Do dysphoric university students have an enhanced theory of mind?

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I would like to thank the course team for all their support, encouragement and guidance throughout my training experience. My thanks also extend to my fellow trainees who have shared the highs and lows of our journey to becoming clinical psychologists. Finally I would like to thank my family and friends for their continuous support and encouragement, particularly my parents who have offered endless meals, good wine, and superb proof reading skills. An additional special mention needs to be made to Susie Morton for her excellent paring of words.

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**Introduction to the portfolio**

This portfolio contains a collection of work undertaken during the Doctorate of Psychology (PsychD Clinical Psychology) training course. This volume comprises of three dossiers: Academic, Clinical and Research. The work presented here reflects the range of client groups, presenting problems and psychological approaches covered during the course. Within each of the dossiers the work presented illustrates academic progress and development of clinical and research skills over the duration of the course. Please note that to ensure anonymity and confidentiality all identifying information has been changed or removed.
Essay 1:

My GP has 'borderline personality disorder', should this worry me?

December 2008
Year 1
Word Count: 4996
Essay 1: My GP has 'borderline personality disorder', should this worry me?
Essay 1: My GP has 'borderline personality disorder', should this worry me?

Introduction

My initial thoughts on this question were to follow my 'gut instinct', which was to say 'No, I should not be worried', but why do I think this? Within the essay I hope to explore where my beliefs stem from that mean I feel I should not be worried. My lack of concern that my GP has a diagnosis of 'borderline personality disorder' ('BPD')¹ may not be held by others and I will take the opportunity to fully explore why this might be the case. In engaging in this process, it is possible that my beliefs may change.

I will state what drew me to this topic and explore the assumptions the question raised for me, i.e. about 'BPD' and about the role and identity of the GP. I will offer a 'definition' of what is meant by 'BPD'. I will explore, challenge and deconstruct my assumptions, whilst thinking about how other people may consider the question and how their assumptions may differ from mine. I will focus on the concepts within the question, namely, borderline personality disorder, the role of a GP and then consider how an individual who has difficulties associated with the term ‘BDP’ may meet the challenges of this role.

I will draw together the main threads of my discussion and consider its limitations before offering conclusions and closing reflections.

My interpretation of the question

The question invites a reflective stance and I will write in the first person to facilitate this. I was drawn to this essay as I feel that it encourages the author to explore their beliefs about a controversial term within and to indicate the term borderline personality disorder and the author's perception of the term as not being a concrete or without problems.
topic: people in positions of responsibility that have been diagnosed with a mental health difficulty. I chose to answer this question as I believe in equality and feel quite strongly that having a mental health difficulty should not preclude a person from being able to achieve and maintain a professional position. I wanted to explore my beliefs in the context of mental health and competency at work, to query some of my assumptions on this topic, and to consider whether an individual's mental state could relate to their ability to undertake a professional position or is in some way mutually exclusive. In doing so, I hope to gain insight and understanding of this topic and think of the ethical issues that may be raised by having a professional care giver who, at times, may find this role difficult due to their own needs.

**Borderline Personality Disorder**

'BPD' was initially formalised in the 1980s (APA, 1980; cited in Allen, 2004). Currently, within mental health services in the United Kingdom two differing categorisation systems are used for the diagnosis of 'BPD', namely; 'The ICD-10 Classification and Behavioural; Disorder: Clinical descriptions and diagnostic guidelines' (WHO, 1993) and 'The Diagnostic and Statistical Manual of Mental Disorders', fourth edition, text revised' (APA, 2000). The ICD-10 offers a broad classification for diseases, while the DSM-IV-TR is specifically for 'mental disorders'.

'BPD' is found within the personality disorder sections of the classification systems. The terminology differs between the systems: the ICD-10 uses 'Emotionally unstable personality disorder: Borderline type', whilst the DSM-IV-TR uses 'Borderline Personality Disorder' [capitalisations as in original text].
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The ICD-10 describes emotionally unstable personality disorder, subcategory, F60.31 borderline type (including borderline personality disorder) as:

"Several of the characteristics of emotional instability are present; in addition, the patient's own self image, aims, and internal preferences (including sexual) are often unclear or disturbed. There are unusually chronic feelings of emptiness. A liability to become involved in intense and unstable relationships may cause repeated emotional crises and may be associated with excessive efforts to avoid abandonment and a series of suicidal threats or acts of self-harm (although these may occur without obvious precipitants)" (WHO, 1993, p. 205).

Whilst the DSM-IV-TR describes, 301.83 Borderline Personality Disorder as:

"...a pervasive pattern of instability in interpersonal relationships, self-image, and affects, and marked impulsivity that begins by early adulthood and is present in a variety of contexts" (APA, 2000, p. 706).

Additionally, the DSM-IV-TR sets out nine diagnostic criteria for borderline personality disorder of which five or more must be present.

The two classification systems appear to indicate that the GP could experience long lasting difficulties that may present in differing ways.

My assumptions
On reflection, my initial reaction to the question appears to be based upon assumptions that I hold, namely:
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1. Having a diagnosis associated with mental health difficulties does not mean you are unable to maintain a professional position.
2. The GP in this case is an individual who has successfully passed through training to become a GP, maintains a job and continues to be able to manage their difficulties to a degree that means that they are able to perform their duties.
3. I believe that the medical profession and the NHS have sound professional standards to ensure the competency of their employees.

When considering my third assumption it was hard to find information on the regulation of GPs even from their governing body (British Medical Association) or Department of Health. The Health and Social Care Act (Office and Public Sector Information, 2001) introduced new measures to improve the regulation of GPs. However, to explore this seems beyond the scope of the present discussion. I will, therefore, have to hope that my third assumption about GPs being effectively supported and regulated to ensure that they maintain professional practice is true.

Other assumptions raised by the question concern the gender, ethnicity or class of the GP. I have always been on the list of a white male GP and could assume that the GP is a white male. On exploration of the data on numbers of male and female GP it appears that the numbers are now almost equal as female staff now make up 42% of the workforce (The Information Centre, 2008). However, the diagnosis of 'BPD' is predominantly given to women: around 75% of those diagnosed are female (APA, 2000).

When comparing the prevalence rates between different ethnic groups there is currently a low diagnostic prevalence of BPD in Asian
culture (Lee, 2008), and when comparing the numbers of black versus white people given a diagnosis of BPD it is relatively infrequently (NIMH(E), 2003). There are many reasons why the prevalence rates seen within cultures differ, such as, cross cultural explanations of personality can mean that there are different understandings of what personality actually is (Burr, 2003). Given these clear difficulties the ICD-10 suggests developing specific sets of criteria with regard to social rules, norms and obligations for different when considering diagnosis (WHO, 1993).

Epidemiological research has shown that there is greater prevalence of individuals given a diagnosis of a major mental health disorder in the lower socioeconomic classes (Dohrenwend & Dohrenwend, 1969; cited in Paris, 1996).

Given information regarding gender, ethnicity and class it is likely that the hypothetical GP would be a white western female from a lower social economic class. For the purpose of this essay I will, therefore, assume this is the case.

The proposed question does not elaborate on how I came to know about my GP having a diagnosis of 'BPD' or provide any details about the GP. For ease of the discussion I will presuppose that the GP's diagnosis is common knowledge. Although this potentially raises issues of ethics and confidentially, to explore on these would distract away from the more pertinent issues regarding the discourse about the role of diagnosis on which I focus.
Why might others not share my assumptions?

In deconstructing my own assumptions, it is important to think about why other people would not share them. That is, what beliefs might cause them concern about their GP having a diagnosis of ‘BPD’?

Public attitudes about mental health appear not to vary greatly over time (Prior, 2008). Research has shown negative public attitudes towards individuals with a history of mental illness being able to maintain positions of public office, with around 20% of people believing that they should be excluded from taking office, and around 10% of respondents stating that they would not want to live next door to someone who has been mentally ill (Prior, 2008). However, this research did not explore people’s reasons for their attitudes, making it difficult to establish their underlying beliefs.

‘BPD’ has often been viewed in a negative light by mental health practitioners and the public (Aviram et al., 2006). The stigma attached to ‘BPD’ by the general public will have been influenced by the media, which depicts individuals with the diagnosis as causing harm to themselves. With articles headed, “The short and desperate life of Petra, the girl nobody helped: Petra Blanksby killed herself aged 19 after she was jailed for arson - she had tried to burn herself following years of abuse.....” (The Observer, Sunday 3 February 2008). The perception may be that individuals that have been given the BPD diagnosis are unstable, self-harming, a burden to services and the public, and demanding. Additionally, given the complexity of the construct of personality disorders, and also for ‘BPD’, it may be hard for the lay person to differentiate between the differing disorders/diagnosis and they may confuse the different diagnoses. Given the current climate in which the dangerous and severe personality disorder (DSPD) is a popular media topic, in line with the
opening of the three specialist units it is possible the lay person may consider every individual with a personality disorder to be 'dangerous'.

Research has shown that when vignettes about an individual having a personality disorder are presented to clinicians they form judgmental, rejecting and pejorative attitudes (Aviram et al., 2006). The clinicians were more likely to describe these patients as 'difficult to manage', 'manipulative', 'unlikely to arouse sympathy', 'annoying', and 'not deserving of [mental health service] resources' (Lewis & Appleby, 1988; cited in Aviram et al., 2006). A compounding factor is that until recently personality disorders were seen as untreatable. This was a widely held belief and, as such, this area within mental health was isolated and frequently neglected (NIMH(E), 2003).

'BPD' has been perceived as a 'chronic psychiatric disorder' (Paris, 2005). The term 'borderline' has become used within mental health setting in a pejorative way that may reflect clinicians attitudes about clients with this label. Clinicians have tended to use terms specifically regarding 'BPD', such as, 'attention seeking', 'difficult', 'treatment resistant', and 'manipulative' (Shedler & Westen, 2004; cited in Aviram et al., 2006). Individuals labeled with 'BPD' can often leave the professionals who are trying to provide them care feeling inadequate, incompetent and helpless (Cleary, 2002). Staff working with this client group often experience feelings engendered by working with individuals who have difficulties associated with the diagnosis of 'BPD' as intolerable. Research has shown that staff can find the clients themselves difficult to treat (Cleary, 2002).

Based upon the stigma attached to 'BPD', outlined above, it is rational to assume people would question the competence of somebody with 'BPD' to practice as a GP. I am recovery-oriented,
believe that people who experience emotional distress can have successful careers, be competent professionals and meaningfully contribute to society. However, individuals that have been given the diagnosis of ‘BPD’ who I have worked with to date have not provided me with much clinical evidence supporting my beliefs. I worked within a service where the women were starting their recovery journey and were not sustaining high profile/high status jobs. There are some examples of psychologists who have experienced psychosis (e.g. Rufus May and Rachel Perkins). However, I am not aware of individuals in professional positions with a diagnosis of ‘BPD’ that have let it be publically known. When considering why this might be the case it is worth thinking about the difference in the stigma attached to the diagnosis. The stigma that has been attached to the label of ‘BPD’ means that individuals who get this label must almost fight/recover from the impact of the term as well as the difficulties that led to the diagnosis. In fact the stigma is seen by some as the harder part to overcome: ‘The stigma and discrimination that is experienced in conjunction with mental illness is identified by some service users to be more challenging and difficult to recover from, than the illness itself’ (Deegan, 1997; Read 1996; cited in Warren, 2003). Other people may not necessarily look for examples of people with mental health difficulties being in professional positions because of a firm belief that having mental health difficulties prevents successful employment.

My clinical experience of ‘BPD’ has come from working in a Women’s Mental Health Service (called the Women’s Service (WS)²). The client group was women with complex mental health needs, with a large proportion having been given ‘BPD’ as their major diagnosis.

² The Women’s Service was a small dedicated service and I have chosen to not provide detail that would lead identification of the service or the women.
The service philosophy was based on a recovery approach, positive engagement, understanding people's responses to trauma, positive risk-taking, with relational security underpinning these key principles. Working within this service may well mean that I will have a very different and positive perspective towards women who have been given the diagnosis of 'BPD'. This is because my understanding of their difficulties is based upon an understanding about how people respond to trauma.

My clinical experience of individuals with a diagnosis of 'BPD' whom appear to be recovering has provided me with a positive outlook for individuals who have been given this diagnosis. For example, one woman's recovery meant that she was able to become very involved in the service user movement by being a representative for service users in her area. Another woman with whom I worked more closely had in the past been a significant self-harmer. When I met her, she was no longer self-harming and was about to move out to independent living. Her presentation had changed in some crucial ways, reduced self-harm and hospitalisations, but in terms of her close interpersonal relationships she continued to struggle to maintain stability. The women's progress was significant and enabled me to hold hope for those that I worked with then, and in the future. I have demonstrated some clinical and professional evidence that people with mental health difficulties can progress on their own recovery journey. Although there are few known examples of this in relation to 'BPD', there is no reason to assume it is not possible.

In 2003 the government attempted to challenge the stigmatising belief of untreatability by setting out guidance for the development of services for individuals who have been given a diagnosis of personality disorder (NIMH(E), 2003).
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How likely is it that a GP would have a diagnosis of BPD and that the patients would know?

Mental health difficulties are very common, with one in four people experiencing mental health problems at some time during their life (Cromby et al., 2007). There is evidence to suggest that the prevalence rate of mental illness is higher in doctors (Ghodse, 2000; cited in DoH, 2008). The dilemma proposed does not seem too improbable given the statistics. However, the likelihood of patients actually finding out about the doctors’ diagnosis seems harder to believe. In reality the stigma associated with mental health difficulties in general and specifically with ‘BPD’ would mean, from my perspective, that it would be highly unlikely that a GP would feel comfortable enough to allow their patients to know about the difficulties that they are facing. Research has found this to be the case, doctors have been found to conceal problems and do not seek formal consultations, using colleagues for informal advice instead (Baldwin et al., 1997; cited in DoH, 2008). Interestingly this appears to reflect a concern about confidentiality; doctors do not trust the system to keep their medical information safe (Silvester et al., 1994; cited in DoH, 2008).

In terms of the probability that an individual who has a mental health diagnosis could be employed as a doctor there is clear law about this, the Disability Discrimination Act (DDA) of 1995 made it unlawful for employers to discriminate against people who have a mental impairment (NHS Employers, 2008). The stance that the NHS has taken is that the selection of an individual for a position should be based on the best person for the job. The NHS has taken a positive stance on the employment of individuals with mental health difficulties:
With the largest workforce in Europe, and a high report incidence of mental health problems in the general population, it is essential the NHS takes a role in ensuring that people are not discriminated against or excluded from the workforce unnecessarily.

The NHS should take a lead, not only in caring for its present and future employees, but also in valuing diversity and in promoting good practice in the employment of people who have experiences or are experiencing mental health problems. (NHS Employers, 2008, p. 12)

Given the positive stance of the NHS and the law, assuming that these are taken on board in practice it is possible for an individual who has been given any mental health diagnosis to be employed as a GP.

**Critique of the diagnostic criteria/‘BPD’**

The origins of the two classification systems are within the field of psychiatry, and based on committees predominantly made up of white western men with medical backgrounds. This results in a medical model describing how people respond to distress. Having a medical model suggests there is a pathological basis to mental health difficulties. However, there is no convincing evidence that individuals with a mental health diagnosis have a distinct underlying pathological profile (Moncieff, 2007). Nature and nurture are so intertwined it leaves me wondering if such a profile exists. I believe there may be some evidence of genetics markers that may predispose an individual to having mental health difficulties but this will be influenced by environmental and protective factors that impact on an individual’s mental health. My understanding is there is no
evidence of direct causal pathways for mental health difficulties with a biological basis.

When thinking about the classification systems a fundamental question is why are there two? This question appears almost more important than the differences, if any, between the two, because having two accounts of what constitutes ‘BPD’ undermines the assumption that it is a valid entity/construct.

Within the DSM-IV-TR (APA, 2000) there are nine diagnostic criteria for BPD, of which only five need to be present to meet the diagnosis threshold, making 151 differing combinations of criteria that can result in a BPD diagnosis being given (Skodol et al., 2002), with as many differing presentations. So our GP could potentially have any of the 151 presentations. Furthermore, Bateman and Fonagy (2006) cited a personal correspondence from Karterud suggesting that there are, in fact, 256 possible combinations, which again would result in a matching number of presentations. Furthermore, two individuals who receive the diagnosis of ‘BPD’ may well only share only one of the nine criteria, which would seem to suggest that they could have very different experience and presentation of ‘BPD’. Given the variety of diagnostic attributes how does the label of ‘BPD’ actually help us to make sense of what an individual is experiencing, their difficulties and their competencies. The varying number of possible combination and matching presentations really do not help us to think about how the diagnosis could impact on her ability to undertake a role such as a GP. On examining the DSM-IV-TR diagnostic criteria we could propose the question: With so many varying presentations of what is meant to be one diagnostic category, it is a valid construct?
Adding to the validity debate is the level of co-occurrence with other personality disorders and with Axis I conditions (APA, 2000; Becker et al., 2000; cited in Bradley et al., 2007). The level of co-morbidity that is commonly seen with 'BPD' together with other Axis I and II difficulties also appears to suggest that the construct is not one discrete entity.

Essentially the term 'borderline' has meant an individual's experience of disturbance is identified as an abstract clinical construct. As such, it can be interpreted in a variety of ways by different clinicians and it can be inferred from a variety behaviours (Bradley et al., 2007).

What does this mean for our GP who has been given this diagnosis, what does she actually have? I am left feeling that this term, when used in the medical model sense, allows us to have a common language, but this common language can be confusing. When you deconstruct the term it does not appear to give real insight into the individual's difficulties or experience of them. When looking at the two classification systems there are some similarities or core themes across both. These themes are that the difficulties are enduring, of long duration, involve instability in relationships, can include impulsivity and are stable over time (WHO, 1993; APA, 2000). However, this does not provide a clear picture of what she might actually have. I feel that I am not be able to answer the question of 'What does my GP actually have?' as, without knowing what criteria she meets, and how she presents, it seems impossible to have an understanding of what the label means for her, for her patients or those that work with her.

Women who have been given a diagnosis of 'BPD' have often experienced trauma (DoH, 2003). Kreisman et al. (1989, p.9) described it thus, 'The family background of a borderline is often
marked by alcoholism, depression, and emotional disturbances. A borderline childhood is often a desolate battlefield, scarred with the debris of indifferent, rejecting, or absent parents, emotional deprivation, and chronic abuse." Furthermore, it has been argued that 'BPD' is applied to individuals who have experienced childhood sexual abuse and that it pathologises survivors who are often women (Shaw & Proctor, 2005). When considering the idea that the 'BPD' diagnosis pathologises women I am curious as to whether this is helpful, as it does not appear to acknowledge past experiences rather it classifies difficulties in terms of negative symptomology.

The notion of constructing an individual's situation as trauma-based is more likely to elicit from the clinician feelings of warmth and empathy, along with a greater willingness to identify with the client and believe in her ability to change (Brown, 1994; cited in Becker, 2000). It is also possible that this may produce more empathic responses from the general public. However, feminist writers have argued that the complex PTSD\(^3\) construct actually further medicalises women's difficulties and replicates the existing 'caste' system of diagnosis and treatment (Becker, 2000).

I, therefore, believe that there is an argument to not rely on the diagnostic criteria alone but to consider peoples' individual stories/narratives, which will provide the predisposing factors, protective factors and maintaining factors. Using these factors clinicians can then gain an understanding of the presenting difficulties and then tailor treatment to meet the needs of the individual, each psychological model offers a process of formulation (see Johnstone & Dallos (Eds) (2006) for a full exploration of formulation). Through this process of formulation the clinician can

\(^3\) Post-Traumatic Stress Disorder
identify what the difficulties linked to/associated with a diagnosis of BPD actually mean for an individual. Consequently, the process of formulation offers links between mental health/ emotional difficulties and life history /context.

What does the label ‘BPD’ mean for our GP?
When formulating about our GP it is likely that she will have experienced some form of trauma in her life (predisposing factors), hypothetically she could well have had protective factors, such as family, friends and potentially her career may have offered some stability. This latter point has been suggested particularly in relation to certain professional positions: 'The work world can provide sanctuary from the anarchic setting of social relationships. .....borderlines frequently function best in highly structured work environments......helping professions – medicine, nursing, clergy, counselling .......borderlines provide the care for others that they yearn for in their own lives' (Kreisman et al., 1989, p. 12). In the WS I saw how formulation can be used to meet the needs of women with a 'BPD' diagnosis.

It also seems worth considering when the GP was diagnosed, as differing onset points are may mean different difficulties. Recovering from mental health difficulties has been described as a journey, with change at its heart that appreciates what is as is not within individual's power to change (Kreisman et al., 1989). The process of recovery has been described by Young and Ensing (1999; cited in Warren 2003) as having three phases. The first phase is called 'Overcoming Stuckness', during which the individual goes through a process of first acknowledging and then accepting their illness/diagnosis, developing the desire and motivation to change, and establishing a source of hope and inspiration. The next phase involves establishing self-empowerment, learning and self-redefining
and a return to basic functioning. The final phase is associated with an improvement in quality of life, through the striving for an overall sense of well-being and striving to reach new potentials of higher functioning. Our GP could potentially be within the final stage of recovery and have little or no difficulty with working. She may have been through treatment/therapy and learned to manage her difficulties through this process of recovery.

Conversely, it is also possible she could have received the diagnosis much more recently meaning that she could have been a respected clinician before personality issues became problematic. She could, in fact, be in the first stage of recovery and be struggling to accept the diagnosis/label she has been given. I am unsure if she is at this stage whether she would be able to maintain a high pressured position such as a GP.

The role of a GP
As a patient and psychologist I have seen the GP’s face-to-face role and the need for empathy and understanding within this role. Given that GPs see patients for all manner of complaints the interactions with patients will be hopefully tailored to suit each individual’s circumstances. For example, when you go to the GP about a cold you may not expect to have a long consultation that require the high levels of empathy you would hope for if discussing a more serious complaint. The role of a GP may, therefore, be considered to be that of a ‘signpost’ to more specialist services, which may be seen as quite a superficial ‘relationship’. An element of counselling possibly exists when the GP is faced with more complex cases. Although, within the modern NHS the emphasis for GPs appears to be fairly swift consultation (I believe GPs have an 8 minute slots per patient) which appears to place very little emphasis on the relational element for GPs role. This appears to be more pertinent for patients who
have to see their GP more frequently for complex reasons. These patients may need to have a more in-depth relationship which may be key, given that one of the commonalties between the two classification systems is instability within relationships, it could be speculated that if the GP had this aspect of difficulties then it could be more problematic. It has been proposed that 'BPD' is a disorder of attachment, separation tolerance, and ability to understand other's mental states ('theory of mind') (Fonagy, 1998; cited in Alwin, 2006). This could have some bearing on how our GP is able to manage working with patients who are experiencing mental health difficulties.

From my research, there is a part of the role that has managerial functions, suggesting that GPs are routinely expected to engage in management processes that will both impact upon, and in some cases impinge on, their professional role [seeing patients] (Frusher, 2006). From this I could believe that any difficulties the GP may have might be seen in their relationships with other staff rather than in their relatively brief encounters with patients.

Summary
Within this essay I have attempted to link my understanding of the impact having a diagnosis of 'BPD' has on an individual. I looked at the medical model and pathologising of women. Also I tried to explore how the diagnosis may or may not affect an individual's competency to be a GP. The range of difficulties that may or may not be present means it is hard to truly see whether the diagnosis of 'BPD' would affect a person functioning as a GP.

