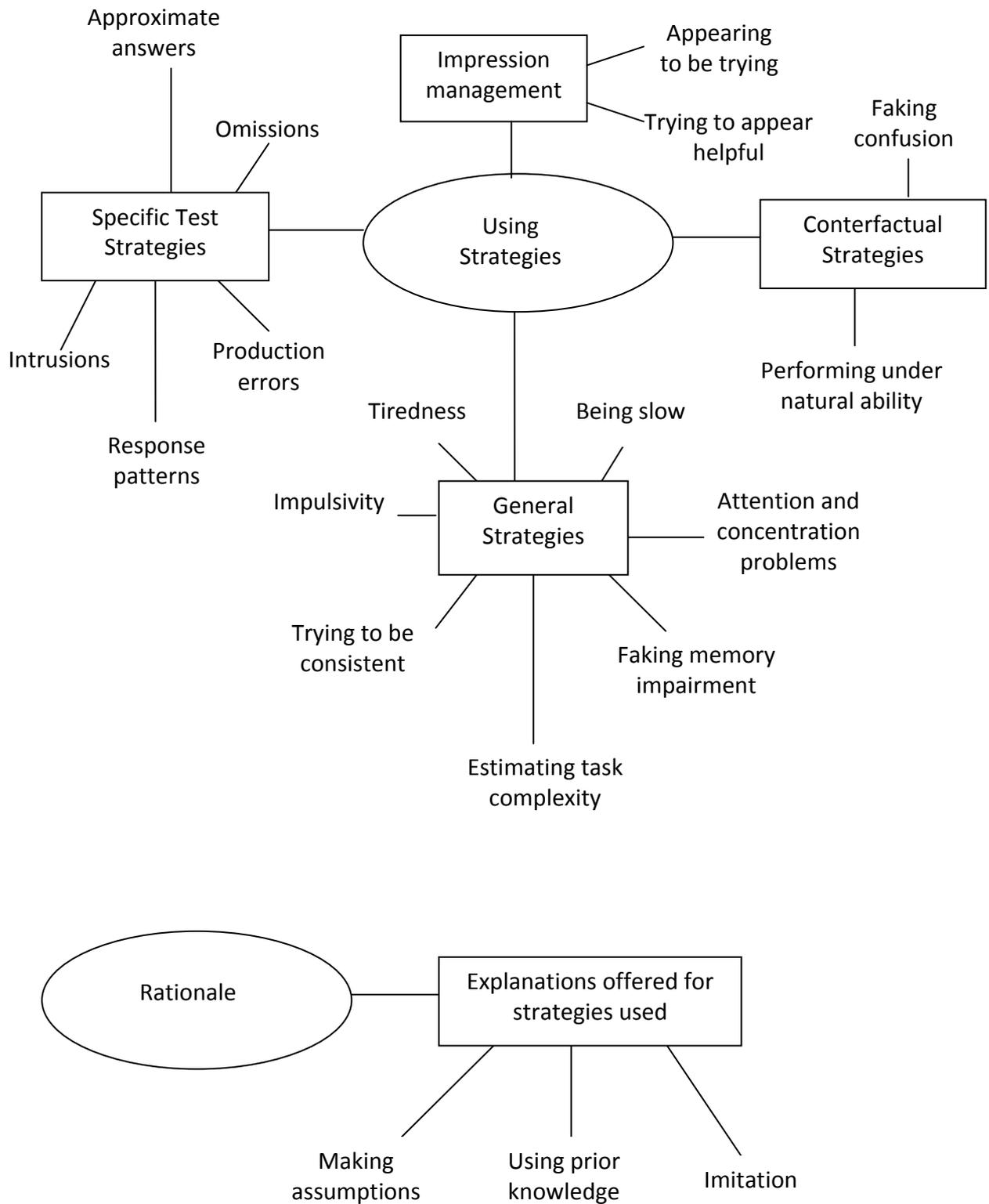
Trying to  
imitate  
someone else

## APPENDIX G – Codes and Themes

Codes	Basic Themes	Mid (organising) Themes	Global Themes
Adding things (figure, story), Adding words, False positives, Saying yes to things that were close	1. Intrusions	1. Specific Test Strategies	1. Using strategies
Leaving things out, Memory blanks, Trying not to put in specifics, Forgetting words	2. Omissions		
Misplacing items (fig copy, Misplacing items (fig recall)	3. Production errors		
Saying something similar, Leaving out detail, Naming things wrongly, Saying yes to things that were close	4. Approximate answers		
Continuing same rule, One either side, Patterns of answering, Random guesses, Repetition, Reversing things, Using own rules, Setting personal challenges	5. Response patterns		
Complexity of whole task, Complexity of part of task, Performing badly if task seemed complicated,	6. Estimating task complexity	2. General Strategies	
Impatient, Impulsive	7. Impulsivity		
Being slow, Hesitation, Wasting time	8. Being slow		
Attention, Concentration	9. Attention and concentration problems		
Feigned tiredness	10. Tiredness		
Consistency, Continuing with same strategy, Getting similar things wrong, Getting similar things right, Balanced	11. Trying to be consistent		
Specific impairment, Memory problems, Short Term Memory	12. Faking memory impairment		
Helpful, Confident	13. Trying to appear helpful		
Trying, Memory blanks	14. Appearing to be trying		
Under ability, Making it difficult for self	15. Performing under natural ability	4. Counterfactual strategies	
Confusion, Disorientation, Hesitations, Ignoring instructions, Doing opposite of instruction	16. Faking confusion		

Assumptions about normal performance, Assumptions about TBI, Assumptions about tests	17. Making assumptions	5. Explanations offered for strategies used	2. Rationale
Prior knowledge, Observation, Digit span, Primacy and recency	18. Using prior knowledge		
Imitation	19. Imitation		
Anxiety, Physical responses, Finding it fun	20. Anxiety	6. Emotions and reactions	3. Experience of the task
Conflict, Trying to do both well and badly, Uncomfortable with lying	21. Personal conflicts		
Suppressing personal characteristics and skills	22. Suppressing abilities		
Genuinely struggling with certain skills	23. Genuinely struggling		
Difficulties de-rolling, Wanting to know if they did well, Residual effects	24. Residual effects		
Difficult to 'fake bad' things you're good at	25. Finding it difficult to fake bad		
Hard work, Struggling to get it wrong	26. Finding it hard work		
Unsure what to fake, Not planning, Wanting prior knowledge, Not knowing what realistic performance is	27. Not knowing what to do	7. Experiencing difficulties	
Having second thoughts, Changing strategy	28. Having second thoughts		
Things slipping out	29. Things slipping out		
Forgetting to simulate	30. Forgetting to simulate	8. Strategies failing	
Drawn to the correct answer	31. Being drawn to the correct answer		
Different strategies on similar tests, Second thoughts, Bad words + good story	32. Inconsistencies		

## APPENDIX H –Thematic Map



**APPENDIX H –Thematic Map (continued)**