I have not fully explored the medical basis that some would propose is present for 'BPD'. I feel that as the evidence appears to be inconclusive and we have limited knowledge about the GP that this debate would not have added to the discussion. Furthermore, by
exploring my assumptions this may have limited my debate to my
own perspective and may not have enabled me to fully explore other
stances.

Reflections and Conclusions
I am left wondering why we still use these classification systems
when they appear to be very problematic. Cromby et al. (2007, p.
289) stated that ‘the standard defence is that, whilst problematic,
diagnosis provides a useful ‘shorthand’ form of communicating
important for multidisciplinary work’. However, to me this seems a
woefully inadequate reason to maintain a system that appears to be
so flawed. Is it being kept to maintain the status quo of psychiatrists?
It would appear to be the case that thinking about the individual and
what has happened to them and their response to it is a more useful
way to understand and help people respond positively to distress. I
believe that formulation can offer in part this process. I do not feel
that the process of writing this essay has made me feel very different
from the start although I have become more aware of other people’s
perspective about individuals who have been given a mental health
diagnosis. I am struck by how society maintains stigmatising labels
and beliefs that alienate those who are given the label. I see my role
as a trainee clinical psychologist who holds hope for those I work
with is to ensure that these beliefs are challenged in a thoughtful and
constructive way within the NHS.
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References


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Professional Issues Essay: How are issues of risk understood and responded to within mental health services? What contribution can clinical psychologists make to a reconsideration of these ideas and practices?

Essay 2:
How are issues of risk understood and responded to within mental health services? What contribution can clinical psychologists make to a reconsideration of these ideas and practices?

Professional Issues Essay

Year 2

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Professional Issues Essay: How are issues of risk understood and responded to within mental health services? What contribution can clinical psychologists make to a reconsideration of these ideas and practices?
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Professional Issues Essay: How are issues of risk understood and responded to within mental health services. What contribution can clinical psychologists make to a reconsideration of these ideas and practices?

Introduction

I was drawn to this question because of my prior diverse clinical experience of the understanding and management of risk issues within a variety of settings. Undertaking this essay will hopefully enable a full exploration of this complex professional issue.

‘Risk’ can be seen as a very emotive issue and is a necessary part of everyday decision making. When considering how to explore this issue for the purpose of writing this essay I was struck by the complexity of the concept of ‘risk’ that, at a superficial level, can be seen as only being concerned with causing harm or being harmed. When I thought about how ‘risk’ is being interpreted and then managed within clinical settings I realised that I have encountered a wide range of methodologies with differing epistemological stances on the concept and how to manage it. So, to explore this question, firstly I intend to take a look at the concept of risk – in terms of definition and how the concept of risk covers a spectrum from dangerousness to positive risk taking. I will then explore how mental health services understand risk issues and manage them. Finally I will attempt to pull together my understanding of how clinical psychologists may be able to assist teams with the difficult issues that surround risk and the management of it.

The term ‘mental health services’ (MHS) covers a broad range of differing teams and settings, for the purpose of answering this essay I want to focus on adult services. I hope to be able to draw explicitly from my experience of working in forensic services and from my first

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4 Within this essay ‘risk’ will be place within “ to indicate the concept of ‘risk’ is complex and not without problems. The author hopes to address the problem of definition within the ‘What is ‘risk’?’ section of this essay. Risk issues will be used to indicate the broader meaning of the concept of ‘risk’.

5 The author has chosen to focus on adult mental health services in part because this is where she has more experience and also to attempt to cover all MHS the author feels would be too complex.
year placement within a Primary Care Mental Health Team (PCMHT).

**What is ‘risk’? – The complexity of definition**

As outlined in the introduction, risk is a feature of everyday life (Chicken & Posner, 1998). We face ‘risk’ when getting out of our bed and putting on our socks: around 10,000 people per year in Briton are injured in incidents involving putting on socks and tights (The Guardian, 2001). When you then leave the house you face decisions about behaviours that involve ‘risk’ at every turn, from crossing the road, to lifting an item from a shelf, to driving your car. We make numerous decisions that involve understanding and managing risk. However, when we conceptualise what ‘risk’ is in terms of mental health there appears to be no clear definition (Chicken & Posner, 1998).

‘Risk’ is a concept that is shaped by many different societal factors and in real life, risk is not static entity, it is a concept that has changed over time (Lupton, 2004). Chicken and Posner (1998) stipulate that within the evaluation of risk there is no universally agreed set of rules applicable to evaluation of risk acceptability. Furthermore, that there is neither one definition of risk nor a set of definitions that have been agreed on. They conceptualised ‘risk’ evaluation as the chance that harm will occur i.e. ‘risk’ = hazard x exposure. Hazard is a situation or thing that can cause harm. Exposure encompasses the idea of likelihood and chance. ‘Risk’ occurs when both the hazard and exposure are present.

Gender issues may play a part when considering risk. Men are often perceived as more likely to harm others, whilst women are more likely to turn their anger in upon themselves (Motz, 2001; Kingdon, 2007). Overall men have been shown to be greater risk takers than their female counterparts (Byrnes, et al., 1999). To deal in detail with
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gender issues would be beyond the scope of this current essay, but when MHS consider risk issues, an individual's gender may well impact on the decision making process. When MHS are considering risk issues professionals should be able to demonstrate sensitivity and competence in relation to diversity in race, faith, age, gender, disability and sexual orientation (DoH, 2007).

The complexity of defining 'risk' and how this translates to MHS understanding and response to risk issues means that in differing situations the various factors are interpreted in inconsistent ways. However, when working with individuals it is necessary for risk issues to be understood and managed idiosyncratically which further adds to the complexity of interpreting risk issues and managing them in MHS.

'Risk' - The spectrum from dangerousness to positive risk-taking

'Risk' covers a wide spectrum, it encompasses concepts from 'dangerousness' to positive risk-taking. 'Risk' as a concept has been seen to be closely linked to the concept of 'dangerousness'. Prior to the late 1990's and early 2000's the conceptualisation of 'dangerousness' within our society was framed by academics as needing to be explored particularly in light of the disproportionate harm and injury that is seen to be experienced by socially disadvantaged groups (Shah, 1978). This would include individuals experiencing mental distress who are often socially disadvantaged.

The discourse surrounding 'risk' has become more pertinent to the public since the 1990's saw the closure of the old asylums. The media and public raised concerns, even alarm, about the presence of individuals with mental health difficulties being in the community (Langan & Lidlow, 2004). These external pressures have appeared to shape mental health responses to risk issues.
In the early 2000's this conceptualisation shifted due to, in part, a high profile case of violence perpetuated by an individual who experienced mental health difficulties. Laurence (2003) cites the case where Jonathan Zito was attacked and killed by Christopher Clunis, on 2nd December 1992, as a pivotal case that saw the shift in focus from the care of those people being discharged from the old asylums to the protection of the public.

In 2007 a mother, Fiona Pilkington, (who had borderline learning difficulties) was reportedly driven to kill herself and her severely disabled daughter (The Guardian, 2009). She was reported to have been experiencing 'distress and anxiety' due to local youths terrorizing the family (The Guardian, 2009). This incident may serve to remind the public and policy makers that individuals with mental health difficulties and learning disabilities are vulnerable. This may help to redress the balance in the conceptualisation of 'risk' resulting in a more holistic approach to risk issues, assessment and management.

At the polar end of the 'risk' discourse from 'dangerousness' is positive risk-taking.

Positive risk-taking is the weighing up the potential benefits and harms of exercising one choice of action over another. This means identifying the potential risks involved, and developing plans and actions that reflect the positive potentials and stated priorities of the service user. It involves using available resources and support to achieve the desired outcomes, and to minimise the potential harmful outcomes. (Morgan, 2004, p.18)

This approach to understanding and managing risk issues is relatively new. It can be seen as a constructive and creative
approach to risk-taking that is encompassed within recovery orientated approaches (RCP/SCIE/CSIP, 2007).

As Lupton (1993) stipulated, the concept of 'risk' changes overtime. We have seen it transmogrify within contemporary society from the protection of the vulnerable (Shah, 1978) to discourses of danger (Douglas, 1992). During this time 'risk' has also become part of the main stream/popular discourse pertaining to numerous issues and is no longer exclusively the realm of experts (Lupton, 2004). The 'risk' discourse continues to evolve, so when MHS are considering risk issues, it is within the context of the shifts in society, rhetoric and the dominant discourse at the time. Given the complexity that surrounds the concept of risk how do MHS understand risk issues?

**How do Mental Health Services understand risk issues?**

MHS understanding and responses to risk issues can be conceptualised as occurring within layers, namely Government/Department of Health policies and procedures, best practice guidelines, also from the Department of Health, and the professionals on the ground who operationalise them. So when considering how MHS understand and manage risk issues it is useful to look at the roles of the different levels in the understanding of risk.

**Government and Department of Health**

"Risk-constructions are not only transformed in the milieu of discourses, but also in the context of social practices which give the opportunity to acquire experiences and to perform learning processes in order to optimize risk-constructions as regulative instruments" (Metzner-Szigeth, 2009, p. 156).

So when considering how MHS understand risk issues it is within the context of the risk discourses in wider society, it has been conceptualised as a construction within reality. Lupton (1993)
asserted that risk carries a moral meaning and cannot be considered a neutral term, which adds to the drivers that shape MHS understanding of risk issues. The moral need to protect others has become a major driving force when considering risk issues over the last decade of mental health (Langan & Lindow, 2004). Underneath the discourse about protection has been another discourse of fear of harm from people who experience mental distress. This 'fear' has driven societies', and therefore mental health services', understanding of people with mental health difficulties (Laurence, 2003).

'Fear' has lead to anxieties about risk issues and about accountability for incidents when they occur. The following statement seems to sum up the 'fear factor' within our society, media culture and political climate about people with mental health difficulties:

"Ten times as many people die at the hands of so-called 'normal' people, most as a result of a domestic dispute, as are killed by people with mental problems. Drunkenness causes more violent deaths than mental illness – yet we view drunkenness with amusement while we recoil from mental illness with fear. About ten times as many mentally ill people take their own lives as harm other – but suicides do not make the news" (Laurence, 2003, p. 42).

**Policies and procedures in operations**

Mental Health Services understand/conceptualise risk issues within three rather narrow areas; harm to others, harm to self and harm from others (Langan & Lindow, 2004; Langan, 2008). The public concern about harm from individuals with mental health difficulties and dominant discourse of dangerousness mean that harm to others can be considered a driving force in professional understanding of risk issues.
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The politicisation of 'risk' can be seen to have resulted in an increased awareness of professional accountability and blame (Douglas, 1992). 'Fear' amongst professionals stems from consequence of risk events, which can include significant ones, such as liability and loss of confidence in institutions (Kasperson et al., 1988). This might result in accountability for incidents becoming a driving feature for professionals and in turn MHS, becoming more risk averse. Also there might be concern about the possibility of assigning blame to the participants in the decision making process.

Unfortunately we appear to be following the USA as British culture is also becoming a 'blame culture', when an incident occurs there must always be someone to blame (Wetherell, unpublished; Lupton, 2004; Douglas, 1992; Laurence, 2003). The key principle underlying societal understandings of risk is that '...in all places at all times the universe is moralized and politicized...' (Douglas, 1982; cited in Lupton, 2004). Politicisation and blame culture appear to go hand in hand. This can translate into MHS understanding of risk issues being one where professionals and institutions can be concerned with 'covering their backs' rather than trying to think constructively and creatively about risk issues.

When considering the impact of the governmental understanding of risk issues on MHS there appear to be the drivers of fear, blame, accountability, litigation/liability - these all impact on how MHS understand risk issues. 'Risk' and dangerousness can be seen as political issues that need careful managing to avoid recriminations, meaning that services understanding of risk issues are precautionary.
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Contextual considerations within MHS

Harm from others can be seen to be a driving force within MHS, as people with mental health problems can be very vulnerable to neglect, bullying and violence from other members of the public. I am currently on my learning disabilities placement and my experience has shown that risk of self-neglect and harm from others appear to be higher on the agenda than the harm to others, where the emphasis is on safeguarding vulnerable adults (DoH, 2009).

Within community teams the focus tends to be on maintaining an individual in their home and the risk issues that arise within this context. The community teams are at the centre of today’s mental health services (Linke et al., 2002). Within the current climate of understanding risk issues the emphasis is on good assessment and treatment plans to help allay fears and anxieties about risk. “The imperative that drives the service is risk avoidance and damage limitation ...” (Laurence, 2003).

Within secure forensic settings the individual is removed from the public from large periods of time (sometimes completely) but the features that shape the community teams’ understanding of risk issues are still pertinent. From my experience, when leave is granted or the individual is being reintegrated back into the community, the fear and blame elements all play their part in how plans are established and managed.

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6 As previously stated MHS covers a very broad range of services in some areas these include learning disability services (LDS) where as in others they have their own distinct service. For the purpose of this easy the author has chosen to include LDS within the umbrella term of MHS. The author also wants to acknowledge that individuals with learning disabilities often have a higher incident of experiencing distress due their difficulties, being a minority and their vulnerability.
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How do Mental Health Services respond to risk?
Mental Health Services (MHS) response to risk also occurs in layers, following policies, procedures, best practice guidance and the operational responses.

The Department of Health - policies/guidance
The governmental impact on MHS responses to risk issues is one driven by fear of blame, fear of the consequences of serious and untoward incidents, which means that policies on risk issues are cautious and risk averse. MHS respond to risk on the basis of protocols, processes and the principles for effective team work. All teams have protocols that form a practical response to risk issues, including an assessment process with management plans developed from this for each individual. Within MHS the current protocol stipulates that individuals are placed on the Care Programme Approach (CPA). "Risk assessment is an essential and on-going part of the CPA process. Care plans for severely mentally ill service users should include urgent follow-up within one week of hospital discharge. Care plans for all those requiring enhanced CPA should include a "what to do in a crisis" and a contingency plan" (DoH, 1999). Gray et al. (2008) stipulated that "it is government policy that all mental health service users are assessed by specialist mental health services with regard to the potential risk of harm to others". The focus can be seen to be on the harm to others.

Over time risk assessments have ranged from clinical judgement, based upon information from the client to more complex and in-depth structures and validated/tested risk assessments. The more generic assessment tools only have a part dedicated to multiple risks, such as Functional Analysis of Care Environments (FACE) or Care Program Approach (CPA) whilst the more in-depth risk of violence or sexual violence assessment tools, for example Stable 2000 and HCR-20 will focus on risk (Hanson & Harris, 2000; Webster, et al.,
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1997). There are also tools that have been designed to assess risk of suicide or self-harm, such as Applied Suicide Intervention Skills Training (ASIST) and Suicidal Intent Scale (SIS) (DoH, 2007).

Clinical judgement alone as the basis of risk assessment has been shown to have a poor record of accuracy, (Convit, et al., 1988; Gondolf et al., 1990; Monahan, 1981; Steadman & Morrissey, 1982). Clinical prediction can be seen as at best weak and at worst totally unreliable (Clark, 1999; Blackburn, 1984). Hence the development of tools including other factors, leading to the advancement of more structured risk assessment tools, such as the HCR-20. As with other risk assessment tools the Clinical scale has been shown to not be a statistically significant prediction, with the Historical and Risk scales being shown to be good predictors of risk (Gray et al., 2008).

Kasperson et al. (1988) asserts that a confounding feature of risk perception has been has been that "some relatively minor risks or risk events, as assessed by technical experts, often elicit strong public concerns and result in substantial impacts upon society and economy" (Kasperson et al., 1988, p.177). This social amplification occurs when individuals try to manage ‘risk’ by employing simplified coping mechanisms that can in turn actually result in biases causing responses to risk that are distorted. This mechanism can be seen to be even more complex when considering risk management and decision making at management level.

**Professional best practice policies/guidance**

Best practice manuals in risk management indicate that risk assessment is integral to planning and care for individuals, including; mental state, past behaviour, social functioning and social circumstances (Morgan, 2000). The focus of best practice guidance appears to be on widening the understanding of risk issues and, therefore, expanding the repertoire of MHS responses. The current
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Best practice guidance stipulates 16 best practice points for effective risk management (DoH, 2007) (see Appendix B). These include statements about positive risk-taking, service user involvement/collaboration, consideration of diversity issues, harm prevention and having an emphasis on recovery and the service user's strengths. The conceptualisation of risk management in best practice guidance appears to be broader than some of the current thinking around risk issues and, if MHS were to follow these, it may influence the response to risk issues to be more measured and less risk averse.

**Operational responses to risk**

MHS use protocol led assessment processes to ensure that there is uniform and hopefully in-depth understanding of risk for each individual that is seen. Each individual and their situation should ideally and necessarily be assessed and managed idiosyncratically.

The rhetoric surrounding high profile cases involving violence by a user of MHS means that MHS are put under pressure from both within and without, people using services want to know that they will be looked after in a responsive and supportive manner, whilst the public and politicians want to be confident that services are safe and are able to protect them from the rare but catastrophic attacks (Laurence, 2003). The change in focus to individuals with mental health problems being seen as dangerous has impacted on services and resulted in them becoming risk averse. The shift in rhetoric that surrounds this emotive subject has compounded the averse risk taking stance of mental health services.

'Dangerousness' and mental health difficulties have now become synonymously linked with the advent of the term 'dangerous and severe personality disorder' (DSPD). This is not a happy marriage. How did the term ‘dangerous and severe personality disorder’
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(DSPD) ever find currency in scientific and political circles? Although it is necessary to use diagnostic terms to discriminate for the purposes of research, teaching, management and public protection, such a term, focusing as it does on dangerousness, seems designed to be stigmatising as well" (Kingdon, 2007). Also the related stigmatisation and automatic social exclusion means that change for individuals with this label is less possible (Kingdon, 2007). As labelling theory (Becker, 1963) describes, the effects of being given a negative label means that is difficult, for some almost impossible, for the individual to overcome. However, there are contradictory discourses about mental health, ‘risk’ and treatability. On the one hand is ‘DSPD’ equalling stigmatisation and social exclusion and, on the other, is a drive for personality disorder to no longer be considered as a diagnosis for exclusion (DoH, 2003). The rhetoric and political agendas that surround ‘risk’ result in MHS understanding of and response to risk issues clearly being adversely influenced.

However, the processes that occur alongside protocols will impact upon how teams manage ‘risk’. For example there is some evidence that discussions and the subsequent reaction chosen can actually escalate the situation and rather than reducing the risk behaviour it actually can serve to increase it (Wallach & Kogan, 1964). From my clinical experience this can occur with individuals who self-harm when their chosen method of self-harm is prohibited it can result in them using another means which can be more severe/damaging. When self-harm is seen as a form of individuals communicating their pain, just because you remove one method does not remove the need to express the pain, meaning an individual may resort to the next method available which could cause more harm.

To summarise, MHS responses to ‘risk’ are shaped by the social climate of the time. Currently the dominant discourses are about
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‘dangerousness’ and blame which results in MHS response to risk issues tending to be 'risk' averse, which can result in the responses to risk issues being precautionary/cautions. Meanwhile, there are also situational factors such as how the understanding and responses to risk at every level can actually serve to socially amplify ‘risk’.

What contributions can clinical psychologists make to the reconsideration of risk ideas and practices?

When thinking about how clinical psychologists (CP) can contribute several areas came to mind: one is the position of CPs within teams as leaders, secondly the skills that CPs have and how these may be applicable, and thirdly the notion of collaboration with service users and their understanding of risk issues.

Leadership

Clinical psychologists in leadership positions within their teams can, for example, help the teams to have consideration of recovery orientated approaches which counter some of the risk averse practices in MHS. I have clinical experience where I have seen risk issues reconsidered with the support of the lead clinical psychologist.

I worked as an assistant in a Women’s Mental Health Service (WS), including a medium secure unit, which took a recovery orientated approach, including positive risk-taking. The service was psychology led and with an underlying philosophy based on attachment theory\(^7\) (Hunt, 2006). Key to the understanding and management of risk issues was a multidisciplinary decision making process with collaboration and respect amongst the team members. This also helps to manage the ‘blame culture’ as there was a real notion of multidisciplinary team working, rather than it just being paid lip

\(^7\) Please see Appendix C for the key underlying principles of the WS.
service, meaning responsibility was shared, the leadership roles were clearly defined, but there was a flattened hierarchy allowing all team members to have input into discussions about risk issues. The top down approach where the philosophy of the service was developed by the management team at the services’ inception with all of the staff being selected due their psychological mindedness, meant that the service was able to integrate best practice guidelines with recovery approach practice, with government policies and procedures (Hunt, 2006). Key to this service was the position of the clinical psychologist being in a clear position of leadership, which is a role that clinical psychologists should take (DoH, 2005; BPS, 2007). This model appears to fit well with the New Ways of Working (DoH, 2007a) and therefore was possibly ahead of the times.

It is not always easy to facilitate the introduction of differing approaches to risk issues and management, that, to some, can been seen as counterintuitive to the dominant discourse of ‘dangerousness’. There can be resistance to change and the MHS policies and procedures may even make it hard. There is a tension between the aspects of mental health policy and practice that have at their centre risk and dangerousness verses recovery approaches (Fawcett & Karban, 2005).

I have experienced this tension when I worked in a men’s medium secure unit. I discussed the ideas of the recovery approach with the team leader but was told that ‘they’ (ward/centre) did not use this type of approach. The discourse within this service was about the ‘risk’ posed to others and dangerousness of service users. The driving forces were fear, blame/accountability and harm to others. However, the reconsideration of risk using the best practice guidelines and a recovery orientated approach would, hopefully, lead to a more dynamic conceptualisation of risk issues and how to manage them (DoH, 2007; RCP / SCIE / CSIP, 2007). Rather than
having a response to a serious incident that can amplify risk, there can be one that involves the service user to have a more proportionate response. Where the emphasis on recovery, self management, self responsibility, service user strengths and service user experience can inform MHS understanding and management of risk issues in a more holistic approach (DoH, 2007; RCP / SCIE / CSIP, 2007). However, there is currently a gap in the guidance about how practitioners might incorporate this into their everyday work.

Clinical psychologists are not immune to the culture of blame. Whilst on my adult mental health placement one of the recurring themes in supervision was the possibility of litigation i.e. if you were to appear in court how would your notes or reports be interpreted? When I asked if my supervisor had ever been asked to appear in court she replied “No”. Writing this essay has made me reconsider why this was a dominant theme. I now believe it was driven by the culture of blame and my supervisor feeling accountable for my work. Being on the receiving end of this very strong response to risk was actually an anxiety provoking experience and did not help a reconsideration of risk issues but rather the focus was on making sure all the procedures were correctly followed automatically without asking “Are these the most helpful ones to follow?”

Skills of clinical psychologists - Reflective space and emphasis on training
Multidisciplinary working appears to be a key element of a more dynamic and team approach to risk management. A team operating like this enables the skills and knowledge from the differing professional backgrounds to be utilised whilst sharing some common values with the aim of working towards shared goals. I have seen how professional differences can be a source of strength and expertise that are neither threatening nor undermining. My
experience enabled me to fully understand the meaning and value of multidisciplinary working when considering issues of risk.

One practical role that clinical psychologists can play within teams is to help the team to hold the uncertainty of 'risk' by the provision of a reflective space to explore risk issues. The key is to help teams to hold positions of safe uncertainty, which can be defined as developing a context where the system participants experience clear, agreed boundaries within which they feel respected and able to explore how they may wish to consider risk issues and how they would like to respond (Robinson & Whitney, 1999). This open exploration of the issues of risk and differing responses that can be taken can help people to hold/manage anxiety. However, as safe uncertainty is never a fixed place (Hardham, 2006) clinical psychologists can play a part in helping teams to manage this state of flux by the provision of reflective spaces for team members to explore their anxieties and process issues.

Training on risk assessment can make people feel more confident about risk assessment and management and can encourage staff to discuss risk with clients – this openness can help to reduce aggression and to facilitate better working relationships (Langan & Lindow, 2004). Clinical psychologists are well placed within teams to offer training on risk assessment, we have presentation and teaching skills that can be utilised to help MHS to reconsider risk in light of new approaches, tools and practises.

Service user involvement and formulation
Clinical psychologists (CPs) are well placed to facilitate service user collaboration with risk management through the therapeutic alliance, this assists to develop a better service. By gaining the service user's experience CPs can gain an insight into the real life factors that
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Impact on the idiosyncratic dynamic risk issues. This knowledge can help to manage risk issues within everyday practice. The process of collaborative integrative formulation enables CPs to consider, with the individual, "a multifaceted, high-level formulation that aims to encompass the complexity of an individual client, their family and their context" (Johnstone & Dallos, 2006).

Summary

Risk is a complex issue, within MHS especially. The drivers behind MHS understanding and management of risk issues are government and societal factors, which result in risk aversion. CPs can help to facilitate alternative approaches when they feel empowered.

"The tasks of the fifteenth theme of recovery suggested by RCP / SCIE / CSIP (2007) include moving beyond preoccupations with risk avoidance and working with constructive and creative or positive risk-taking. These pose significant challenges for MHS, which require recognition and deliberation if services are going to be able to rise to the challenge of becoming recovery-oriented (Tickle, unpublished).

From my experience of working within a recovery model approach that also promoted positive risk taking I have seen how clinical psychologists can help teams to hold differing positions regarding risk and help teams to hold anxieties. The integrated approach that the service held meant that the conceptualisation of risk was very different to other services I have worked in that are based on the medical model and psychiatry led, i.e. more traditional services. I will endeavour to take a positive empowered approach into my future work to help services have a reconsideration of risk issues and practices.
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Appendix A - 16 best practice points for effective risk management

(DoH, 2007)

Summary

Introduction

1. Best practice involves making decisions based on knowledge of the research evidence, knowledge of the individual service user and their social context, knowledge of the service user's own experience, and clinical judgement.

Fundamentals

2. Positive risk management as part of a carefully constructed plan is a required competence for all mental health practitioners.

3. Risk management should be conducted in a spirit of collaboration and based on a relationship between the service user and their carers that is as trusting as possible.

4. Risk management must be built on a recognition of the service user's strengths and should emphasise recovery.

5. Risk management requires an organisational strategy as well as efforts by the individual practitioner.

Basic ideas in risk management

6. Risk management involves developing flexible strategies aimed at preventing any negative event from occurring or, if this is not possible, minimising the harm caused.

7. Risk management should take into account that risk can be both general and specific, and that good management can reduce and prevent harm.

8. Knowledge and understanding of mental health legislation is an important component of risk management.
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9. The risk management plan should include a summary of all risks identified, formulations of the situations in which identified risks may occur, and actions to be taken by practitioners and the service user in response to crisis.

10. Where suitable tools are available, risk management should be based on assessment using the structured clinical judgement approach.

11. Risk assessment is integral to deciding on the most appropriate level of risk management and the right kind of intervention for a service user.

Working with service users and carers

12. All staff involved in risk management must be capable of demonstrating sensitivity and competence in relation to diversity in race, faith, age, gender, disability and sexual orientation.

13. Risk management must always be based on awareness of the capacity for the service user's risk level to change over time, and a recognition that each service user requires a consistent and individualised approach.

Individual practice and team working

14. Risk management plans should be developed by multidisciplinary and multiagency teams operating in an open, democratic and transparent culture that embraces reflective practice.

15. All staff involved in risk management should receive relevant training, which should be updated at least every three years.

16. A risk management plan is only as good as the time and effort put into communicating its findings to others.
Appendix B - “Key themes of recovery”

(RCP / SCIE / CSIP, 2007; cited by Tickle, 2009, unpublished)

1. Recovery is fundamentally about a set of values related to human living applied to the pursuit of health and wellness.

2. Recovery involves a shift of emphasis from pathology, illness and symptoms to health, strengths and wellness.

3. Hope is of central significance. If recovery is about one thing it is about the recovery of hope, without which it may not be possible to recover and that hope can arise from many sources, including being believed and believed in, and the example of peers.

4. Recovery involves a process of empowerment to regaining active control over one’s life. This includes accessing useful information, developing confidence in negotiating choices and taking increasing personal responsibility through effective self-care, self-management and self-directed care.

5. Finding meaning in and valuing personal experience can be important, as is personal faith for which some will draw on religious or secular spirituality.

6. Recognising and respecting expertise in both parties of a helping relationship which recontextualises professional helpers as mentors, coaches, supporters, advocates and ambassadors.

7. Recovery approaches give positive value to cultural, religious, sexual and other forms of diversity as sources of identity and belonging.
8. Recovery is supported by resolving personal, social or relationship problems and both understanding and realistically coming to terms with ongoing illness or disability.

9. People do not recover in isolation. Recovery is closely associated with social inclusion and being able to take on meaningful and satisfying social roles in society and gaining access to mainstream services that support ordinary living such as housing, adequate personal finances, education and leisure facilities.

10. There is a pivotal need to discover (or rediscover) a positive sense of personal identity, separate from illness and disability.

11. The language used and the stories and meanings that are constructed around personal experience, conveyed in letters, reports and conversations, have great significance as mediators of recovery processes. These shared meanings either support a sense of hope and possibility or carry an additional weight of morbidity, inviting pessimism and chronicity.

12. Services are an important aspect of recovery but the value and need for services will vary from one person to another. For some people, recovery is equated with detaching from mental health services either permanently or for much of the time. For others, recovery may be associated with continuing to receive ongoing forms of medical, personal or social support that enable them to get on with their lives.

13. Treatment is important but its capacity to support recovery lies in the opportunity to arrive at treatment decisions through
Professional issues Essay: How are issues of risk understood and responded to within mental health services. What contribution can clinical psychologists make to a reconsideration of these ideas and practices?

- negotiation and collaboration and it being valued by the individual as one of many tools they choose to use.

14. The development of recovery-based services emphasises the personal qualities of staff as much as their formal qualifications, and seeks to cultivate their capacity for hope, creativity, care and compassion, imagination, acceptance, realism and resilience.

15. In order to support personal recovery, services need to move beyond the current preoccupations with risk avoidance and a narrow interpretation of evidence based approaches towards working with constructive and creative risk-taking and what is personally meaningful to the individual and their family.
Professional Issues Essay: How are issues of risk understood and responded to within mental health services? What contribution can clinical psychologists make to a reconsideration of these ideas and practices?

Appendix C - The team as a ‘secure base’: principles for effective team work

- Clear and agreed philosophy, ethos and objectives.
- Clear leadership with defined responsibility and authority.
- Multidisciplinary team training, decision making and review of policies.
- Clear communication systems and agreed making procedures.
- Clarity of skills and roles of team members.
- Collaboration and respect amongst team members.
- Regular staff meetings to create a reflective and ‘critical’ working culture.
- Regular supervision and ease of access to support and additional supervision when needed.
- Emphasis on staff development.
- Focus on transference and counter-transference responses.

(Hunt, 2006)
A reflective account of the problem based learning exercise: "The relationship to Change"

PBL Year 1:
A Reflective Account of the Problem Based Learning Exercise: "The Relationship to Change"

March 2009

Year 1

Word count: 1981
A reflective account of the problem based learning exercise: "The relationship to Change"
Introduction

I have chosen a more free flowing writing style than I have previously used in academic work as this appeared to be a natural way to write reflectively. Within this reflective account I will drawn on my experiences of the task and clinical work to consider how I have both developed personally and professionally by going through this process.

Although I do not want to minimise or detract away from the experience of service users and carers, I feel that I can draw parallels between my own and their experiences of change and links with the process of this exercise.

The original ‘problem’

The group was set a topic of ‘The Relationship to Change’ and were provided only with the title, no other written guidance. Although this felt like I was embarking upon a new process that was quite daunting I felt quite excited at the prospect of being able to learn in a smaller group. It felt quite a relief being in our smaller group of 8 after being in such a large group 32 (the whole cohort). My experience of group work on my current placement echoes this feeling that smaller numbers enables the group to form and have a sense of cohesion, which can be more difficult with larger numbers. Studies on group size have produced conflicting findings about the quality of performance but have shown that there is less accord within larger groups (Ziller, 1957). The latter finding may be why I have found that smaller groups feel easier to work in. In the future it feels important for me to keep in mind the impact of group size on the participants and the group process.

Whilst I felt some excitement at the prospect of facing a new challenge presented by the task I also felt that having no real
guidance was disconcerting. The uncertainty was also felt within the group and was manifested by a desire for structure. This is consistent with theories that attributes problems encountered when facing change to people's wish for certainty and stability (Heller, 2003; cited in Boonstra, 2004). During our discussion we spoke about how the relationship to change differs depending on whether you have control of the process or not. When there is no control we felt that this caused greater uncertainty and may even result in resistance. Resistance to change can result in tension and possibly conflict, especially when seen as a threat to sense of self by individuals or groups. I have been able to reflect on my own recent experiences of change, there seems to be a lot within the last year! This experience of change has been one I have chosen and I have felt some level of control throughout the process. However, I have experienced real uncertainty which I have found hard to deal with at times.

When individuals choose change this appears to be more acceptable, in fact it can be quiet welcome. As new Trainees the change of starting the course is, at times, somewhat daunting. However, overall the process of training is actually an exciting, stimulating and hopefully fulfilling one. I must think about the part I play in the process of change, if I have some control and play my part in how change occurs it will be more rewarding.

I feel that within my current placement and in the future it will be useful for me to bear in mind feelings of uncertainty when undertaking my clinical work with others, when alone, co-working and through supervision. Within my clinical practice I will inevitably work with individuals who struggle to manage uncertainty, as this is a 'normal' human experience, and being sensitive to this will be crucial. Within my role as a clinician my work will range from providing information (psychoeducation) to guiding an individual to help them
A reflective account of the problem based learning exercise: "The relationship to Change"

to their own understanding. I will have to be able to work flexibly with individuals to meet their needs regarding any changes they may be facing.

I will also have to have consideration of how the experience of uncertainty, in the face of change, can impact on teams and wider systems when I am working in a position of leadership or management within my future career as a clinical psychologist.

The management of change with individuals, teams, systems and throughout society is key. When considering the process of change for the individual I have found the cycle of change useful (Prochaska & DiClemente, 1994, cited in McGuire, 2000). Whilst on my placement this has been reaffirmed by an experience with a young woman, who had a diagnosis of bi-polar, whose psychiatrist felt it would be useful to undertake psychology work to think about/learn about triggers/antecedents for her manic and depressive states. However, during the first assessment session she did not appear to be fully engaged in the process and she did not subsequently return for the next part of the assessment. I wondered whether she was at the pre-contemplative stage of change because she appeared ambivalent (Prochaska & DiClemente, 1994; cited in McGuire, 2000). I believe that it could be very important within the therapeutic relationship to consider what stage of change the individual at. If they are at an earlier stage you may have to work with them collaboratively to establish motivation.

The group process – fun verses serious

I felt our group was diverse both in regard to the observable and the more hidden characteristics. We were comprised of one male and seven female trainees, we had one of the older members of the cohort. We also had group members that face unobservable
difficulties, I am one of these as I am dyslexic which can cause me difficult in a variety of settings. Within the group setting initially I did not encounter obvious problems. When we started to discuss how our group would function when face-to-face and we were contemplating assigning tasks my anxiety levels were raised when we spoke about minute taking as this is a task that I find very hard to undertake, in fact it means that I am unable to take part in discussion as I have to focus on writing and spelling. However, as a group we appeared even at this early stage to be able to raise our concerns and appeared to be able to be sensitive to other people's difficulties. I feel that this is a very important quality/attribute that our group displayed and one that may have helped us to form in a relatively easy way.

After an initial broad discussion about the concept of change the group seemed to approach the topic in a very holistic way, considering change over time, at every level from the individual to systems, such as, political.

Our group initially seemed very task orientated. This is consistent with Bales (1953) assumption that the raison d'être of small groups is to achieve a set task and that will result in the activity within the group being task focused. The process of how we decided to assign our chair and scribe was democratic, with the end result being that we decided to alternate the chair and scribe on a rota system. The group then broke down the work into sections that were then completed in pairs, when the information was brought back and fed to the group we then reformed into different pairs to undertake the next section organised by skills and interests. This process of coordination may well have helped our group to avoid conflict that others groups reflected on experiencing. Coordination has been seen as an essential component of successful group performance (Tindale, 1998).
We fairly quickly reflected upon change being ubiquitous and that it would be interesting to consider this for our presentation. Change was seen as a complex, dynamic and continuous process - occurring at micro and macro levels. Following this idea we felt that it would be useful to think about the many levels of change. However, as the group discussed that change happens at the socio-political, institutional (NHS) and individual level it became clear that for some in the group this multi-dimensional view felt too complex. Within the group there was a point at which there was a temporary divide between the draw to have fun with the content and message of the presentation as opposed to wanting to be serious/structured. There appeared to be a drive for those who wanted a serious presentation with power point as they felt that this was their 'comfort zone' and they felt that as this was the way that they had undertaken presentations in the past. When looking back at my reflective account I found this a difficult and frustrating stage of the process. I believed that people's anxiety about undertaking a new task was impacting on their ability to be creative. On reflection this was our storming stage (Tuckman, 1965). Once the group members who were uncomfortable with a more free flowing presentation were reassured that we were going to have a solid structure with good content we appeared to get through the storming stage.

Our storming stage was relatively gentle. Overall the group appeared to be able to have an open and supportive dialogue which enabled individuals to raise their concerns and for their concerns to be addressed by the group as a whole. This did not make the process totally easy but did prevent real conflict. Our group interactions seemed to adhere to those noted by Bale (1953) where focusing on a goal to meet an ultimate end point will bring about task related (instrumental) behaviour and social-emotional behaviour that tends to be of a more supportive nature, which can act as a positive
reinforcement within the group process. We were using curiosity to help us to ask questions in a supportive and explorative manner.

The presentation

We had a chance to see two other group presentations, whilst watching it struck me that we had not used theory in same way as the other groups. The other groups had selected a theory of group process, such as, Tuckman (1965). The presentations then included how the group process was reflected the model, forming, storming, norming and performing. When the stages presented by Tuckman (1965) were presented I was struck by the storming stage. At first I felt that our group had not gone through this stage. However, on reflection I believe that in the earlier stages of our group forming we had a gentle storming (explored fully above).

The structure that our presentation was formed on was taken from Dicken's A Christmas Carol, where Scrooge had visions/dreams of the past present and two versions of the future. The group wanted to look at the 1980's, the present day and two alternative futures, future A where clinical psychologists took a back seat in relationship to change, whilst future B where clinical psychologist take an active part in the process of change. This enabled us to demonstrate how we can have an impact on the process of change and that by opting out of being a 'mover and a shaker' we may be complicit in adverse change happening.

I think that the feedback that resonated most with me was made by one of the tutors and then echoed by members of the cohort. They reflected on the fact that it made them think about their relationship to change within our profession and what role they wanted to have within the process.
Final thoughts

I feel that the process of the PBL exercise has enabled me to continue to consider the wider contextual factors of change that affect myself, clients, colleagues and systems. Also that within any process I will need to consider my experiences and assumptions that I bring to it. Furthermore, I will endeavour to be a 'mover and shaker'.
A reflective account of the problem based learning exercise: "The relationship to Change"

References


Problem based learning task: “How do we know if IAPT is working?”

PBL Year 2:
Reflective account of the problem based learning task:
“How do we know if IAPT is working?”

Year 2

March 2010

(Word count: 1985)
Problem based learning task: "How do we know if IAPT is working?"
Problem based learning task: "How do we know if IAPT is working?"

Introduction

I have chosen to structure this reflective account as follows: to look at the original "problem", group process, the presentation and my final reflections. Within my account of the self-directed problem-based learning group (PBL) I will explore the ways in which we carried out our work and the strengths and weaknesses of the approach taken. I will draw upon my experiences from the task and clinical practice to demonstrate my learning. The second and third years of the doctorate in clinical psychology were brought together and then divided into mixed groups of eight for this PBL exercise.

The original “problem”

The Layard report (London School of Economics, 2006) advocated that psychological service should be accessible to everyone in Britain. In response to the report a programme called Increasing Access to Psychological Therapies (IAPT) was commissioned, aimed, as the title suggests, to improve access for everyone to psychological therapies. The group task or problem was to prepare a consultancy report on how can the effectiveness of IAPT be assessed with the central question “How do we know if IAPT is working?” The group then had to give a presentation back to the two cohorts and members of the staff team.

At the time I felt that the main aim of this task was for us to gain a better understanding of IAPT with us thinking critically about the implementation, design and evaluation processes. I now believe that another aim of the PBL was to enhance our learning of group processes and dynamics, by providing a motivated and task focused environment in which ideas are developed and explored through discussion and debate, drawing on the expertise of the whole group.
Problem based learning task: “How do we know if IAPT is working?”

**Group process – chaos to clarity**

As I look back now at the group process I know that at times I felt very detached from the group. This was in part due to the group being very loosely formed, and that we only met for six meetings. On reflection, as the group was only set up for a one off task I do not believe that at the time I felt I had to get to know the group members. This was a real contrast to my experience of the first PBL exercise “The Relationship to Change” where we were in our Personal and Professional Learning Development Groups (PPLDG). Thinking now about these different experiences I feel that as I will be with the PPLDG for the next three years, having it timetabled and all being in the same cohort made the earlier process very different. On reflection I felt more need to form relationships and I had a sense of emerging commitment to the PPLDG. My thoughts now are that, in clinical practice, when we join a team in a permanent position this sense of commitment and a desire to form relationships are likely to be echoed. I learned that in clinical practice I would want to consider how a possible lack of both commitment and desire to build relationships may impact on group processes that meet for one off short-term projects.

The group process went through a cycle, moving between periods of activity followed by periods of apparently little activity. This pattern we, as a group, felt was akin to the pattern described by Gersick (1988) inertia, transition, inertia, completion. Or one proposed by Lewin (1951) unfreezing, confusion/transition, refreezing. As a group we reflected on these patterns which many of the group identified with. From our reflections on the group process I gained a better understanding of different models of group formation.

Due to other commitments I was not able to attend the briefing where designation to the group occurred. At the time I felt that this could
Problem based learning task: “How do we know if IAPT is working?”

have potentially meant I did not feel part of the group at the start. Had this happened I may have felt totally unconnected to the group which could have impacted on my participation in the task. However, this did not occur and I believe that I took on an active role within the group.

The way it was set up enabled me to feel part of the group. The first meeting was a briefing to the two cohorts setting up the groups rather than a discreet group meeting. When we had our first group meeting I felt I was part of a loosely formed group despite not having been there at the inception. Additionally, as I had not been the only group member unable to attend the briefing, meant the group took time to ensure that we were up to speed. This helped our group form and aided a consensus of understanding the task in hand. Now, looking back at this rather awkward yet ultimately helpful start, it makes me think about how on placement we have been trying to start up an Intensive Interaction training scheme. This group also had rather an awkward start due to many practical barriers, such as annual leave and bureaucratic processes. I now feel the start to our group was like a “real life” situation in which group members are unable to attend due to other commitments. I have learned how important it is to ensure when starting a project that all members are fully informed and a group consensus of how to proceed is achieved as part of a facilitating process.

Within the first group meeting we spent time discussing the set topic and task. We reflected on the diversity of the group, a mixture of both second and third years with a range of age, experience, interests and gender. At the time we reflected on the belief that this provided us with opportunities and challenges. One of the benefits we discovered was the breadth of experience. On the other hand there were many differing opinions meaning that, at times, the discussion was pulled in different directions. As the group formed, it
was naturally horizontally organized, whereby crucial decisions were made by majority consensus (Bridges, 1992). Whilst I now feel it was a strength for every member to have a voice, it could have been a weakness. It took time for everyone to be heard and time was limited which was a potential source of tension although this was never more than a good debate as our group seemed to communicate well. I have learned a key feature of a group is good communication as this can help any possible conflict be discussed and amicably sorted out.

As Bridges (1992) stipulates, as a PBL group we were responsible for scheduling our activity, deciding how to use the time to solve the problem/task and how we were going to facilitate our mastering of the learning objectives. I believe our approach to this task was a strength. On initially considering which aspect of IAPT to explore we realised a number of us had experience of child and adolescent mental health services (CAHMS) and thought this would be an interesting and different take on the IAPT agenda. Once the area to focus on was decided we had the following periods of activity - delegating research tasks, collecting data/information, coming back together to refine what we had found, delegating the writing up sections and the parts for the presentation. Following this we came back together to run through the presentation. Finally we successfully gave the presentation. Jones (1973) describes this process as immature, fragmented, sharing and effective.

Now, the group seems more structured than it did at the time. The periods of inertia seem to be a little lost when writing about the group process. It was during the periods of inertia, when communication often reduced, that I felt disconnected from the group and felt the demands of placement and academic work take precedence. This was a weakness in our group approach, and a possible solution to
Problem based learning task: "How do we know if IAPT is working?"

this would to have been to communicate more during these periods. As a group we openly spoke about the competing demands of other tasks which meant, at times, PBL felt “bottom of the list”. Through this experience I learned to think more about the competing demands in clinical practice, how we manage our workload and learn to prioritise. I hope throughout my training I will continue to develop skills to manage this issue.

My role within the group

Within the group I took the role of a ‘team member’ whereby I took individual notes, participated in discussion and helped to review resource materials (Bridges, 1992). When the group was in the active part of the cycle I felt like an active group member, able to offer my opinions and constructively add to the group learning process. I did wonder how others in the group may have perceived me as I did not take a leading role within the group. My role within the group gave me an insight into how important each role in a group is; even if it is not a leading role, each person can potentially make contributions.

Development of the group

Our group did not express any open conflict. I felt that there may have been some underlying conflict among members of the group but as the group was task focused with little time these conflicts were never brought to the fore. This was a strength of how our group worked. Within our every day practice this may be a very good feature of task focused time limited projects; that people focus on the matter in hand rather than being distracted by personal, professional or other differences.

The presentation

Each member of the group had a part to play in the presentation. However, when sat there during the presentation I thought we had a
slightly skewed presentation with our introduction being longer than necessary. We had chosen a format of a stakeholder meeting, enabling the views of service users and carers to be heard. Our introduction was setting the scene for the difference of IAPT within CAHMS from the adult model, we then went to the stakeholder meeting where the consultancy paper and the problematic issues were discussed, followed by our conclusions and reflections on the process.

We were able to explore the complexity of the outcome measures for CAMHS. The group felt a real concern that the data used for IAPT in CAMHS was collected over twenty years, meaning a long time before outcomes were known, and focused on monetary costs not individual wellbeing.

Feedback from the audience was that it was good to have focused on a different service and that we had managed effectively to bring in the service user and carer perspectives. The feedback was also that we had highlighted the challenge of considering the implementation of IAPT within CAMHS. Overall, at the time, I felt the presentation went well and we had chosen a different aspect to other groups which added to the discussion initiated by the presentations.

My final reflections

I believe that through this PBL task I have gained greater understanding of a number issues within a group process, such as the importance of good communication to ensure members feel a connection to the group and to resolve any conflict at an early stage before it really develops.

Also when we are working in teams we must give space for teams to consider the impact of the work on them. By offering reflective
Problem based learning task: "How do we know if IAPT is working?"

spaces staff can explore conflict within the team or difficult emotions which are raised by the close work we do with vulnerable people. These spaces can also help to improve communication within teams. I intend to take this idea into my future clinical work to help teams to communicate more effectively and have the space to work through difficult clinical and personal/professional issues.

This form of experiential learning has provided me with a learning opportunity that I have found helpful. I believe that I am developing knowledge about how to help teams function well and intend to integrate this into my clinical practice.
Problem based learning task: "How do we know if IAPT is working?"

References


Process Account of the Personal and Professional Learning Discussion Group in Year 1

The aim of this process account was to explore the group processes and the author's contributions to the group, whilst making theory practice links during the account. The author also intended to make explicit their understanding about how these experiences informed their practice within the NHS. Initially the author explored the development and the processes of the group to enable reflections on how the group developed and the strengths and weaknesses of the approach that the group took.

The account then explored the author's contributions to the group, the group discussions and how their contributions evolved over time. Within this section the author attempted to explore how other group members may have perceived their development within the group and how they may have contributed to others' learning.

The author reflected on how they were perceived by others. Being a loquacious group member they wondered about being seen as dominant. Whilst the author felt that this may have been the perception of others at the start of the year they felt that overtime rather than being my usual self they became less able to express themselves due to a difficult first year. In summary, although the author had at times struggled to use the group she felt that she had been able to gain professionally from the experience and to consider explicitly about how teams in the NHS are organised. The author stated that they would endeavour to take the knowledge gained about team practice and working with clients within their future clinical work.
This process account signifies the end of the second year of the Personal and Professional Learning Development Group (PPLDG). There were both ‘external’ change (a new facilitator, new group structure) and ‘internal’ change: a growing sense of safety and balance. Within my account endeavoured to contextualise the changes I saw within the group, both the content and process. I reflected on how I think the group and myself (both in the group and personally) developed. I considered the roles of others’ and my own within the group, and made relevant links between the experience of the PPLDG to my clinical practice. The account ends final reflections on how I thought the group process has influenced me (both personally and professionally). I considered throughout the account what I will take from this experience into my future practice.

From this group experience I feel that my self-awareness of role I play within groups has grown along with my increased understanding of group processes. I take into my practice my greater understanding of how to help foster a sense of safety and trust by using my therapeutic skills, in a range of working environments, and by paying attention to consistency and boundaries.
Overview of Clinical Experience

Adult Mental Health
This placement was split between a Primary Community Mental Health Team (PCMHT) and an Early Intervention in Psychosis.

Clinical Work: I worked with males and female clients aged from 18 to 63 years-old who were experiencing anxiety, depression, psychotic symptoms, obsessive-compulsive disorder and difficulties adjusting to chronic health conditions. I undertook cognitive assessments with three individuals, one of which contributed to a diagnosis of Asperger's Syndrome, another extended cognitive assessment that contributed to a diagnosis of a rare form of Alzheimer's, and gained experience of using standardised outcome measures in therapy. I contributed to a number of Care Programme Approach (CPA) meetings, taking the lead clinician role in two cases. Risk assessment was an ongoing process with all clients. I used complex formulations, cognitive-behaviour therapy, psycho-education, relapse prevention and behavioural programmes.

Group Work: I co-facilitated a cognitive behavioural group in the Day Service at the PCMHT for clients with Depression. I also was an observer in a Mindfulness Based Cognitive Therapy (MBCT) group.

Service Evaluation: For my SRRP I conducted an evaluation an MBCT group for both males and females with mixed presentations of both anxiety and depression.

Teaching and Presentations: I fed back the results of the group evaluation to the PCMHT.

Learning Disabilities
This placement was based in a Community Team for People with Learning Disabilities (CTPLD).

Clinical Work: I worked with males and female clients aged from 18 to 54 years old who were experiencing anxiety, depression, and difficulties adjusting to difficult life events. I undertook extended cognitive assessments with two individuals, one of which contributed to a diagnosis of Asperger's Syndrome, and gained experience in the use of standardised outcome measures in therapy. I undertook dementia
assessments for baseline and follow assessments. I undertook indirect work with carers to help support clients. Risk assessment was an ongoing process with all clients. I used cognitive-behaviour therapy, psycho-education, positive psychology, behavioural programmes and systemic family work during the course of this placement.

**Group Work:** I developed and co-facilitated a positive psychology group run at a local Day Centre.

**Teaching and Presentations:** I gave a presentation on adapting CBT for people with learning disabilities to the psychology team.

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**Older People:** this placement was in a Community Mental Health Team for Older People.

**Clinical Work:** I worked with males and female clients aged from 66 to 88 years old who were experiencing anxiety, difficulties with memory (including a range of dementias), depression and difficulties adjusting to aging and/or chronic health conditions. I undertook extended cognitive assessments with two individuals, assessing memory changes, and gained experience in the use of standardised outcome measures in therapy for this client group. Risk assessment was an ongoing process with all clients. I used cognitive-behaviour therapy, compassion focused therapy, psycho-education, behavioural programmes and systemic couples work during the course of this placement.

**Group Work:** I co-facilitated a cognitive stimulation group.

**Service Evaluation:** At the request of the Community Mental Health Team I conducted a service evaluation of a rugby reminiscent group to determine the effectiveness of the group.

**Teaching and Presentations:** I gave a presentation on Challenging Behaviour in Dementia to other professionals.

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**Child and Adolescent:** Child and Adolescent Mental Health Service.

**Clinical Work:** I worked with males and female clients aged from 4 to 17 years old who were experiencing anxiety, depression, difficulties at school and specific phobias. I undertook extended cognitive
Overview of Clinical Experience

assessments with two individuals, one of which contributed to a
diagnosis of Asperger's Syndrome, and gained experience in the use of
standardised outcome measures for therapy with this client group. Risk
assessment was an ongoing process with all clients. I used cognitive-
behaviour therapy, psycho-education, behavioural programmes and
systemic family work during the course of this placement.

**Group Work:** I developed and co-facilitated a cognitive behavioural
group for anxiety and depression.

**Service Development:** Development of the group described above was
a development within this service as it was the first time groups had
been run there.

**Teaching and Presentations:** I gave a case presentation on to the
trust wide CAMHS psychology meeting. I taught doctors basic
counselling skills.

**Adolescent Day Service**

This placement was in an adolescent day service aimed at preventing
inpatient stays with referrals from both Social Services and CAMHS.

**Clinical Work:** I worked with males and female complex clients aged
from 12 to 18 years old who were experiencing anxiety, depression,
psychotic symptoms, emerging personality disorder, obsessive-
compulsive disorder and difficulties adjusting to chronic health
conditions. I gained experience in the use of standardised outcome
measures in therapy. I used cognitive-behaviour therapy, psycho-
education, and behavioural programmes. This placement gave me the
opportunity to develop a better understanding of an adapted therapeutic
community approach to client care, with the clinical work being a holistic
approach with every interaction of the staff being considered to have a
potential therapeutic element, and how integrated teams can work well
together to manage high levels of risk.

**Group Work:** I developed and co-facilitated a self-esteem group.
Summaries of Case Reports
Case Report 1 – Adult

Cognitive behaviour therapy with a man in his early twenties, presenting with panic attacks and depression.

This present report involves a complex case of a male in his twenties, referred to Secondary Care Psychology with a presentation of panic attacks and depression. Following the initial assessment and formulation he was considered suitable for CBT. He was offered a course of CBT of eight month duration focusing on his panic attacks and low mood. When this case report was written only twelve sessions had been undertaken. The initial phase of the therapeutic process included two assessment interviews, CPA paperwork and a risk assessment. The second phase of the therapeutic process revealed further case complexities and, therefore, presented to the author as disjointed. This appeared to be due to the multiplicity of issues for the client, the inexperience of the therapist and difficulties within the supervisory process. This feeling of being disjointed, coupled with a lack of change within the client resulted in the therapist appearance stuck. Within the third and most recent phase of the therapeutic process there has been some progress and the therapist reflects upon how she overcame the difficulties. I address issues of diversity and the influence of wider environmental factors and reflect on the fact that the therapeutic process is entering a stage where, with good use of supervision and increased competence of the author, the application of CBT may become more successful. The author also reflects on her learning experience and the development of her skills.
Case Report 2 – Neuropsychology

A neuropsychological assessment of a man in his fifties with memory impairment issues.

This present report involves a complex case of a male in his fifties, referred to Neuropsychology with a presentation of difficulties with facial recognition and forgetting family member’s names. A comprehensive assessment was undertaken using a carefully selected battery of tests including; Wechsler Adult Reading Test (WTAR), Wechsler Adult Intelligence Scale (WAIS-III), Wechsler Memory Scale (WMS-III), the Hayling and Brixton and the Visual Object and Space Perception Battery (VOSP). Following the broad range of tests that formed part of the assessment it was apparent that he had a specific difficulty with an aspect of executive functioning combined with an element of visual spatial difficulties. For his executive functioning the findings present a mixed picture with the Stroop, Brixton and Trail Making suggesting that there is no global deterioration of functioning. Of the three hypotheses; Alzheimer’s Disease, Fronto-Temporal Dementia (FTD) or a lesion in the parietal lobe, it appears that (FTD) may be the more likely cause of his difficulties. However, the visual impairments were considered unusual so it was felt root cause of these difficulties still remains unclear. As the picture for causation remained unclear and to get a better understanding of the cause of his difficulties the recommendation was for him to have a neuroimaging Magnetic Resonance Imaging (MRI) scan. Additionally, if there is any further decline was observed he should be offered a reassessment. It was thought that it may be worth considering a reassessment in twelve months to check if there has been any further decline. (249 words excluding title).
Case Report 3 – Learning Disability

Integrated Attachment Narrative Therapy and Positive Psychology

with a woman with a mild to moderate learning disability in her early forties, presenting with behaviours described as a “compulsive obsession”.

This case report is about Sally, a white British female in her late forties, who has a mild to moderate learning disability (LD). She was referred to the Community Team for People with a Learning Disability (CTPLD) psychologist because she was displaying concerning behaviours, namely a “compulsive obsession” with buying clothes and storing them at home. Another concern was that she was following a male friend who did not want to see her in public. The team considered that this could be perceived as stalking. Following the assessment my working hypothesis was Sally lacked meaningful attachments and she attempted to fill the void/emptiness and make herself happy, by buying and storing clothes. It seemed that meeting her needs led to a repetitive/addictive pattern, which symbolise/substitute for a lack of secure attachments. Sally’s lack of sense of self, somewhat limited understanding of the “problems” and her desire to be in control of her clothing matched the focus of Attachment Narrative Therapy (ANT). Within the first two sessions we explored Sally’s attachments and narratives about her early life, family and current situation. I was struck by how problem saturated this approach felt with Sally. Within supervision I discussed my concerns and reformulated to integrate Positive Psychology to supplement ANT since there was a need to reflect Sally’s strengths and resilience. Sally responded positively to this change in focus and the outcome of the therapy was that she had decided not to follow her male friend and her clothes buying had reduced.
Case Report 4 – Older People

Oral case report of Narrative therapy with a woman in her late 70’s:

Paying attention to language as therapist

This oral case report focused on a woman who reported experiencing low mood and health concerns about her weight. These had been issues for her for some time. She described having experienced a number of episodes of low mood. She had seen her GP on a number of occasions to help with her low mood and weight, and a number of treatment avenues had been explored. I had met with her and her husband (who joined us for the end part of sessions when he was available) for 14 sessions of Narrative therapy. For the purpose of the oral case report I focused on the language that we use. When searching for alternative stories to challenge the dominant ones a key element facilitating ownership of the new emerging stories is to use the clients own language. Within the presentation I focused on this element and the challenges when learning a new skill set for a different model. The clip presented demonstrated using the client’s language to start to develop an alternative story. My learning and development as a clinical psychologist was explored throughout the presentation.
Case Report 5 – Child and Adolescent Mental Health

An extended assessment of an eleven year old boy presenting with behavioural difficulties in class, with the school querying difficulties associated with Asperger’s syndrome

The reader is taken through the process of an extended assessment of a boy aged 11 who was referred to the CAMHS team due to behavioural difficulties within the classroom. The school raised a query about whether he has difficulties associated with Asperger’s syndrome/autistic spectrum disorder (ASD). The following are covered - the referral; the initial assessment with an initial formulation and working hypotheses; the rationale to make an extended assessment; the extended assessment process; the reformulation and finally to the conclusions and recommendations. Concluding with critical reflections.

Sam had been seen twice before by a primary CAMHS worker, the intervention had seemed successful and it was felt an extended assessment would tease out Sam’s difficulties and needs. The extended assessment was comprised of a number of sources including: the referral letter, interviews with both Sam and his mother (covering his developmental history), Autistic Spectrum Screening Questionnaire (ASSQ) completed by his mother and the school, three professionals meetings, psychometric assessment of language and abilities, review of CAMHS case notes and discussion with the school’s Inclusion Coordinator. Sam had struggled to adjust to changes in his environment and the school has not been aware of the adjustments they had made intuitively for him. The conclusion of the assessment was support given to the school to help their thinking become transparent and Sam to be seen by a psychiatrist in the team for appropriateness for an ASD diagnosis.
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Service Related Research Project

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Acknowledgements

The author would like to thank all of those who made this service evaluation possible. She would particularly like to thank both her field and SRRP supervisor for their support throughout the research process. Thanks is extended to the group members who made this current piece of research possible.
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Abstract

This is an evaluation of Mindfulness Based Cognitive Therapy (MBCT) in a local PCMHT. The group comprised of seven participates, age ranged from 34 to 57, who completed three pre and post standardised psychometric tools measuring symptomology. They also completed a post group mixed method questionnaire. The pre and post measure were analysed using related t-tests. Although there were observable reductions in reported symptomology only one of these changes was statistically significant at the 0.05 level. The quantitative data produced from the mixed method questionnaire was depicted as descriptive statistics. The group members reported practicing the homework tasks with a range of average practises from 2.80 to 5.40 times per week. The descriptive statistics also showed that there was a range of responses for how helpful the elements of the group were from not so helpful to very helpful, with the most common responses being quite helpful or very helpful. Overall the group members reported that they felt positively about most elements of the group. The qualitative data from the group members' responses to the questionnaire was analysed using thematic analysis, producing three themes: benefit of the group experience; benefits personally gained; and difficulties with doing the homework and also not finding the homework helpful. The first two can be seen as positive reflections on the group process and the latter can been seen as constructive feedback about the level of homework being too much. An implication for future groups is that the service could consider the level of homework set.
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Introduction – Rationale

A local PCMHT planned to implement and evaluate a new group. The setting up of this group was due the service’s commitment to patient choice and was aimed at reducing the waiting list. The group proposed was Mindfulness Based Cognitive Therapy (MBCT). “Mindfulness means paying attention in particular way: on purpose, in the present moment, and non-judgementally” (Kabat-Zinn, 1994, p.4; cited in Segal et al., 2002). Mindfulness is a psychotherapeutic intervention that has become increasingly popular over the last twenty years, been adapted for a variety of difficulties, including depression, anxiety, OCD and psychosis, and integrated into a number of specific models (Fairfax, 2008). MBCT is one of these specific models integrating Eastern mindfulness meditation with cognitive therapy.

MBCT is seen as a cost effective way of delivering an intervention to a larger number of people than individual therapy would allow (Segal et al., 2002). Consequently, MBCT has been adapted so it can be a group and class based course. Initially MBCT was designed to prevent relapse or recurrence of major depression. Previous research indicated that MBCT can significantly reduce the risk of relapse/recurrence of depression for those patients who have experienced three or more previous depressive episodes (Teasdale et al., 2000). Other research indicated that it is possible to establish a mindful relationship with psychotic experiences, which was linked with improved general clinical functioning (Chadwick et al., 2005). Furthermore, there is evidence that MBCT, as a treatment for OCD, can be used to complement Cognitive Behavioural Therapy and Exposure and Response Prevention (ER-P), increasing their efficacy, and perhaps preventing relapse (Fairfax,
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2008). Overall there has been evidence that MBCT can be a useful intervention for a number of mental health difficulties.

**Setting**

As MBCT is at a relatively early stage of use as a therapeutic method there was real scope for the PCMHT to deliver a new therapeutic group, evaluate it and use any findings to enable service development. This was the first time MBCT had been delivered as part of the day services offered by the PCMHT. ‘Real life’ constraints, such as limited resources meant that the most cost effective way to run the group was for the participants to have a range of diagnoses. Within this service it was not possible to run separate homogenous groups for each condition as this could mean that they would be run infrequently.

A range of therapy groups are delivered by the PCMHT and the MBCT group was not a fundamental change to the standard service being delivered but an addition to the day care services. However, the type of the MBCT group is new and aimed at offering clients an experience providing useful knowledge and skills.

The group took place in a community setting at the PCMHT base. It ran for eight weeks from mid January 2009 to mid March 2009 (with one week break for half-term). Referrals came from the PCMHT, following an initial referral from the GP all clients were triaged by a member of the PCMHT (often a CPN). After triage if the team member considered the individual required secondary care, would benefit and met the requirements for the group, the client would be discussed at a team meeting. If the team felt the individual was appropriate for the group they were placed on the waiting list. Prior to the group starting each
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person on the list is assessed by a Clinical Psychologist to ensure they fully met the inclusion criteria for the group.

A Clinical Psychologist and an Occupational Therapist facilitated the sessions.

Content of Group

The content of the group followed the group programme set out by Segal et al. (2002), as follows:
Session one: Automatic Pilot
Session two: Dealing with Barriers
Session three: Mindfulness of the Breath
Session four: Staying present
Session five: Allowing/Letting be
Session six: Thoughts are not facts
Session seven: How can I best take care of myself?
Session eight: Using what has been learnt to deal with future moods

Objectives

- To see if there was any change in symptomology of the participants following participation in the MBCT group, by measuring the symptom levels of depression, anxiety and stress present before and after the group, using pre and post standardised psychometric tools.
- To gain service user feedback/evaluation of the group process using a post group mixed design questionnaire, providing qualitative data and information to qualify the findings.
- To provide feedback to the service.
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Method

Design

The service evaluation used a non-experimental mixed methods design.

Participants

Following triage each case was discussed at the PCMHT meeting and the group referral is made. Participants for the group were selected based upon the following inclusion and exclusion criteria:

Inclusion criteria:

- Adults 18-65
- Diagnosis of either OCD, Anxiety or Depression, or a combination of these that met the DSM-IV-TR criteria for these difficulties
- Able to currently utilise a psychological approach (as assessed by the Clinical Psychologist)

Exclusion criteria:

- Individuals with a diagnosis of psychosis

Data sources

Data was generated from the 7 group members.

- Data was completely anonymous
- No identifying features were included on the current report
- Although it is not possible to ensure that no damage or distress was caused by the data collection process all participants were fully supported throughout the process and ethical issues were considered in the design
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**Measures**

The evaluation of the impact of the group on their symptomology was achieved by administering pre and post standardised psychometric measures. The participants were also given a mixed method questionnaire (see Appendix A) assessing their impression of the group at the end of the eight sessions. In the previous studies there were a number of pre and post measures used that were accessible and the minimal time and cost of administering them meant it was possible to use these measures to evaluate this current group. The following measures were used:

Depression Anxiety Stress Scales (DASS) – (Lovibond & Lovibond, 1995) the 42-item self-report measure made up of three scales related to symptoms of depression, anxiety and stress. The DASS has been designed to measure the negative emotional states of depression, anxiety and stress (Lovibond & Lovibond, 1995). The DASS has been shown to have high internal consistency and to yield meaningful discriminations in a variety of settings (Lovibond & Lovibond, 1995). It has been found to have acceptable reliability for the depression, anxiety and stress scales (.91, .84 and .90, respectively) using Cronbach’s alpha (Lovibond & Lovibond, 1995).

Beck Depression Inventory (BDI) – (Beck et al., 1979) a widely used 21-item self-report measure of severity of depressive symptoms, baseline assessment. The BDI covers affective, cognitive, motivational, behavioural, and biological symptoms of depression and yields scores ranging from 0 to 63. The BDI has acceptable psychometric properties that have been reviewed elsewhere (see Rabkin & Klien, 1987). BDI has a high internal consistency of 0.92 and test retest correlation of 0.93 (Beck et al., 1996).
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Beck Anxiety Inventory (BAI) – (Beck et al., 1988) a widely used 21-question multiple-choice self-report inventory used for measuring the severity of an individual's symptoms of anxiety. The BAI provides discrimination between depression and anxiety (Beck et al., 1988). The BAI has high internal consistency of 0.92 and test re-test reliability of 0.75 (Beck & Steer, 1990).

The members of the group were given the mixed method questionnaire at the end of the eight sessions. It asked them about their experience of the group and how often they completed the homework set every week. This consisted of 22 statements on 5-point Likert scale, with a series of open ended questions and contained a table to record the amount of homework practice they had managed, noted by how many times per week 1 to 6 times.

Procedure
All participants were provided with a set of the psychometric measures before they attended the first session. They were asked to bring the completed psychometric questionnaires to the first session, which all of them did. On completion of the eight sessions the participants were provided with a set of the psychometric measures and a copy of the questionnaire (see Appendix A). They completed both the psychometric measures and the questionnaire at the end of the last session and handed them in before they left. The group members were reassured that all the data would be anonymised.
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Results
Symptomology
Related t-tests were carried out on the pre and post means, see Table 1
below for the results.

Table 1: Showing the pre and post means, t values and 2-tailed
significance for the five scales measuring symptomology

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre Mean</th>
<th>Post Mean</th>
<th>t</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DASS Anxiety</td>
<td>12.71</td>
<td>9.29</td>
<td>1.297</td>
<td>.242</td>
</tr>
<tr>
<td>DASS Depression</td>
<td>18.14</td>
<td>14.14</td>
<td>1.764</td>
<td>.128</td>
</tr>
<tr>
<td>DASS Stress</td>
<td>16.29</td>
<td>12.29</td>
<td>2.407</td>
<td>.053</td>
</tr>
<tr>
<td>BDI</td>
<td>23.14</td>
<td>17.14</td>
<td>1.935</td>
<td>.101</td>
</tr>
<tr>
<td>BAI</td>
<td>13.57</td>
<td>15.57</td>
<td>-0.816</td>
<td>.445</td>
</tr>
</tbody>
</table>

Although there was an observable reduction in four of the five symptom
scales only one of these changes could be seen as statistically
significant, the DASS Stress scale with Sig. (2-tailed) of .053,
significance level 0.05. The BAI scale was the only scale with an
observable increase in reported symptomology. However, all changes
other than on DASS Stress were not statistically significant. Overall
there is only one change that can be considered statistically significant.
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Service user feedback

Usefulness of the different elements of the group

Table 2: Showing the range and the modal response for the tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Range of responses</th>
<th>Modal response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raisin task</td>
<td>Not → Very</td>
<td>Not/Quite</td>
</tr>
<tr>
<td>Guided body scan</td>
<td>Unhelpful → Quite</td>
<td>Quite</td>
</tr>
<tr>
<td>3-minute breathing space</td>
<td>Quite → Very</td>
<td>Very</td>
</tr>
<tr>
<td>Everyday tasks</td>
<td>Undecided → Very</td>
<td>Quite/Very</td>
</tr>
<tr>
<td>Mindful seeing tasks</td>
<td>Undecided → Very</td>
<td>Quite</td>
</tr>
<tr>
<td>Stretch and breath</td>
<td>Quite → Very</td>
<td>Quite</td>
</tr>
<tr>
<td>10-minute sitting meditation</td>
<td>Undecided → Very</td>
<td>Undecided</td>
</tr>
<tr>
<td>20-minute sitting meditation</td>
<td>Undecided → Very</td>
<td>Undecided</td>
</tr>
<tr>
<td>30-minute silence</td>
<td>Unhelpful → Very</td>
<td>Undecided</td>
</tr>
<tr>
<td>Pleasant events calendar</td>
<td>Not → Very</td>
<td>Undecided/Quite /Very</td>
</tr>
<tr>
<td>Unpleasant events calendar</td>
<td>Not → Very</td>
<td>Quite</td>
</tr>
<tr>
<td>Staying with your thoughts</td>
<td>Not → Quite</td>
<td>Quite</td>
</tr>
<tr>
<td>Challenging your thoughts</td>
<td>Undecided → Quite</td>
<td>Very</td>
</tr>
<tr>
<td>Increasing ‘up activities’</td>
<td>Undecided → Very</td>
<td>Very</td>
</tr>
<tr>
<td>Being non-judgemental</td>
<td>Quite → Very</td>
<td>Quite</td>
</tr>
<tr>
<td>Facilitators presentation style</td>
<td>Not → Very</td>
<td>Quite</td>
</tr>
</tbody>
</table>

Key
Unhelpful = Unhelpful
Not = Not so helpful
Undecided = Undecided
Quite = Quite helpful
Very = Very helpful

Table 2 shows that overall the group members reported that they found most elements of the group quite helpful or very helpful. Overall this
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indicates a positive response about the group's content. On the Raisin task the group members reported a mixed response. For the 10-minute sitting meditation, 20-minute sitting meditation and the 30-minute silence the group members gave a neutral response. Whilst for the pleasant events calendar the responses evenly ranged from neutral to positive.

**Number of Times Tasks Completed Per Week**

**Table 3:** Showing the average times the group members practised the homework tasks and the range of times the homework tasks were practised per week

<table>
<thead>
<tr>
<th>Task</th>
<th>Average</th>
<th>Range per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guided body scan</td>
<td>3.28</td>
<td>1 – 6</td>
</tr>
<tr>
<td>3-minute breathing space</td>
<td>3.43</td>
<td>3 – 6</td>
</tr>
<tr>
<td>Everyday tasks</td>
<td>5.17</td>
<td>3 – 6</td>
</tr>
<tr>
<td>Pleasant events calendar</td>
<td>4.80</td>
<td>3 – 6</td>
</tr>
<tr>
<td>Unpleasant events calendar</td>
<td>3.67</td>
<td>2 – 6</td>
</tr>
<tr>
<td>Mindful daily activity</td>
<td>4.83</td>
<td>4 – 6</td>
</tr>
<tr>
<td>Mindful yoga</td>
<td>3.00</td>
<td>2 – 6</td>
</tr>
<tr>
<td>Stretch and breath</td>
<td>3.17</td>
<td>2 – 6</td>
</tr>
<tr>
<td>Guided sitting meditation</td>
<td>3.16</td>
<td>1 – 6</td>
</tr>
<tr>
<td>30-minutes silence</td>
<td>2.80</td>
<td>1 – 6</td>
</tr>
<tr>
<td>Staying with your thoughts</td>
<td>5.40</td>
<td>5 – 6</td>
</tr>
<tr>
<td>Challenging you thoughts</td>
<td>5.20</td>
<td>4 – 6</td>
</tr>
<tr>
<td>Increasing ‘up activities’</td>
<td>5.40</td>
<td>4 – 6</td>
</tr>
</tbody>
</table>

Overall Table 3 shows that the group members reported a range of times practised per week for all the activities. With the average time a task was practised ranging from 2.80 times per week to 5.40 times.

**Thematic Analysis**

Overall the group members reported on a sliding scale that they felt they had benefited from the group (five group members gave a positive response – on the 'Very much' positive end of the scale, one neutral in the centre of the scale and one negative – on the 'Not at all').
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Using the thematic analysis methodology set out by Braun and Clarke (2006) the qualitative data was analysed in the following way: the responses to the open-ended questions were coded into categories and then the main themes were drawn from these. There were three main themes: benefit of the group experience; benefits personally gained; and difficulties with doing the homework and also not finding the homework helpful. The themes and the data that supports the themes are shown in Table 4 on the next page.

Table 4: Results of thematic analysis showing the three themes

<table>
<thead>
<tr>
<th>Theme: Group experience</th>
<th>Theme: Personal gains</th>
<th>Theme: Difficulties with homework/what should be different</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reminded me that I am not alone/unique in having challenges that affect my wellness</td>
<td>Has helped me step back and face problems/difficulties with a clear and concise way.</td>
<td>(How did you find the homework?) Too much to do – especially the long mediation</td>
</tr>
<tr>
<td>Opportunity to step back and watch rather than being part of (it)</td>
<td>Awareness of “circling thoughts” and negative thinking – habitual patterns</td>
<td>Reduce homework</td>
</tr>
<tr>
<td>The group have made me feel that I am not alone in these problems</td>
<td>I was able to practise what I had learnt in the group and build a routine of doing the meditation</td>
<td>Less homework</td>
</tr>
<tr>
<td>Good to meet others in same situation - more reflective and aware</td>
<td>I’ve been able to control (if this is possible) my thoughts</td>
<td>Reduce the intense amount of homework</td>
</tr>
<tr>
<td>Listening to other peoples experiences</td>
<td></td>
<td>(The homework was) too complicated and long</td>
</tr>
<tr>
<td>Meeting other people with difficulties</td>
<td></td>
<td>Too much (homework) felt overwhelming</td>
</tr>
<tr>
<td>The group was very friendly it felt safe and comfortable place to speak out on difficult subjects</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Discussion

Although there was a positive trend in symptom reduction, only one facet of this was statistically significant and it is useful to consider why this may be. Should we be evaluating our services based only on statistically significant measures or should we be looking at the clinical significance? Statistical significance tells us little about the efficacy of a psychotherapeutic method and does not allow us to measure the extent to which a therapy group has moved someone outside of the range of the dysfunctional population or to the range of the functional population, this has been described as clinical significance (Jacobson et al., 1984: cited in Jacobson & Truax, 1991). The majority of the group reported that they found the group beneficial and they found the homework tasks quite helpful or very helpful, which implies that they felt that they had gained from the group although this does not appear to have been reflected in statistically significant changes in symptomology.

When considering the qualitative element of the evaluation three themes emerged. Two of these indicate positive reflections on the group process and personal gains and the last theme can be taken as constructive feedback about one element, namely the level of homework (which was regard by the participants as too much). This feedback gave a real insight into the service users’ experience of the group and will enable the service to consider how the next group could be improved in light of the constructive feedback provided by group members.

A clinical observation made was that when visually comparing the data there appeared to be evidence that those who had practised the most had reported gaining most from the group. This was also true when comparing what the group members reported in the group, which was
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that those who were able to follow the homework set appeared to report they were finding the group more beneficial that those who reported struggling to find the time to complete the homework tasks. Furthermore, when looking at the data the group member that had the greatest reduction in symptomology had completed the most consistently high level of homework. It appears to be the case that those who were able to practice the skills more frequently were those that then reported having gained the most from the group. This is an important message for future groups.

Limitations

- The results are based on one group meaning they cannot be generalised.
- The layout of the questionnaire was such that one of the questions was not consistently answered
- Not all the questions were answered
- Within the limitations of this current evaluation it was not possible to also compare the level of homework completed with how people experienced the group. Given the clinical observation (noted above) this may be an important factor to consider when running future groups
- As there was no long term follow up this study was not able to look at prevention of relapse where other studies have shown MBCT to be effective
- The mixed method questionnaire was completed within group time/space and this may have led to a positive bias.
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Recommendations

- Consider whether the service should run the group at point form discharge of services when the participants are 'well enough' at group commencement

Service-related implications:

- This information could be used to shape future groups and consider how to spend funds in the future
- The group may be run again and any data about the experience of the group members from this evaluation could inform how the group is run in the future
- The results suggest that the group may be better suited to those people who are more fully recovered.

Feedback to the service

At the time of writing, arrangements have been made to present the findings to a team meeting on the 14th August 2009. The report will be made available to the staff team.

Summary

Overall the group members appear to have found it to be helpful and beneficial. Attendance at the group was consistent and participants seemed positive about the group, but did feel that the expected level of homework was too much.
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References


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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

Appendix A - Group evaluation form
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.
MBCT Evaluation

Thank you for completing this evaluation of your group. Your comments and feedback will be used wherever possible to improve the groups we run in the future. It is important that you are honest and your answers are anonymous for this reason.

The following questions are about the level of therapeutic benefit you received from the group.

Overall, did you benefit from the group? (Please mark the line somewhere between each statement)

Not at all _______________________________________________ Very much

How helpful or unhelpful did you find each of these topics? (Please tick the box which corresponds most closely with your assessment)

<table>
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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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Additional Information

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In what way(s) do you think you have benefited from the group?

Which aspect of the group did you find most helpful?

What aspect of the group did you find least helpful?
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

How did you get on with the home based tasks (we would like to see how easy/difficult it was to follow the programme)? *(Please tick the box which corresponds most closely with your experience of doing the homework on the weeks that it was set)*

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<td>3) Increasing 'up activities'</td>
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</table>

Did you find the home based tasks helpful?  YES/ NO

Why did you find them helpful/unhelpful?
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

What helped you to do the home based tasks?

What did not help you to do the home based tasks?

Were there areas you think the group should have covered but did not?

What would you change about the group?

Would you make any practical changes to the way in which we run the group, eg time, place, ambience, number of people, intensity over the eight weeks, handouts .........................

Any other comments?

Thank you for completing this form

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SRRP: An evaluation of a community based heterogeneous mindfulness-based
cognitive therapy group.

Appendix B - Related t-test
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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<th>Pre Std. Dev</th>
<th>Pre Std. Error Mean</th>
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Paired Samples Test

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</table>
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

Appendix C – Tables of descriptive statistics for the different elements of the group programme
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.
**SRRP:** An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

### Raisin task

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### Guided body scan

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<tr>
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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

**Everyday tasks**

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**Mindfulness seeing tasks**

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**Stretch and Breath**

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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30-minute silence

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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### Increasing 'up activities'

129
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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**Facilitators presentation style**

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Appendix D – Number of times per week participants practiced homework tasks
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

### Stretch and breath

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

### 30-minutes silence

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SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

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SRRP: An evaluation of a community based heterogeneous mindfulness-based
cognitive therapy group.

Appendix E – Proof of SRRP presentation
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.

: SRRP presentation proof

Tara Daniels [Tara.Daniels@sabp.nhs.uk]

Sent: 15 March 2011 13:02

To: Edwards PB Ms (PG/R - Psychology)

This is to confirm that Blossom Edwards presented her SRRP to our team on 14th August 2009.

Yours sincerely,

Dr Tara Daniels
Principal Clinical Psychologist
SRRP: An evaluation of a community based heterogeneous mindfulness-based cognitive therapy group.
### Research log check list

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Executive summary of Qualitative Project

In recent years there has been a marked increase in recognition of the value of clinical psychologists in the National Health Service (NHS). Unlike other health professions clinical psychologists require specialist supervision to maintain the quality of their work and to ensure they maintain a solid evidence based practice throughout their career. The government paper, *New Ways of Working* emphasizes the importance of the supervisory role in this discipline; however, in reality there appear to be few opportunities and unclear guidelines for psychologists in their journey to becoming supervisors. This project aims to explore what has been offered to 3rd year trainees on the University of Surrey Doctoral programme in Clinical Psychology, with a view to provide useful recommendations to academic staff. Six, 3rd year trainee clinical psychologist were invited to take part in a focus group. The data was analysed using qualitative methods to capture group experiences in an informal setting. A group approach was applied to analyse the data following strict guidelines to ensure credibility of the findings. Two broad themes emerged namely *Learning from Placement* and *Lack of Formal Training* which highlighted a shared view that firstly, most trainees at present only obtain experiential skills on supervising during their placements and secondly they receive very little formal teaching at the university. Thus it was concluded that doctoral training in clinical psychology may need to reconsider ways of integrating these skills more formally in order to prepare trainees to confront this role with confidence.
MRP: Do dysphoric students have an enhanced theory of mind?

MRP
Do dysphoric university students have an enhanced accuracy of mental state decoding?

by
Blossom Edwards

Submitted for the degree of Doctor of Psychology (Clinical Psychology)

Department of Psychology
Faculty of Arts and Human Sciences
University of Surrey

December 2011

Word count: (19878 – 102 numbers in tables)
19776

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MRP: Do dysphoric students have an enhanced theory of mind?
MRP: Do dysphoric students have an enhanced theory of mind?

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Abstract

Title: Do dysphoric students have an enhanced theory of mind?

Objective: Recent theories of depression have suggested that Theory of Mind may play a contributing role in the condition. The aim of the current study was to investigate the possible association between dysphoria and theory of mind (ToM).

Design: A quantitative cross sectional questionnaire-based correlational design was used.


Participants: Undergraduate students currently studying at the university.

Measures: The demographics were measured using a non-standard questionnaire developed by the researcher, the questionnaire enquired about gender, age, ethnicity and education level attained. Dysphoria was measured by the PHQ-9 which scores each of the 9 DSM-IV criteria. Anxiety was measured by the Mood and Anxiety Symptoms Questionnaire-D30 (MASQ-D30) which is comprised of thirty questions. The Mill Hill Vocabulary Scale (MH) was used to measure the participants Intelligent Quotient (IQ). A more robust assessment was attempted by using three Theory of Mind (ToM) measures, namely Reading the Mind in the Eyes Test (RME), Strange Stories Test (SS) and the reduced Faux-Pas Test (FPT).

Results: The findings of this study are that dysphoric students do not perform significantly differently to their non-dysphoric counterparts, for accuracy on ToM measures, for time taken on the RME and for valence.

Conclusions: The current findings are suggestive of different sub-groups being found within depression.
MRP: Do dysphoric students have an enhanced theory of mind?
MRP: Do dysphoric students have an enhanced theory of mind?

Acknowledgements

My first thanks are to my supervisors, Fiona Warren and Clara Strauss, for all their help and guidance throughout my research process. I would like to thank the participants who took the time to complete the survey. Andrew Barns needs to be thanked for all his help with constructing the survey and being patient with my “endless” “just one more thing to change”. Thanks are due to a number of my peers who have provided support and advice throughout my training experience – they know who they are. I would also like to thank Susie Morton for all her help with paring down words. Special thanks are due to my parents, Pat Edwards and Michael Bland, whose enduring support throughout my training process has made the journey possible, in particular for their excellent proof reading skills.
MRP: Do dysphoric students have an enhanced theory of mind?
Introduction

Whilst we will all experience low mood as a reaction to difficult life events, such as the death of a loved one or failing an important assignment, individuals experiencing depression have a low mood that persists over time causing disruption and impairment to functioning (Gotlib & Hammen, 1996). Depression is a common and debilitating problem (Lopez et al., 2006; Ratigan, 1997). Researchers have proposed a broad range of theories explaining depression (e.g. Abraham, 1988; Beck et al., 1979; Beck & Alford, 2009; Coyne, 1985; Freud, 2001; Lewinsohn et al., 1979). There are emerging contradictory theories hypothesising (a) vulnerability to depression is "associated with" poor Theory of Mind (ToM) (e.g. Zobel, 2010) (b) that a feature of dysphoria is having an enhanced theory of mind (Harkness et al., 2005). The current study seeks to further explore dysphoria and ToM abilities by partially replicating and extending an existing study, by Harkness et al. (2005). Initially the concepts and theories of depression and ToM will be outlined. Secondly, consideration of the application of a ToM framework to explore depression will be discussed to clarify the focus of this project.

Depression

What is Depression\(^8\)?

On first considering the concept of depression it seems appropriate to start with the diagnostic criteria. Current National Institute of Clinical Excellence (NICE) guidelines use the Diagnostic and Statistical Manual of Mental Disorders 4\(^{th}\) Edition (DSM-IV; American Psychiatric Association (APA), 2000) criteria for definition and

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\(^8\) The term depression can also be used to describe bipolar, which features both low and high periods of mood. However, throughout this study depression will refer to unipolar depression unless otherwise stated.
diagnosis (NICE, 2010). Recent NICE guidelines set out the 'sub-threshold depressive symptoms', falling below the criteria for major depression, and require at least one key symptom of depression being present but with insufficient presence of other symptoms and/or insufficient functional impact to meet the full diagnostic criteria (NICE, 2010). The DSM-IV depression diagnostic criteria for a major depressive episode are at least five symptoms of depression (listed below) present for at least two weeks and one must be either depressed mood or loss of interest/pleasure (APA, 2000). Aside from low mood and lack of pleasure/interest there is no one symptom reported that necessitates a diagnosis of depression according to the DSM-IV criteria (APA, 2000). The nine symptoms are:

1. Depressed mood
2. Diminished interest or pleasure in all, or almost all activities, most of the day, nearly everyday
3. Significant weight loss or gain when not dieting (more than 5 percent of weight in a month) or decrease in appetite
4. Insomnia or hypersomnia nearly every day
5. Psychomotor agitation or retardation nearly every day
6. Fatigue and/or loss of energy
7. Feelings of worthlessness or excessive or inappropriate guilt
8. Diminished ability to think/concentrate
9. Recurrent thoughts of death (not just a fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or specific plan for committing suicide.


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9 The earlier NICE guidelines used the ICD-10 — see Appendix A - ICD-10 classification of depression.
The DSM-IV divides depression into four sub-categories (APA, 2000):

- Sub-threshold depressive symptoms, which requires fewer than 5 symptoms of depression being present.
- Mild depression where few, if any, symptoms of depression in excess of the 5 required to meet the diagnostic criteria are present, and symptoms result in only minor functional impairment.
- Moderate depression being defined as when the symptoms of depression present, or the impact of the functional impairment, are between 'mild' and 'severe'.
- Severe depression being when most symptoms of depression are present, and the symptoms markedly interfere with functioning. Severe depression can occur with or without psychotic symptoms.

**Definition of dysphoria**

Dysphoria can be defined as a state of unease or generalised dissatisfaction with life, which is the opposite of euphoria (Oxford Dictionaries, 2011). Dysphoria is generally used to refer to low mood, which may be with or without the presence of other symptoms of depression. Dysphoria includes individuals reporting symptoms associated with mild to moderate depression over the last two weeks and those who are experiencing more severe symptomology. Within this study dysphoria is used to describe those experiencing, self-reported, symptoms of depression that would meet the diagnostic criteria but who may not have a formal diagnosis of depression.

**Prevalence of depression**

Prevalence rates within UK urban areas at a single point in time are found to be between 12.8% and 17.1% (Ayuso-Mateos et al., 2001). The relatively high prevalence rates for UK populations are indicative
of the need for research to understand the factors associated with depression. Variations in prevalence rates may reflect different criteria being used for “depression categories”.

Age of onset (first episode of depression)

Vulnerability and predictive factors of depression are different for each individual, which can lead to differing ages for onset of a depressive episode (Gotlib & Hammen, 1996). Beck’s (2009) systematic review of depression research summarised that the average age on onset varied considerably suggesting definitive conclusions could not be drawn.

Gender differences

Research within the general population found differences between the prevalence rates of depression for males and females (Nolen-Hoeksema & Hilt, 2009). Females generally report higher prevalence, incidence and morbidity risk throughout the life cycle from puberty, persisting into adult life (Piccinelli & Wilkinson, 2000). Research within the general population in England, Wales and Scotland showed the small differences found in prevalence rates for symptoms of depression between adult men and women (16 to 74 years old), were not statistically significant (Singleton et al., 2001). Additionally, Beck (2009) found that several studies have not found any gender differences between college students (18-24 years-old). Findings about gender differences are mixed suggesting it is not possible to draw definitive conclusions. The findings that match the sample for this study indicate there is not a statistically significant difference in prevalence rates for males and females.
Features associated with depression

Individual

The nature of depression is idiosyncratic so it is hard to generalise how an individual experiences an episode. However, there are clear themes that individuals report when experiencing depression. The cognitive behavioural model (Beck, 2008) theorises that there are four areas depressed individuals report as experiencing change in, and these are seen as characterising depression; feelings (sadness, dejection, lack of pleasure, guilt), physical well-being (loss of appetite, excessive tiredness, difficulty sleeping), cognition (hopeless thoughts about the future, beliefs about low self-worth) and behaviour (social withdrawal, excessive sleeping, over/under eating). Within cognitive therapy these different aspects of depression are seen as mutually reinforcing, thus once started, a depressive episode can be easily maintained.

The numerous possible combinations of the symptoms listed above means some depressed individuals find social interactions less rewarding (Nezlek et al., 2000). A common theme for some people diagnosed with major depression is having more disrupted social networks than non-depressed individuals, they also report reducing their number of social contacts (i.e. withdrawing from social life) (e.g. Rippere, 1980; Billings & Moos, 1984; Gotlib & Lee, 1989). Whilst there are some common themes, the complex presentation of depression varies between individuals and can even fluctuate over time (Schwartz & Schwartz, 1993). Thus the subjective experience of depression and its impact is different for different people.

Family

As with other mental health difficulties, there can be associated economic and emotional costs to families. Depression has been theorised as having a pervasive impact on multiple aspects of family
life (Sholevar & Schwoeri, 2003). There can be financial costs associated with depression borne by families, e.g. an individual with depression may have to leave employment or take part-time/lower paid work (House of Lords (HoL), 2007). Furthermore, other members of the family may become the carer with the emotional, practical and health impacts for carers being potentially substantial (Layard et al., 2006; HoL, 2007; Marshall & Harper-Jaques, 2008). Research has shown depression to be more prevalent within lower income groups (Beck & Alford, 2009; HoL, 2007). Researchers stipulate that policy and practice makers need to consider the largely hidden financial impact on individuals and families experiencing mental health difficulties (HoL, 2007). Individuals experiencing depression, and their families, are often within fairly marginalised groups and not paying attention to their needs could potentially serve to exacerbate their social exclusion (HoL, 2007).

**Economic**

Economic costs associated with depression, within the UK, are considered to be a significant burden to individuals, their families, the healthcare system (re: cost of medication and professionals’ time) and the wider economy, through loss of productivity at work (Layard et al., 2006; NICE, 2010). Research has shown that within the UK, during 2007-8, depression cost the NHS over £200m: cost of GP consultations £33m, cost of anti-depressants drugs £264.5m and hospital treatment for depression £218m (Savage, 2009). The financial economic cost alone indicates a need to undertake research to reduce the economic burden.

**Risk factors, relapse and chronicity**

Research has found one common predictive factor for future depressive episodes is having one prior episode (Gotlib & Hammen,
A recent systematic review, of 25 relevant primary studies, examining the risk factors for chronic depression (where the medium duration is 20 years) identified three: family history of mood disorders, younger age at onset, and longer duration of depressive episode (Hölzel et al., 2011). Empirical research into relapse indicated, following a first episode of depression, about half of all cases would experience relapse (Kupfer, 1991; cited in NICE, 2010). Findings show that subsequent to the second and third episodes of depression, the risk of further relapse rises to 70% and 90%, respectively (Kupfer, 1991; cited in NICE, 2010). More recent findings appear to concur with past research, the cumulative probability of the recurrence of depression, in a US population, being 41% at 1 year after the first episode of depression, 59% at year 2, and 74% at 5 years, demonstrating that nearly three out of four cases will relapse within 5 years of their initial episode (Solomon et al., 2000).

Theories of depression

Outlined below are the theories pertinent to this study, which have formed the basis of much of the research background into depression. Included are biological and genetic, cognitive and behavioural.

Biological and genetic theories

Theories have been developed proposing that depressed individuals have a biological or genetic predisposition to low mood (Plante, 2011). As stated above, research has shown that an individual is two to three times more likely to have symptoms of depression if they have a relative with depression (Levinson, 2006; APA, 2000), which some interpret as suggesting a possible genetic link. Studies with twins have added support for the genetic influence of development of depression (Sullivan et al., 2000). However, these theories do not
fully account for all episodes of depression (e.g. if no other family member has experienced depression) but does indicate that for some genetics may be a vulnerability factor. For example, having a depressed mother has been found to be a risk factor for child psychopathology (Goodman, 2007). A criticism of this genetic explanation is this could be a result of learnt behaviour i.e. children nurtured by a depressed parent are more likely express symptoms of depression.

Cognitive and Behavioural Theories

Cognitive theories of depression were developed during the 1950s and 1960s. Early theorists proposed that depressed individuals have negatively biased thinking patterns about themselves and others (Beck et al., 1979). The cognitive model of depression identifies negative patterns of thinking, where "a systematic cognitive bias in information processing leads to selective attention for negative aspects of experiences, negative interpretations, and blocking of positive events and memories" (Beck, 2008, p.2). These negative biases, including selective abstraction, over generalisation and negative self-attributions, were seen to develop in reaction to an environmental context where they were useful for survival (Beck & Alford, 2009). Beck's (2008) theory suggested that the skewed information processing system not only led to the negative interpretation of reality but also to other symptoms of depression, such as loss of motivation, sadness, hopelessness and regressive behaviours like social withdrawal and inactivity. These symptoms are then also negatively evaluated, resulting in depressed individuals having a continuous negative feedback loop whereby interpretations and attentional biases are negatively skewed with the subjective and behavioural symptoms reinforcing each other (Beck, 2008). The evidence for behavioural theories has been explored and critiqued, with findings suggesting that there is little evidence to support the
causal theory for depression (Haaga et al., 1991). More recent analyses of the model propose that the cognitive aspect of depression is better seen as part of a depressive episode rather than the cause of it (Beck & Alford, 2009).

Behavioural theories were developed during the late 1970s into the 1980s, they suggested that disengaging from rewarding activities, such as social interactions, results in loss of pleasure and achievement from these experiences and, in turn, this reduces reward-seeking behaviour (Rippere, 1980). Lewinsohn et al. (1979) proposed a classic behavioural model of depression stipulating that depression could be the result of a stressor, which disrupts normal behaviour patterns and, in turn, causes a low rate of responses that are reliant on positive reinforcement. Thus if an individual is unable to change this negative balance of reinforcement a negative feedback loop can occur where family members inadvertently reinforce depressed behaviours, which effectively creates “learned helplessness” (Beck & Alford, 2009). Additionally, the negative balance can lead to a heightened state of self-awareness, which may lead to self-criticism and, in turn, behavioural withdrawal (Lewinsohn et al., 1985). The evidence base for this theory was initially derived from work with animals within the framework of learning theory (e.g. Skinner’s (1953) operant conditioning). Critically, by not extending this experimental work to humans the work was limited. These earlier theories were later developed (Zeiss et al., 1979) into a “reinforcement deprivation psychopathology” model which suggested “that negative affect and behavioural reductions seen in depression are produced by losses of, reductions in or chronically low levels of response-contingent positive reinforcement” (Manos et al., 2010, p. 548).
A critical approach to behavioural theory could argue that low mood was due to decreased social contact, thus taking a more relational or systemic perspective of depression. A recent critical review exploring the efficacy of the behavioural techniques, behavioural activation, concluded that despite the large volume of research on the treatment approach there has, to date, been limited research examining either the psychopathology model or the model of mechanism of change for the behavioural activation technique (Manos et al., 2010).

Changes in theorising about depression have seen the combining of cognitive and behavioural theories producing the cognitive-behavioural approach (Beck et al., 1979). Theorising about depression is continuing to develop with recent converging of the psychodynamic approach and the cognitive-behavioural approach (Luyten et al., 2005).

**Summary of theories of depression**

Whilst there are a number of theories that attempt to explain depression they do not appear to fully account for all factors that contribute to the associated difficulties. Critically they do not account fully for why people report having social difficulties, nor have conclusions about the mechanisms that contribute to people becoming depressed. The theories pertinent to this study show how we may have a genetic vulnerability to depression, how people's thinking may account for depression, how behaviour could contribute to depression, and how the dynamics of our relationships may contribute to depression. However, there are elements that appear unexplored, such as what are the possible mechanisms explaining why, or how, factors linked with relationships may contribute to depressive episodes.
Exploring the association between social functioning difficulties and deficits in theory of mind (ToM) would further the development of our theoretical understanding of depression. We have evidence indicating that depressed people have a lower level of social functioning (APA, 2000) and the reduction in social functioning may be explained by deficits in our ability to understand the minds of others. When suffering depression difficulty with understanding, or misinterpreting, the minds of others might explain, at least to some extent, the tendency to withdraw from relationships. Hence any research or theorising that explores the possible links between depression and ToM abilities could inform treatments for depression.

Theory of mind

Defining theory of mind

Theory of mind (ToM) as a concept has developed over the past 30 years with one of the fastest growing bodies of empirical evidence (Leudar et al., 2004). Origins of the ToM framework are rooted in philosophical cognitivism (Leudar & Costall, 2011). The term “Theory of Mind” was first used within psychology in the late 70s by Premack (1976) and Premack and Woodruff (1978) who defined it as the ability to attribute mental states to ourselves and others. It has been suggested that “the central tenet of the theory is that people act in light of their beliefs, in order to achieve their desires” (Astington et al., 2002, p.132). Within developmental psychology ToM has been used to explain aspects of our development of social cognition (Perner & Wimmer, 1985). It has also been applied to help understand difficulties such as autism and Asperger’s syndrome (Baron-Cohen et al., 1985; Baron-Cohen et al., 2001), schizophrenia (Bell et al., 2010; Brüne, 2003; Brüne, 2005; Frith & Concoran, 1996) and bipolar disorder (Kerr et al., 2003; Olley et al., 2005).
Theory of mind has been described as a powerful mental tool used when we draw together facts and infer others' mental states from those facts (Frith, 1992b). The basic premise of ToM is that understanding other people's motivations for their actions involves bridging a gap between observed 'behaviour' and hidden mental states by means of having a 'theory' linking the two (Leudar et al., 2004). The ToM framework supposes that we invoke 'mental states' to help 'predict' and 'explain' the behaviour of others (Leudar et al., 2004; Premack & Woodruff, 1978). These 'mental states' are theoretical entities, not outwardly observable and must be inferred from the behaviours of others and the context in which these behaviours take place (Leudar et al., 2004; Premack & Woodruff, 1978). Fonagy and Target (1997) suggest that the ability to represent behaviour, both our own and others, in terms of mental states (to have ToM abilities) is a key determinant of self-organisation which is acquired in the context of the child's early social relationships.

Theory of mind has been conceptualised as comprising at least two separate processes or components, 1) Decoding: using immediate information we determine (or decode) others' mental states, 2) Reasoning: we can reason about others' mental states to predict or explain others' behaviours (Baron-Cohen et al., 2001; Harkness et al., 2010; Sabbagh, 2004). The latter, mental state reasoning, requires us to reason in a deductive way that uses additional information or knowledge about the person and the context to infer others' mental states (Harkness et al., 2010).

A number of measures\textsuperscript{10} have been developed to test the ToM construct; they are based upon the decoding and reasoning aspects

\textsuperscript{10} See Appendix C – Table of Theory of Mind Measures.
of ToM abilities. Researchers have developed a number of different techniques or tools to explore an individual's ToM abilities (e.g. Baron-Cohen et al., 2001; Happé, 1994; Inoue et al., 2004; White et al., 2009). These tests were initially developed to explore ToM deficit for children with Autistic Spectrum Disorder (ASD) (e.g. Wimmer & Perner, 1983). These measures, initially developed for children, have often been adapted for adults with the limitation they may not be sensitive enough to explore subtle cognitive dysfunction.

One of the most commonly used ways of assessing ToM abilities uses measures that assess an individual's abilities to identify first and second order false beliefs (Inoue et al., 2004; Inoue et al., 2006). A false belief is an explicit representation of the mind of others being different to our own, so one can correctly identify that another person will believe something you know to be false and they will act according to their "false-belief" (Inoue et al., 2004; Inoue et al., 2006). An example of the measures used to assess ToM using a false-belief is the Sally-Ann task.

Second order false-belief tasks extend this concept by adding whether or not an individual can correctly attribute a false-belief of another about a belief (Artar, 2007). Second order false-beliefs can be situationally tested using vignettes where the first person surreptitiously sees the second person move an object and the first person now knows the correct location of where the object is hidden although it has been moved. The reader will use ToM abilities to correctly identify that the first person will know where an object has been moved to, and will also know that the second person will not know that first person has seen the move and will expect the first person to act upon their false-belief and look for the object in the

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11 See Appendix D – Sally-Ann task.
original hiding place. When the reader answers first and second order questions about the vignette it assesses higher level ToM abilities i.e. understanding the false-belief of another about a belief (Inoue et al., 2004; Inoue et al., 2006).

Other ToM measures have been designed to establish an individual's abilities to recognise the subtle social faux pas (Stone et al., 1998). A faux-pas is a comment or statement, said inadvertently causing an awkward situation and can have a negative impact on another (Pinsker & McFarland, 2010). For an individual to understand a faux-pas researchers hypothesise that both decoding and reasoning aspects of ToM must be employed to understand that the awkward comment has been said and caused another person to feel uncomfortable. Thus a test for faux-pas detection is a measure of an individual’s ability to identify when a situation involves this type of social situation and requires them to decode and reason the mental states of people in vignettes.

Contributions of theoretical perspectives to the ToM construct

Theoretical positions of Theory of Mind

Some argue that the concept of ToM is now presented within the literature as “fact” and incontrovertible, resulting in theoretical underpinning not being fully expressed or explored leading to limited theorising about the concept (Leuder & Costall, 2011). This study’s literature search produced limited literature covering the theoretical basis of ToM which appears to reflect this argument. Seemingly researchers have tended to focus on the acquisition of ToM abilities, i.e. when we can interpret the minds of other, rather than the mechanisms that underlie our ToM abilities. The most comprehensive and pertinent areas, that have contributed to our understanding of the ToM construct, that need to be considered for
the current study are in the developmental psychology, psychodynamic fields and cognitive psychology. The latter appears to be the more pertinent for the current study as it makes clear assertions about how negative interpretations of other peoples' minds (ToM abilities) can impact on our mood. Whilst the theories attempting to explain ToM are limited researchers have used empirical evidence to hypothesise about ToM acquisition and to contribute to theoretical perspectives of ToM.

Theory of Mind and Mentalisation

Before moving onto the differing theoretical positions of ToM it is worth considering the concept of mentalisation. Mentalisation has been described as enabling a child to "read" other people's minds which helps children to make sense of other people's actions and behaviour by making it predictable and meaningful (Fonagy et al. 2007). A number of researchers use the terms ToM and mentalisation interchangeably as they are seen, by some, to be synonymous (Fonagy & Target, 1997; Frith & Frith, 1999; Frith & Frith, 2006; Kanba et al., 2010). It can be argued that conceptually mentalisation has the advantage of drawing attention to the processes involved rather than the more reified notion of ToM (Murphy & Brown, 2007). Research uses the term mentalisation, drawing on psychodynamic ideas, as an active function aiding the forming of intimate relationships, including self-reflection and an interpersonal component, which enables individuals to self-organise and regulate affect (Fonagy et al. 2007). The two terms have come from different literature bases, namely psychodynamic and ASD, but are being used to describe the same aspect of human functioning. It could be argued that mentalisation has been applied more to adult functioning and has been extended to link in with emotion regulation. Whilst the current study is a partial replication of a ToM study and will focus on ToM literature it seems important, where relevant, to draw
upon the literature about mentalisation as these concepts are considered to be closely linked, if not the same.

**Developmental psychology**

The ToM framework has strong roots in developmental psychology (Sabbagh, 2004). A key attribute of ToM is the ability to understand the intentions of others and this has been used to help explain aspects of the development of social cognition (Perner & Wimmer, 1985). Here elaboration and growth of the child's ToM “are seen as the result of theory building as the child reviews and reorganises his or her existing theory in order to account for new “evidence” in the environment” (Ensink & Mayes, 2010, p.304). Empirical evidence has shown that across cultures people begin to develop ToM abilities during early childhood, from around 18-months-old (Frith & Frith, 2003; Sodian *et al.*, 2007; Wellman *et al.*, 2001). The results of a large meta-analysis indicate that ToM abilities develop universally across cultures (Liu *et al.* 2008).

Acquisition of ToM skills has attracted much research which has attempted to plot the development of the different aspects of the abilities. Wellman (1992) stipulated that between the ages of two and four children begin to develop ToM abilities and by the age of four children have a developed concept about minds that is accurate, organised and differentiated enough to be termed a theory. Research has shown that by 5-years-old 90% of typical children can understand first-order false-beliefs (Baron-Cohen *et al.*, 1985; Perner *et al.*, 1987). Between 6-7-years-old typical children are found to develop second-order representations or meta-representations (Baron-Choen *et al.*, 2000; Perner & Wimmer 1985). Liddle and Nettle's (2006) research demonstrated that older children can perform better than chance on third-order tasks and at chance level on fourth-order tasks suggesting that ToM abilities continue to
develop throughout childhood. They hypothesised that development is likely to continue into adolescence and adulthood. Prior to this last study higher order tasks for children had not been tested (Liddle & Nettle, 2006). Although more recent studies have started to explore ToM development beyond early childhood, the developmental constructs of ToM would benefit from further research with adolescent and adult populations to develop a comprehensive understanding of the acquisition of ToM skills. Developmental psychology sought to explain the acquisition of ToM abilities as a way of theorising about social interactions and how we understand others actions when we gain these skills.

**Psychodynamic perspective on theory of mind/mentalisation**

From the psychodynamic perspective a major question about human development is how we acquire ToM abilities in terms of how we come to understand the feelings and intentions of others (Ensink & Mayes, 2010). The last two decades has seen a growing body of evidence for an association between the quality of attachment relationship and ToM. An example of this was the theorising of reflective function (i.e. the developmental acquisition facilitating “reading other people’s minds”) between the parent and the child which has been reviewed and interpreted in the context of the current models of theory of mind development (Fonagy & Target, 1997). Part of this growing body of research has been exploring the biological evidence for ToM/mentalisation from a psychodynamic perspective (Frith & Frith, 1999; Frith & Frith, 2006).

**Cognitive psychology**

During the 1970's and 1980's new thinking in the cognitive field saw a renewed interest in children's social cognition with the application of Piaget's ideas on cognition to social phenomena (Chandler & Boyes, 1982; cited in Flavell, 1988). It has been argued that whilst
there appeared to have been an initial interest in ToM within the
cognitive psychology field it was not developed into a full theoretical
model for ToM abilities (Leudar & Costall, 2011). Whilst cognitive
psychology lacks a full theoretical model researchers and authors
attempted to explain the acquisition of ToM abilities by drawing on
theories of cognitive development, such as Piaget's theories
proposing that cognition was organised by underlying cognitive
structures (Wellman, 1992). Thus, theorising in cognitive psychology
draws upon cognitive development and the biological evidence for
ToM (outlined below) by hypothesizing that the frontal areas of the
brain indicated as being involved in ToM abilities are associated with
executive functioning (Rowe et al., 2001), thereby attempting to
explain the possible cognitive mechanisms involved in ToM. When
considering possible links with the cognitive model of depression it
would seem that having depressive cognitions containing errors or
distortions in the interpretations (or misinterpretations) of an
individual's experience could be associated with difficulties in ToM
abilities.

**Biological evidence of theory of mind**

Neuro-imaging research exploring the pathophysiology of mood
disorders indicated that the pre-frontal cortex may play an important
role in ToM skills (i.e. Bench et al. 1993; Bench et al., 1995;
Mayberg, 1997). Also the orbitofrontal cortex, superior temporal
gyrus, amygdale and pre-frontal cortex were all found to have been
activated when ToM abilities were used (for examples see Baron-
Cohen et al., 2000; Brothers, 1990; Brothers, 2002; Brüne, 2001;
Dunbar, 1998; Fletcher et al., 1995; Sabbagh, 2004). Thus, research
indicated that there a number of areas of the brain associated with
ToM abilities, in that that they are seen to be activated when
undertaking ToM tasks. The areas of the brain found to be activated
MRP: Do dysphoric students have an enhanced theory of mind?

When using ToM abilities have been collectively described as the "social brain" (Brothers, 1990; Dunbar, 1998; Inoue et al., 2004; Perner & Wimmer, 1985), which appears to blur the developmental theories perspective with the biological explanations of ToM. A critical perspective needs to be taken with biological evidence, for example Fletcher et al., (1995) undertook an investigation into ToM abilities which required the participants to recall aspects of vignettes without the vignette present. Arguably this would not just require the ToM ability areas of the brain to be activated but also memory parts of the brain. This suggests that these investigations may not be able to solely target the areas of the brain associated with ToM abilities.

Impact of a deficit in Theory of Mind (ToM)

As stated above the areas of the brain associated with ToM abilities have been called the "social brain" because they appear to facilitate skilful social interactions. Hence, theoretically, poor ToM might be expected to have a negative impact on our social skills. There is growing research evidence that appears to show deficits in ToM abilities for individuals experiencing mental health difficulties, such as psychosis (Frith, 1992a; Sprong et al., 2007), bipolar disorder (Bora et al., 2005) and depression (Lee et al., 2005).

Ermer et al. (2006) described how people have numerous social exchanges, which can be seen as a form of co-operation for mutual benefit, involving strategic social interaction and requiring ToM inferences about the context of other individuals' mental states especially their intentions, desires, and goals. Their description demonstrates the subtle nuances of our ToM abilities. Thus having ToM abilities enables individuals to understand others actions and behaviours and engage in successful social interactions (Ermer et al., 2006). It is worth noting that ToM abilities are not an all or nothing skill but rather a range of abilities or a continuum, therefore it
may be that our ToM abilities can vary over time, i.e. our performance may be better at times, at others worse or vice versa and may continue to fluctuate.

In everyday life having a deficit in ToM, put simply, means an individual will struggle with social interactions and social communication. They will tend to miss out on the subtle social messages that seem to require inference based upon the theoretical framework of the mental states of others. Such difficulties are clearly seen in individuals who have an Autistic Spectrum Disorder (ASD) diagnosis. Some seventy years ago links were first proposed between the profound developmental disorder, now termed ASD, and poor communication and difficulties with social interaction (Kanner, 1943; Asperger, 1944). These findings were developed and it is the case that individuals with an ASD diagnosis commonly have poor ToM abilities (Baron-Cohen et al., 1985; Tager-Flusberg, 2007).

Depression and Theory of Mind

Depressed people commonly report having difficulties with social interaction and ToM skills are associated with social interactions, so it is possible that when depressed our ToM abilities may be affected. Or it is possible that poor social interactions associated with depression could partly be explained by deficit in ToM abilities. It is, therefore, evident that research to explore depression using a ToM framework is required. Thus there may be a tendency to misread other people's minds or assume wrongly what people are thinking based upon limited information could be associated with difficulties in our ToM abilities making it possible to hypothesise that people with depression will show ToM deficits.
Previous Research on Depression and Theory of Mind

Given the possible association between depression and ToM abilities, there has to date been surprisingly limited research exploring depression using the ToM framework (Wolkenstein et al., 2011). The literature search for this study found eleven studies exploring mood disorders and ToM (or mentalisation) (Harkness et al., 2005; Harkness et al., 2010; Inoue et al. 2004; Inoue et al., 2006; Kanba et al., 2010; Kettle et al., 2008; Lee et al., 2005; Uekermann et al., 2008; Wang et al., 2008; Wolkenstein et al., 2011; Zobel et al., 2010). All but one (namely Harkness et al., 2005) of these studies compared clinical samples against non-clinical controls, or compared university students with a previous episode of depression with students with no history of depression, or followed up patients during remission for major depressive episodes. These studies are outlined below, with Harkness et al. (2005) being considered last as this current study seeks to replicate and extend it:

1. Inoue et al. (2004) conducted a study comparing 50 patients with remitted depression (who met the criteria for mood disorders of DSM-IV; 34 with unipolar depression and 16 with bipolar) with 50 matched healthy controls. All patients had been in remission for more than one month (17 had one episode of depression and 33 had recurrent episodes), all were on medication. IQ was estimated using the Wechsler Adult Intelligence Scale-Revised (WAIS-R; Wechsler, 1981) with all participants having an IQ of 79+. The ToM measure was produced by Martin Brune (2003), using cartoons from 19th century German caricaturist, Wilhelm Busch, and alongside four questions 1) first-order false belief, 2) second-order false belief, 3) tactical deception, 4) reality question. Four pictures were presented with a verbal description.
of each picture with participants being asked to put the four pictures in the correct order followed by the questions. Patients in symptomatic mood remission were found to have lower second-order false belief abilities than the matched controls. They concluded ToM impairment suggested a decline in skilful social relationships. These findings are limited by the method of only one unvalidated ToM measure, and not including a cognitive assessment to assess any ToM deficits in relation to possible cognitive difficulties. Additionally, they had relatively small numbers which may have resulted in low power for some of the calculations.

2. Lee et al. (2005) compared the ToM abilities of women, 52 with unipolar clinical depression against 30 non-depressed controls. All participants completed self-report depression (Hamilton Rating Scale for Depression; HRSD; Hamilton, 1960) and anxiety (Mood and Anxiety Symptoms Questionnaire; MASQ; Clark & Watson, 1991) measures. Participants' ToM abilities were measured by the Reading the Mind in the Eyes test (RME) (Baron-Cohen et al., 2001), the 36 pictures of the eye region for faces from halfway up the bridge of the nose to just above the eyebrows were presented on a laptop alongside the four descriptive adjectives from which to select the target response. They found that depressed women performed significantly worse on the RME task and this difference remained after controlling for anxiety. They also found that this difference was stronger for the affective symptoms of depression than the somatic. The limitations of this study were that it only had one ToM measure, their sample size was small, resulting in low power for some of the statistical analysis and only female participants meant it was a relatively homogeneous sample of depressed people.
3. Inoue et al. (2006) undertook an evaluation of the ToM abilities of 50 patients (males ($n = 28$) and females ($n = 22$)), by following them for one year and observing their outcome, during remission from a major depressive episode (meeting the DSM-IV criteria; APA, 2000). All participants had an IQ over 80. ToM abilities were measured in the same way as Inoue et al. (2004). After the year patients who had been found to have a ToM deficit on second-order false beliefs at the start of the observation period were found to be significantly more likely to relapse than the patients who did not have this deficit. This was a follow up study to Inoue et al. (2004) with similar limitations, namely one unvalidated ToM measure, relatively small numbers with no assessment of time taken, anxiety or IQ.

4. Kettle et al. (2008) compared ToM abilities between outpatients with a first-episode of schizophrenia ($n = 13$), with three control groups 1) non-psychotic major depressed outpatients ($n = 14$), 2) general community ($n = 16$), 3) undergraduate university students ($n = 27$). Participants' ToM abilities were measured by the RME (described above). Participants were also given the structural clinical interview for DSM-IV axis 1 disorders (First et al., 2001), the brief psychiatric rating scale (BPRS) the expanded version (Lukoff et al., 1986), the scale for the assessment of negative symptoms (SANS) (Andreasen, 1982) and the centre for epidemiological studies depression scale (CESD) (Radloff, 1977). They found that the schizophrenic group were significantly impaired on the ToM tasks when compared with the general community and students, but this was not seen with the depressed group. However, the depressed group were unexpectedly not significantly impaired compared with the community group but were when compared with the student group. The student group exhibited superior ToM abilities.
relative to the other three groups. This study had a limited focus on first episode schizophrenia and control groups, also they only used one ToM measure, had a small sample size with no processing speed, anxiety or IQ assessment.

5. Uekermann et al. (2008) explored executive function, mentalising and humour with 27 in-patients with a diagnosis of major depression against 27 healthy controls (similar in age, gender, and IQ). Humour and ToM abilities were measured by three computerised tasks where stories were presented with four possible endings, with a following set of questions (made up of four humour questions rating the four possible endings to the story, two factual questions, three ToM/mentalising questions). Uekermann et al. (2008) found that the depressed patients showed deficits in humour processing (both affective and cognitive) and these related to their performance for ToM and executive functioning. They concluded that their findings indicated that depressed individuals have deficits in social cognition. Whilst they controlled for IQ they did not explore if it was a potential covariate. The study was limited by only using one ToM measure and they had a relatively small sample size which could have resulted in low power for some calculations.

6. Wang et al. (2008) investigated ToM abilities for 33 depressed non-psychotic inpatients, 23 psychotic inpatients and 53 healthy controls. They used the RME (previously described) and Faux pas task to assess ToM skills, the Beck Depression Inventory (BDI-II; Beck et al., 1996) to measure the severity of depression, the 18-item Brief Psychiatric Rating Scale (BPRS) and a number of cognitive tests (Verbal Fluency (VFT), Digit Span Test (DST) and the Wechsler Adult Intelligence Scale-Revised Chinese Version (WAIS-RC) (Gong, 1992). Wang et al., (2008) findings
showed that both the depressed non-psychotic and the psychotic inpatients performed significantly worse than the healthy controls for the components requiring ToM social-cognitive and social-perception, as well as on the VFT. They concluded by suggesting that there may be a similar neurobiological substrate and mechanisms that contribute to schizophrenia and major depression. A strength of this study was the use of two ToM measures, however, it was limited by the focus on first episode depression and the use of limited non-ToM cognitive tasks.

7. Kanba et al. (2010) explored the ToM abilities over a year period between a group of 50 patients following a major depressive episode (either meeting the DSM-IV criteria for major depressive disorder \(n=34\) or bipolar \(n=16\); APA, 1994) and 50 matched healthy controls. All participants had an IQ over 80. ToM abilities were measured in the same way as Inoue et al. (2004). Kanba et al., (2010) found that for the first-order false belief question there was no significant difference between the two groups, however, for the second-order false belief question individuals in the depressed group performed worse at a statistically significant level. The findings indicate that individuals in remission from an episode of major depression show a deficit in second-order beliefs. The method for this study was based upon Inoue et al. (2004) and has the same limitations as stated above. This study also suffered from relatively small sample size which, as stated above, can affect power.

8. Zobel et al. (2010) sought to explore ToM performance of chronically depressed patients \(n=30\) compared with healthy matched controls \(n=30\) using two cartoon picture tests (Brüne’s cartoon picture story test and Werden and Eikann (WE.EL-test)) to measure ToM. They also undertook assessments of cognitive
skills, due to the cognitive deficits associated with depression, using the digit span tests from the Wechsler Memory Scale-Revised (WMS-R; Wechsler et al., 2006) to clarify the relation of ToM to other cognitive abilities. The study’s results were that the chronically depressed patients were markedly impaired in all ToM and cognitive tasks when compared with the healthy controls. They concluded that chronically depressed patients show significant deficits in “reading” social interactions and this could be related to deficits in general cognitive skills. A strength of this study was the use of two ToM measures but it is limited by a relatively small sample size.

9. Wolkenstein et al. (2011) investigated ToM abilities in acutely depressed patients (n = 24) (who were assessed using the SCID-I and all met the DSM-IV criteria for major depressive order; APA, 1994) compared with matched healthy controls (n = 20). ToM skills were assessed using the RME and Movie for the Assessment of Social Cognition (MASC)\(^{13}\). Cognitive abilities were measured by a battery of tests. Their findings were that patients did not show impaired decoding skills on the RME compared with the controls but did display significantly poorer performance for reasoning as measured by integrating the contextual information about other people in the MASC. A strength of this study was that they used two ToM measures but it is limited by a relatively small sample size.

10. Harkness et al. (2010) explored the ToM abilities of undergraduate university students (41 with a previous episode of depression and 52 with no previous depression) following a mood induction task. Allocation was based upon a yes/no

\(^{13}\) A detailed outline of the MASC can be found in Appendix C.
response to "Have you ever been diagnosed with depression?"
The procedure was: 1) a paper-and-pencil Differential Emotional Scale (DES; adapted by Cacioppo et al., 1988), 2) either the happy or sad mood induction computerised task, 3) a ten minute distracter computerised task, 4) post-mood-induction DES, 5) the RME and Animals task, 6) a final DES, 7) BDI-II and the MASQ, 8) using the SCID-I participants were screened to ensure they did not meet the subthreshold for a current episode of major depression. Harkness et al., (2010) found that previously depressed participants performed significantly better on the ToM task than the never depressed counterparts. Additionally, they found all participants performed worse on the ToM task following the happy mood induction, suggesting that a happy mood meant that social information is less accurately processed, which they proposed was a more adaptive approach to social situations. They concluded that their findings indicated that enhanced ToM abilities may be a specific feature of depression in remission. The study was limited by only using one ToM measure with a relatively small sample size which could have resulted in low power for some calculations.

11. Harkness et al. (2005) undertook a study exploring ToM and dysphoria with college students ($n = 124^{14}$). They used a ToM framework to aid understanding of the social and cognitive difficulties that individuals with mild to moderate depression (dysphoria) experience. Within the study two mood measures were used (BDI-II and the MASQ) with the RME to assess ToM skills. They undertook a number of different statistical analyses examining the accuracy on the RME, time taken on the RME, and a breakdown of the RME items by valence (positive, neutral

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$^{14}$ They did not report the $n$ for the groups they divided the participants into.
and negative). They found that dysphoric students performed significantly more accurately on the ToM task than the non-dysphoric counterparts. Harkness et al. (2005) concluded that there was an increased sensitivity to the subtle social cues to make ToM judgements. They theorised that the enhanced accuracy on the RME may be due to increased time taken on it, but their investigation concluded that the time taken did not account for the increased accuracy on the RME. The exploration of the difference in accuracy by valence (emotional) categories on the RME showed that dysphoric students were more accurate for positive and neutral valence stimuli, but there was no significant difference for negative valence stimuli. Their results were contrary to previous findings and theories as their research found enhanced ToM abilities. Harkness et al. (2005) theorised that individuals who are mildly depressed might be hypersensitive to others' emotional states which increases an individual's opportunity to interpret fleeting emotional states, which they suggested meant dysphoric individuals had more accurate or enhanced interpretations of others' emotional states. The study was limited by only using one ToM measure with a relatively small sample size, for the first part of the study, which could have resulted in low power for some calculations.

Critical evaluation on depression and theory of mind research

Critical evaluation of the above studies highlights the relatively small numbers for eight out of the eleven studies which could have resulted in low power for some of the calculations. However a key limitation of the research literature on ToM and dysphoria is that seven of the eleven studies only used one ToM measure, and many of these were unvalidated, to assess ToM abilities.
Summary of evidence linking ToM and depression

Seven of the studies indicated that individuals, during an episode of major depression or following a prior episode of depression, perform worse than healthy counterparts on ToM tasks. However, two studies indicated that dysphoric individuals have enhanced ToM skills (Harkness et al., 2005; Harkness et al., 2010), which appears to contradict the findings from the other seven studies. One study showed mixed findings with depressed participants performing equally well for ToM abilities as the matched controls, but worse when compared with the student group (Kettle et al., 2008). The final study also showed mixed findings for ToM abilities, namely that depressed individuals performed equally well for decoding skills whilst being significantly worse at reasoning skills than the controls (Wolkenstein et al., 2011). The contradictory findings might be explained by researchers employing different ToM measures across the studies, a reliance on a very limited number of ToM measures and, in some cases, the use of measures of ToM that were unvalidated. This study seeks to address these limitations by partially replicating the design used by Harkness et al. (2005) whilst employing a range of validated measures of ToM or reduced versions of ToM measures that have been validated.

Given limited research exploring the possible links with depression and ToM, our understanding of potential associations is at a relatively early stage, there is clearly a need to further explore the possible relationship and links. Also, the need for further research in this area is highlighted by the interestingly contradictory results from this small pool of research, with two of the eleven studies showing enhanced ToM abilities rather than the deficits that were seen in the other nine studies.
Identifying gaps

Given the theories about ToM consisting of two aspects, decoding and reasoning, there is very limited research into both parts. This limitation is highlighted by a critique of the RME test, the only ToM measure used by Harkness et al. (2005), as not having the contextual factors that people employ when using ToM reasoning abilities (Johnston et al., 2008). This also suggests the need to undertake further research with more measures to assess ToM skills, particularly the reasoning part.

Harkness et al. (2005) found that dysphoric students were slower to respond than their non-dysphoric counterparts. This is not an unexpected result as impaired response times are seen, for voluntary responses, with higher levels of depression (Azorin et al., 1995). However, the longer time taken did not correspond with greater accuracy which Harkness et al. (2005) had hypothesised. This research is aimed at expanding our understanding of the possible association between more time being taken by depressed individuals and possible enhanced accuracy by considering time taken on the RME as a potential confounding variable.

An apparent, additional, gap in the current literature is an exploration of possible associations between Intelligence Quotient (IQ) and depression and ToM. The limited research conducted on IQ and depression produced mixed findings. For example lower IQ scores were found to be associated with a risk of developing severe depression (Zammit et al., 2004). However, other research produced a different picture for childhood into adolescence, where 8-11 year-olds IQ was found to be inversely associated with depressive symptoms, but by 13/14 years-old the association changed with higher IQ scores being associated with a higher risk of depressive symptoms being present (Glaser et al., 2011). The latter study also
found that, at 17 years, gender differences emerged; for females the risk effect of higher IQ scores for depressive symptoms declined, whilst for males it persisted (Glaser et al., 2011). Whilst there is an unclear picture about the association of IQ and depression, some research found it was a confounding variable for depression (Zammit et al., 2004). Harkness et al. (2005) did not include a measure of general intelligence, the lack of any research addressing any possible association between ToM, depression and IQ requires addressing. Given the gap in the current literature with no past research studies exploring associations between IQ, depression and ToM abilities, this study aimed to address this gap. Consequently, an IQ measure was added in this study.

**Rationale for the current study**

The aim of this study was to replicate and extend the Harkness et al. (2005) study. A key limitation with their study was the reliance upon only one ToM measure, the RME (Baron-Cohen et al., 2001). The RME measure has been critiqued by Johnston et al. (2008) as not differentiating between posed and genuine emotion, also that individuals can accurately select the target word from the foil words without the picture stimuli being present. Johnston et al. (2008) proposed that we need to have complementary contextual factors for mental state reasoning. Hence, the proposed study extended the Harkness et al. (2005) study by using a range of ToM measures. In the second part of the study an anxiety measure was added to address the possibility that there could be a relationship between anxiety and enhanced accuracy on the RME task. This will be replicated in this study. Hence the current study aimed at partially

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15 Johnston et al. (2008) presented their participants with 37 sets of four words, without the eye stimuli, and they found that participants identified the correct word over fifty percent of the time highlighting that the eyes may not be required for participants to correctly identify the mental state of others.
replicating and extending the prior study by improving the measurement of ToM, by adding two additional measures (Strange Stories and Faux-Pas Test) and an IQ measure.

**Objective**

- Recent theories about depression have implicated a role for Theory of Mind. Whilst some theorists have implicated impoverished ToM as playing a role in depression (i.e. misinterpreting other peoples' minds) other theorists have suggested that depression may be associated with enhanced ToM. Empirical findings are mixed, and the evidence for both theories found in the literature is mixed. The objective of the current study was to investigate the association between dysphoria and theory of mind (ToM). It adds to the previous literature by controlling for possible confounding variables that may explain the inconsistent findings in the empirical literature, namely processing speed, anxiety and verbal intelligence.

**Hypotheses**

These aims stated above resulted in the following hypotheses:

**Hypothesis 1:** University students who are mildly depressed will perform better on ToM tasks than non-depressed counterparts, and this would remain the same when controlling for anxiety, time taken on the RME (speed) and IQ.

**Hypothesis 2:** Dysphoric students will be more accurate on Positive and Neutral valence stimuli but just as accurate as non-dysphoric counterparts for Negative valence stimuli, and this would remain the same when controlling for anxiety, time taken on the RME (speed) and IQ.
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Method
Design
A quantitative cross sectional questionnaire-based correlational design was used.

Recruitment
Recruitment of undergraduate students currently studying at a university in the south east of England was undertaken via e-mail invitation\textsuperscript{16}. Recruitment used e-mails targeting only undergraduates within one university faculty. A prize draw for a £25 Amazon voucher was offered for participation in the research with the winner being selected by an external adjudicator.

Participants
A total of 211 participants started the survey, from a pool of 4841 (4.4% response rate) on the automated e-mail list of undergraduate students affiliated to the targeted faculty, with 78 (37% of 211) dropping out. Of these over 50 participants (24% of 211) dropped out after either one or the other of the mood measures, leaving 133 (63% of 211; 2.7% of the total e-mailed) undergraduate students completing the survey.

With one outlier removed all data analysis was based upon 132 (63% of 211) participants. The age range was from 18 to 58 years of age, giving a span of 40 years, with a mean age 21.28, standard deviation 4.87, and mode 20.50 years. There were 109 (82% of 132) female participants with 23 (18%) male participants. All of the participants had been educated to A-level standard. The majority of participants were White British 102 (77.3%). The ethnic breakdown of the

\textsuperscript{16} See Appendix N – E-mail invitation.
remainder of the participants was; 20 White Other (15.2%), 2 Chinese (1.5%), 2 White and Asian (1.5%), 1 White and Black Caribbean (0.75%), 1 African (0.75%), 1 Irish (0.75%), 1 Pakistani (0.75%), 1 Bangladeshi (0.75%), and 1 not stated (0.75%).

Sample size and power

An a priori G*power calculation was conducted to estimate the sample size required, which indicated that the current study required 128 participants to reach sufficient power (Erdfelder et al., 1996). The calculation was based upon selecting t-tests, the difference between two independent groups using a p value of .05, power of 0.80, allocation ratio assumed to be 1 with a medium effect size. This a priori calculation was based upon the data, statistical tests and effect size that Harkness et al. (2005) found. The final sample size of 132 was adequate to meet the sample size indicated by the a priori power calculation.

Allocation of participants

Participants were assigned to one of two groups, either dysphoric or non-dysphoric based upon their scores on the Patient Health Questionnaire depression module (PHQ-9, Dum et al., 2008). Groups were defined by the cut-off scores for mild depression on the PHQ-9 (score of 10, Kroenke et al., 2001; NICE, 2010; Spek et al., 2010), participants scoring 10 or more (27 people within the group; 20%) were assigned to the dysphoric group and those scoring 9 or less (105 people in the group; 80%), the non-dysphoric group. Please see below for details of the psychometric properties of the PHQ-9.
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**Measures**

**Demographics**

Demographics were measured using a non-standard set of questions developed by the researcher to obtain information about the sample. The questions enquired about gender, age, ethnicity and education level attained.

**Dysphoria**

The original Patient Health Questionnaire (PHQ) is a diagnostic instrument for common mental disorders which is self-administered (Kroenke et al., 2001; Dum et al., 2008; Kroenke et al., 2010). The PHQ-9 is the depression module from the PRIME-MD and scores each of the 9 DSM-IV criteria: 0 (not at all) to 3 (nearly every day) (Kroenke et al., 2001). The 9 questions give a range of possible scores from a minimum of zero to a maximum of 27.

Harkness et al. (2005) used the BDI-II (Beck et al, 1996). However, within this study it was not possible to use the BDI-II for two reasons, namely permission was not granted to adapt the measure into a computerised version and the measure would have only been granted a licence with a fee per participant, which, given the numbers required, would have been prohibitively expensive. These two factors combined meant that the BDI-II was not used for the current project, with the PHQ-9 being deemed a suitable replacement. A comparative study of the PHQ-9 and the BDI-II found both tools to be good psychometric measures of depression, with reliabilities of

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17 All of these measures were used with either the permission of the authors or, in the case of the Mill Hill Vocabulary Scale by purchasing a licence and by paying for each usage of the measure. See Appendix G – Permissions to use measures and licence.

18 See Appendix O – Screen shots of the survey.

19 See Appendix H – PHQ-9 stimuli and scoring.
Cronbach's α, of 0.91 for the PHQ-9 and 0.95 for the BDI-II, showing that both measures have good internal consistency (Dum et al., 2008). The PHQ-9 has been shown to have good concurrent validity with the BDI-II (r = 0.67, p < 0.001, Adewuya et al., 2006) (r = 0.84, p < .001, Dum et al., 2008), indicating high levels of association between the two depression inventories.

Additionally, research on the PHQ-9 in health care settings found evidence for the validity of it being a brief measure of depression (Kroenke et al., 2001). Kroenke et al. (2001) stipulated that the PHQ-9 is a valid (using ≥10 as the cutpoint (criterion validity: sensitivity 0.88 and specificity 0.88)) and reliable (internal reliability Cronbach α 0.86 – 0.89, test-retest reliability 0.84, self-rated vs. interviewer 0.84) measure of depression. In a systematic review, of four studies and two key papers, undertaken by Kroenke et al. (2010) more recent studies were cited that also found the PHQ-9 to have good criterion validity. Gilbody et al. (2007) reported, following a diagnostic meta-analysis of 17 validation studies, pooled sensitivity 0.92 and specificity 0.80. Wittkampf et al. (2007) reported, from a meta-analysis of 12 studies (reporting sensitivity and specificity), sensitivity 0.77 and specificity 0.94.

Both the PHQ-9 and BDI-II ask about symptoms of depression present within the past two weeks and are linked with the DSM-IV criteria for depression (Spitzer et al., 1994; Dozois et al., 1998; Kroenke et al., 2001). Harkness et al. (2005) used a cut off of ≤12 to place participants in the non-dysphoric group and ≥13 to place participants in the dysphoric group20. According to Kroenke et al. (2001) a cut-off of 10 on the PHQ-9 correctly identifies 88% of people

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20 The cutoff used by Harkness et al. (2005) was a slightly lower cut off than is typically used in clinical practice and it is unclear as to why this was the case.
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meeting DSM-IV diagnostic criteria for major depression and also correctly identifies 88% who do not meet the diagnostic criteria.

In summary, for the purpose of this study the participants were grouped using their PHQ-9 score; ≤9 in the non-dysphoric group and ≥10 in the dysphoric group, this cut off was considered comparable to the cut off of 13 or more on the BDI-II and, therefore, comparable with the cut off used by Harkness et al. (2005).

Anxiety

The Mood and Anxiety Symptoms Questionnaire-D30 (MASQ-D30) is a shortened version of the MASQ (Clark & Watson, 1991). Harkness et al. (2005) used it to measure anxiety and it was used for the same purpose in this study. The original MASQ is a 90-item self-report questionnaire designed to measure a tripartite model of depression, anxiety and general distress (Clark & Watson, 1991; Wardenaar et al., 2010). The tripartite model is based on the assumption that mood can be dissected into three components: negative affect (NA), positive affect (PA) and somatic arousal (SA) (Clark & Watson, 1991). Factor analysis has demonstrated that the reduced version of the MASQ (the MASQ-D30) fits with this underlying tripartite model (Wardenaar et al., 2010).

Research has shown the MASQ-D30 subscales (General Distress (GD), Anhedonic Depression (AD) and Anxious Arousal (AA) which are the same subscales as the original MASQ) have acceptable internal consistency, with Cronbach's α scores ranging from 0.85 to 0.95 and convergent validity comparable with the full MASQ, with each of the subscales correlating highly between the MASQ-D30 and the full MASQ (Wardenaar et al., 2010). The subscale intercorrelations showed that the AA has a low correlation with the AD (r = 0.30) with a slightly higher correlation with GD (r = 0.57), these
correlations support the theoretical assumption that the AA subscale measures a distinct construct and can be used as an independent scale (Wardenaar, 2011, personal communication). In line with Harkness et al. (2005) in this study the AA subscale will be used to measure symptoms of anxiety, namely somatic hyperarousal (Watson et al., 1995). A participant’s score for the AA subscale was computed by summing the ten items that made up the subscale. Each item had a score from 1 to 5, giving a minimum score of 10 and a maximum score of 50.

**Intelligence**

The Mill Hill Vocabulary Scale (MH) (Raven et al., 1998) is a quick measure of crystallised ability (Kline, 1995). There are two sets of 34 target words with a multiple choice of six words for the participant to select a synonym to match the target word. The totals of the two sets of words are converted using Peck’s (1970) conversion tables from a raw score to a percentile score and subsequently to an Intelligence Quotient (IQ).

When identifying an appropriate IQ measure for this current study the MH was selected for two main reasons: ease of administration via the internet and the psychometric properties correlate well with other IQ measures (Colman, 1990; McLeod & Rubin, 1962). The Wechsler Adult Intelligence Scale (WAIS) is considered a gold standard for measuring adult intelligence (Silva, 2008). However, for the purpose of this study it would have required face-to-face administration and would have taken over an hour for each participant to be given one of the six measures, which was prohibitive. The MH was originally

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21 Whilst only the AA subscale was used in both studies (Harkness et al. (2005) and the current study) the whole measure was given in line with the design of the measure. To not give the measure as a whole could affect the psychometric properties.

22 See Appendix I – Scoring of the MASQ D-30.
published, in 1944, as a standalone part of the Raven’s Vocabulary Scales, which was a companion for Raven’s Progressive Matrices, the latter being a pen and paper test that would not easily translate to a computerised version thus making it unsuitable for use in this study (Colman, 1990). Research has shown that the relationship between the Full Scale WAIS and Raven Progressive Matrices percentile scores is sound by comparing an inspection of the scattergram relating scores on the two measures. Research, based on an earlier version of WAIS, using regression indicated that the Raven Matrices scores are able to predict the WAIS Full Scale within ± 10 IQ points 73% of the time (McLeod & Rubin, 1962). The comparison with WAIS and Raven’s Progressive Matrices provides some evidence for the validity of the MH, as a correlation of 0.75 has been found between MH and Raven’s Progressive Matrices (Colman, 1990).

Theory of Mind (ToM)

A comprehensive review of ToM measures indicated there were limited appropriate ones meeting the selection criteria in order to make assessment of ToM abilities more robust. The criteria for selecting the additional measures were: suitability for typical adult population, being adaptable into a computerised format, time consideration (with six measures being completed time taken to complete the survey was pertinent). There was a lack of published reviews of ToM measures thus a thorough literature review enabled some twenty ToM measures to be considered and inspected. Two of these measures were deemed to meet the criteria needed for this study: the Strange Stories Test (SS) and the Faux-Pas Test (FPT)^23. The original Harkness et al. (2005) study used the Reading the Mind in the Eyes Test (RME) and this study aimed to undertake a more

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23 See Appendix C – Table of ToM measures.
robust assessment of ToM skills by using three measures, RME, SS and FPT:

1) Reading the Mind in the Eyes\textsuperscript{24}. "Reading the mind in the eyes" (RME) test consists of 36 black and white photographs of the eye region of faces taken from magazine photos (Baron-Cohen et al., 2001). Each pair of eyes was standardised to the same size and edited so that the eye region is visible from just above the eyebrow down to midway along the bridge of the nose (Baron-Cohen et al., 2001). Each pair of eyes is presented to the participant who is required to choose between four words (the target and three distracter answers). The correct scores for each participant are added up to give the total score for the RME. The total score is then expressed as percentage correct for each participant.

On the RME measure the chance of guessing correctly is one in four per trial. A Binomial Test indicated that an individual would need to score 13 or above to be performing significantly above chance (Baron-Cohen et al., 2001). In the study that Baron-Cohen et al. (2001) developed with the 36-item measure they concluded that this was a more sensitive measure of ToM than the previous 25-item measure, and was able to detect meaningful individual differences. Additionally, they stipulated that within otherwise normally intelligent adults this measure was useful in identifying subtle impairments in social intelligence (Baron-Cohen et al., 2001). The RME's general internal

\textsuperscript{24} The original Eyes Task was designed to be an advanced and "pure" ToM test. The validity of the measure tapping into the ToM construct was assessed by exploring the correlation of participants performance on Happé strange stories (SS) (Baron-Cohen et al., 1997). The pattern was found to mirror the performance on the SS, thus demonstrating construct validity of the original Eyes Task (Baron-Cohen et al., 1997).
consistency level was found to be less than optimum with Cronbach’s $\alpha$ for males and females found to be in the low 0.60s only (RME reliability figures were not reported elsewhere; Voracek & Dressler, 2006). These RME critiques indicate the need to use the additional ToM measures within this study.

Harkness et al. (2005) undertook statistical analysis on the accuracy of all the RME items, they also classified the RME by three valence (or emotional) categories (positive (8), neutral (16), negative (12)) undertaking statistical accuracy analysis on valence. They considered a speed/accuracy trade off, i.e. the longer an individual took the more accurate they thought they would be. For the latter analysis they measured the time taken digitally, in milliseconds, to produce responses on the RME measure. They also included an anxiety measure to explore if anxiety contributed to any differences in ToM abilities. The current study is aimed at replicating these aspects of their analysis.

2) Strange Stories. The Strange Stories (SS)$^{25}$ test is based on the concept of a false-belief (an explanation of false-belief was outlined in the introduction) and within each story an individual says something they do not literally mean. Happé (1994) developed the original set of 24 stories that contained 12 story types (namely; Lie, White Lie, Joke, Pretend, Misunderstanding, Figure of Speech, Persuade, Appearance/Reality, Sarcasm, Forget, Double Bluff, and Contrary Emotions), with two examples of each type.

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$^{25}$ See Appendix K – Strange stories stimuli and scoring.
The eight mental state stories used in this current study have been identified as the more complex and demanding stories which are therefore considered the most suitable for use with neuro-typical adults (Fletcher et al., 1995; White et al., 2009). These stories included: misunderstanding, double bluff, persuasion and white lies. Stories were scored by the ‘correct answer score’, 2 points for a fully correct answer which includes identification of intention of the person in the story, 1 point for a partially correct answer where there is part knowledge demonstrated but the target intention is missing and 0 points for an incorrect justification (Happé, 1994; White et al., 2009). Following scoring of the answers the sum of the scores is calculated for the eight SS to give a total score with this total score being expressed as percentage correct for each participant. In line with the White et al. (2009) study, for the current study 20% of the answers, for the SS, were randomly selected to be scored by an appropriately selected inter-rater, this blind reliability check had degrees of concordance of 89%. The SS were found to highly correlate with a ToM battery of tests in an ASD group ($r = 0.42, p < 0.001$, White et al., 2009). This correlation between the SS and the mental state stories was argued as providing a construct validity check that both instruments are tapping into the same underlying cognitive ability (White et al., 2009).

An example of a story selected for the revised version with the scoring criteria is:

"Simon is a big liar. Simon's brother Jim knows this, he knows that Simon never tells the truth! Now yesterday Simon stole Jim's ping-pong paddle, and Jim knows that Simon has hidden it somewhere, though he can't find it."
He's very cross. So he finds Simon and he says, "Where is my ping-pong paddle? You must have hidden it either in the cupboard of under your bed?" Simon tells him the paddle is under his bed.

Q: Why will Jim look in the cupboard for the paddle?

Scoring key:

2 points – reference to Jim knowing Simon lies
1 point – reference to fact (that's where it really is, Simon's a big liar) or Simon hiding it without reference to implications of lying
0 points – reference to general nonspecific information (because he looked everywhere else).

3) Faux-Pas test (FPT). A faux-pas is a comment or statement spoken inadvertently, is awkward and can impact negatively on the listener (Pinsker & McFarland, 2010). Thus the FPT is a measure of an individual’s ability to identify when a faux pas has been made. The FPT has been found to have a significant correlation with the SS with a medium effect size ($r = 0.36$, $p < 0.001$) suggesting that the two tests measure similar underlying cognitive phenomenon (Spek et al., 2010). Combined with the findings of White et al. (2009) this offers a validity check that taps into the same construct measured by the ToM battery. For the purposes of this study the reduced FPT measure, based upon the full measure, developed by Goh (2004) was used. Validity and reliability of this reduced measure could not be found in the extensive literature search. Goh (2004) used ten of the twenty original FPT stories, 6 with a faux-pas and 4 with minor conflict but no faux pas\footnote{See Appendix L – Faux-Pas Test stimuli and scoring instructions.}. An example of the stories used is:

\begin{table}
\caption{Example Faux-Pas Test Story}
\begin{tabular}{|l|}
\hline
Jim (Faux-Pas) says, "I found your tennis racket in the garage."
\hline
\end{tabular}
\end{table}
"Jeanette bought her friend, Anne, a crystal bowl for a wedding gift. Anne had a big wedding and there were a lot of presents to keep track of. About a year later, Jeanette was over one night at Anne's for dinner. Jeanette dropped a wine bottle by accident on the crystal bowl and the bowl shattered. "I'm really sorry. I've broken the bowl," said Jeanette. "Don't worry," said Anne. "I never liked it anyway. Someone gave it to me for my wedding."

1) Did anyone say something they shouldn't have said or something awkward? YES/NO
2) Who said something they shouldn't have said or something awkward?
3) Why shouldn't he/she have said it or why was it awkward?
4) Why do you think he/she said it?
5) Did Anne remember that Jeannette had given her the bowl?
6) How do you think Jeanette felt?
7) In the story, what did Jeanette give Anne for her wedding?
8) How did the bowl get broken?

Each of the ten stories was presented to the participants who were asked seven questions beginning with a question asking whether someone inadvertently said something awkward according to general social etiquette, which was the detection of a faux pas (Pinsker, 2011). If the participant affirmed that a faux pas had been made (i.e. ToM story condition where a faux pas has been made), they were then asked by whom, why it was awkward (epistemic attribution), why it was said, and a belief question (did they know/remember that?) (Pinsker, 2011). If the participant responded that no faux pas was made, they were then asked the
same number of questions as in the ToM condition, but in relation to the general content of the story (Pinsker, 2011). For all of the stories two control questions were asked to assess memory and comprehension (correct responses were required for the case to be included in the analysis for this study, all of the participants within the current study responded correctly). For each question, a score of 1 was assigned for a correct answer, and a score of zero for an incorrect answer. For each participant a ToM score was allocated based on the first five questions of the faux pas stories, in addition to questions 1, 4, and 5 of the non-faux pas stories (Pinsker, 2011). When any of the five ToM questions relating to a faux pas story was incorrect, a score of zero was allocated for all five (Pinsker, 2011). The total maximum ToM score attainable was 30 for the faux pas stories and 12 for the non-faux pas stories giving a total ToM score of 42. The final score for each participant was expressed as the percentage correct from the maximum attainable score.

Procedure

Participants were directed to the study website via a link sent by email. Upon clicking the link participants were initially presented with a brief description of the study, in the form of a participant's information screen, and they were asked to confirm their consent to take part in the survey. Only then were participants presented with the measures. Once consent was given the participants were asked to supply their demographic information. Following this each participant was asked to complete the two mood measures; the

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27 This site was compiled by a university technician using 'SSIWeb 7' [version 7.0.22] by Sawtooth Software Inc., which was run under 'Active Perl' on an IIS server.
28 Appendix N - Invitation e-mail.
29 Appendix F - PDFs of screen shots of the website.
30 See Appendices H to M - for copies of the measures.
Patient Health Questionnaire (PHQ-9) (Dum et al., 2008) and Anxiety Symptoms Questionnaire (shortened version; MASQ-D30) (Wardenaar et al., 2010). The participants were then asked to complete the three ToM measures; Reading the Mind in the Eyes test (RME) (Baron-Cohen et al., 2001), Strange Stories (eight item version) (Spek et al., 2010) and Faux-Pas test (reduced ten item measure) (Goh, 2004; Pinsker & McFarland, 2010; Pinsker, 2011). Finally participants were asked to complete the Mill Hill, IQ measure (Raven et al., 1998).

In order to explore the possibility of a speed/accuracy trade off participants were instructed on the RME task to respond as quickly and as accurately as possible. One set of eyes was presented per page and the time taken on each page in milliseconds (ms) digitally recorded to explore any possible differences in the participants’ mean response times. For the SS and FPT the stories were left on the screen, so that the individual did not have to remember it, with the questions being presented to the participants appearing sequentially at the bottom of the screen.

After all the measures were completed the participants were offered to opt into the prize draw for the Amazon voucher, and asked to fill out their address to be sent the voucher, and they were then subsequently provided with a debrief of the study alongside information about where to seek support, if it was required. The researcher’s details were provided in the recruitment e-mail and, at the end of the study, the participants had the opportunity to express any concerns, questions, issues or to request the results of the whole study.
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Statistical analysis

All analyses were conducted using the Statistical Package for Social Science (SPSS (PASW), version 18) (SPSS Inc., 2010).

Outliers

All major variables were converted to z-scores, which were inspected to see if any cases had a value greater than 2.58. Any data that met this criterion were considered to be an outlier. Consideration was then given to either include or exclude them from the statistical analysis. Decisions about inclusion/exclusion required consideration about the impact of outliers on the statistical analysis and whether the data was key to testing the hypothesis.

Missing data

All the data was collected online and only data sets that were fully completed were entered in the statistical analysis.

Assumptions for parametric testing

As there were multiple theoretically related dependent variables the use of multivariate analysis of variance was considered a suitable statistical test, with the four assumptions being checked before running the analysis (Field, 2009):

1) Independence

All observations were statistically independent. The survey was completed on-line by individuals in their own environment and the behaviour of one participant could not have influenced the behaviour of another, provided the survey was completed independently as was expected (Field, 2009).
2) Random sampling

The data was randomly sampled from the undergraduate population from one faculty at a university in the south east of England. It is worth noting that it was possible people told each other about the survey but this seems unlikely. Thus participants would independently and randomly complete the survey thus ensuring the first two assumptions were met.

The second assumption also states that the data should be interval level, where the data was not interval level it was treated as interval level by being expressed as a percentage correct score. Data was measured at an interval level on the PHQ-9, MH, AA, and RME speed. However, for RME (total and three valence categories), FPT, and SS the raw data was converted into percentage correct scores ensuring that the data were treated as interval.

3) Multivariate Normality

The dependent variables (collectively) should have multivariate normality within groups. The assumption of multivariate normality cannot be tested in SPSS so the assumption of univariate normality for each dependent variable must be checked (Field, 2009). An *a priori* assessment of univariate normality was made based upon an inspection of the standardised Skewness and Kurtosis values and Shapiro-Wilk tests. Covariance was checked running Box tests concurrently with the statistical analysis (Field, 2009). Additionally, following the running of the statistical analysis the residuals were also inspected to see their fit with the predicted model (Field, 2009). All major variables were screened to see if they met the assumption of normal distribution by inspecting histograms, exploring the

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31 See Appendix P – Testing for normality, for the inspection of the skewness and kurtosis and for the scores of Shapiro-Wilk.
skewness and kurtosis of the data, and by inspection of the Shapiro-Wilk test for normality (Field, 2009). Any variable that violated this assumption was transformed using log transformation, square root transformation and reciprocal transformation (including reverse score transformations when required, Field, 2009). However, this did not resolve the violation. Thus, this assumption was not met. Whilst the assumption for normality was not met parametric tests are generally more powerful than their non-parametric equivalents and F-tests are considered to be relatively robust to the violation of the assumption for normality (Tabachnick & Fidell, 2001). In addition F-tests are considered to be robust to difference in sample size if variance is equal (Langdridge, 2004).

4) Testing for homogeneity of variance and covariance
The fourth assumption is homogeneity of covariance where the variances for each dependent variable should be roughly equal. However, there is not an a priori test for this, so initially homogeneity of univariance was checked (Field, 2009). Therefore, Box tests were run alongside the statistical tests with the results of the Box tests being reported where appropriate within the statistical test results below.

Data analysis
All but one assumption for parametric testing was met so, while acknowledging this violation, multivariate analysis of variance (MANOVA) was used to test for differences between the dysphoric and non-dysphoric groups, for multiple Dependent Variables (DVs) when testing hypotheses about group differences on ToM measures, and for performance on valence on the RME test. Due to the assumptions for parametric tests not being fully met non-parametric tests, namely Mann-Whitney, were undertaken to verify the results. When no non-parametric equivalents exist (as when exploring
between group differences whilst controlling for a covariate) multivariate analysis of covariance (MANCOVA) was considered to be an appropriate test to run, whilst acknowledging the violation of the assumptions. Thus the following analyses were proposed.

**Hypothesis 1:** University students who are mildly depressed will perform better on ToM tasks than non-depressed counterparts, and this would remain the same when controlling for anxiety, time taken on the RME (speed) and IQ.

*Multivariate analysis of variance*

A multivariate analysis of variance (MANOVA) was conducted to explore if there was any difference between the groups for accuracy on the three ToM measures, which was followed up by a complementary series of Mann-Whitney tests to verify the findings.

*Analysis of covariates*

Differences between the groups for the potential covariates were explored by a series of t-tests. The potential covariates were only subsequently explored when there was no significant difference between the two groups, as any shared variance can result in misleading results from any MANCOVs run (Field, 2009). All covariates that did not significantly differ between groups were subsequently tested by mixed-design analysis of covariance (MANCOVA).

**Hypothesis 2:** Dysphoric students will be more accurate on Positive and Neutral valence categories but just as accurate as non-dysphoric counterparts for Negative valence, and this would remain the same when controlling for anxiety, time taken on the RME (speed) and IQ.
Multivariate analysis of variance

A multivariate analysis of variance (MANOVA) was conducted to explore if there was any difference between the groups for accuracy for valence on the RME measure, which was followed up by a complementary series of Mann-Whitney tests to verify the findings.

Analysis of covariates
See above analysis of covariates.

Ethical considerations

This study was granted a favourable ethical opinion by the University Faculty Committee where the study was based\textsuperscript{32}. The study was conducted adhering to the Data Protection Act 1998 (Department for Constitutional Affairs, 2011) and the principles of ethical research outlined by the British Psychological Society (BPS, 2009; BPS, 2010). During the planning and undertaking of this study particular attention was paid to any potential ethical issues, however, the nature of this project meant there were a limited number of issues to consider, namely informed consent, well-being of the participants, and ensuring anonymity and confidentiality. Issues were addressed by the following:

- All participants were fully informed about the nature of the project (an information sheet at the start of the survey with a standardised debriefing sheet at the end).
- Participants were sign-posted about where to seek support (at three points: in the e-mail, with the information sheet and the debriefing sheet at the end of the survey).

\textsuperscript{32} See Appendix F – Favourable ethical opinion.
Participation within the study was completely voluntary and participation could be withdrawn at any time.

Anonymity and confidentiality were assured. This was stated in the information and debriefing sheets.

Limited demographic information was gathered, namely gender, age, ethnicity, occupation and level of education, which helped to ensure anonymity and confidentiality.

In line with the BPS (2010) the standardised debriefing outlined the nature of the research, how the results would be used in the future, and gave the participants contact information to provide feedback or seek additional information from the researcher.

Participation only happened following informed consent being requested and given at the start of the online survey. It was not possible to withdraw consent once the survey had been completed, as the data was stored anonymously. This was made clear on the information sheet presented to the participants.

Participants could score above the threshold for depression on the mood measures but it was neither desirable nor practical to contact them because this would make the anonymity of collection and storage of data impossible. The sign-post sheet was designed to overcome this ethical issue, so participants in distress were directed to contact their GP, and given information about the university wellbeing service, local and national agencies offering support to those at risk of depression was included.

\[^{33}\text{See Appendix N - PDFs of online survey information sheet, consent, demographic questionnaire and standard debriefing.}\]
Results

Data Screening

Outliers

Twenty-one outliers were identified by inspecting the z-scores. On the Mill Hill Vocabulary scale (MH) one outlying score was identified with an IQ score significantly below the mean. This result appeared unusual for a university student and may indicate that the individual did not fully attend to the task. All data for this participant was removed from the subsequent data analysis.

The remaining twenty outliers were investigated and consideration was given to removing them as they may have an effect on statistical tests that rely on measures of central tendency. However, the retention of outliers does not violate the assumption of F-tests (Field, 2009). In addition, it has been argued that they “should be retained unless there is demonstrable proof that they are truly aberrant and not representative of any observations in the population” (Hair et al., 2006, p.66). Thus a decision was made to keep these cases as part of the statistical analysis since they are unlikely to represent a segment of the population and retention means that the results are more generalizable to the entire population (Hair et al., 2006). For accuracy for Neutral valence eyes and Negative valence eyes from the RME test no outlying scores were identified. Please see Appendix R for boxplots of the variables for the two groups.

Missing data and final data set

There were 211 participants who started the survey with 78 incomplete cases. All cases with incomplete data were removed

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34 Meeting the outlier criteria of a z-score more than 2.58 from the mean (Field, 2005).
from the data set, leaving a sample size of 133. With the one participant who produced an outlying Mill Hill score removed the data analysed consisted of 132 cases.

**Demographic data for whole data set**
The sample \((n = 132)\) consisted of 83\% \((n = 109)\) females compared with 17\% \((n = 23)\) males. A Chi squared test was conducted that showed a significant difference between the number of females and males \((x^2 = 56.03, p < .01)\). Participant characteristics are reported in the Method section.

**Descriptive statistics for whole data set**

*Table 1: Descriptive statistics for all variables for complete data set \((n = 132)\)*

<table>
<thead>
<tr>
<th>Measure [total]</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>s.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9 [27]</td>
<td>0.00</td>
<td>24.00</td>
<td>6.64</td>
<td>4.81</td>
</tr>
<tr>
<td>RME Accuracy [%]</td>
<td>50.00</td>
<td>100.00</td>
<td>73.44</td>
<td>9.30</td>
</tr>
<tr>
<td>Positive valence [%]</td>
<td>12.00</td>
<td>100.00</td>
<td>76.19</td>
<td>17.81</td>
</tr>
<tr>
<td>Neutral valence [%]</td>
<td>25.00</td>
<td>94.00</td>
<td>66.10</td>
<td>13.56</td>
</tr>
<tr>
<td>Negative valence [%]</td>
<td>42.00</td>
<td>100.00</td>
<td>73.90</td>
<td>12.64</td>
</tr>
<tr>
<td>FPT [%]</td>
<td>60.00</td>
<td>100.00</td>
<td>91.67</td>
<td>8.19</td>
</tr>
<tr>
<td>SS [%]</td>
<td>38.00</td>
<td>100.00</td>
<td>81.04</td>
<td>13.22</td>
</tr>
<tr>
<td>RME speed [time ms]</td>
<td>4213.00</td>
<td>206609.00</td>
<td>12273.72</td>
<td>20708.34</td>
</tr>
<tr>
<td>MH [130]</td>
<td>89.00</td>
<td>130.00</td>
<td>111.91</td>
<td>9.64</td>
</tr>
<tr>
<td>AA [50]</td>
<td>10.00</td>
<td>28.00</td>
<td>14.64</td>
<td>4.42</td>
</tr>
</tbody>
</table>

Initially the data was analysed by inspecting the means (average score), and standard deviations (spread of scores). The major variables used in the statistical analysis were explored; namely the
Patient Health Questionnaire-9 (PHQ-9), Mill Hill Vocabulary Scale (MH: IQ), Anxiety Arousal (MASQ-D30) (AA), Reading the Mind in the Eyes (RME), Faux-Pas Test (FPT), Strange Stories (SS), speed on the RME and valence (positive, neutral and negative) accuracy for the RME measure. Above in Table 1 are the descriptive statistics for the entire sample.

Examination of the descriptive statistics, for the whole data set, showed that for the PHQ-9 most of the participants scored in the non-dysphoric range (mean 6.64, s.d. 4.81), placing most participants in the no to minimal symptoms range. Participants were generally highly accurate on the RME test, with the mean score of 73.44% (s.d. 9.30). For FPT (mean 91.67%, s.d. 8.19) the majority of participants scored at the top end on this measure, demonstrating a possible ceiling effect. This was also true for SS (mean 81.04%, s.d. 13.22) with participants scoring highly on this measure demonstrating a possible ceiling effect. Table 1 shows that participants were scoring highly for correct identification of eyes (RME) with positive valence (mean 76.19%, s.d. 17.81), for neutral valence they identified over half of the stimuli (mean 66.10%, s.d. 13.56) and they were highly accurate for identification of negative valence (mean 73.90%, s.d. 12.64).

It can be seen that for the total sample there was a significant spread of time taken by the participants on the RME (mean 12273.72ms, s.d. 20708.34) indicating that there was variability in the time taken by participants on this measure. Table 1 shows a mean IQ score of 111.91, on the MH, which indicates this was the typical score which falls in the High Average Range for IQ (110-120) (Wechsler, 1998). However, it is worth noting that whilst this was the typical score there were both higher and lower scores than this. Most participants showed a low level of self-reported anxiety on the Anxiety Arousal
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(AA) (mean 14.64, s.d. 4.42). Of note the mean for AA within the current study was approximate to the mean found by a prior study of the general population (mean 14.9, s.d. 5.6; Wardenaar & Den Hollander-Gijsman, 2011).

The data set was then divided into the two groups, non-dysphoric (n = 105) and dysphoric (n = 27) with the variables being explored to see if there were differences between the two groups. Where data met the assumptions for parametric tests independent t-tests were used, when the assumptions were not met Mann-Whitney tests were used.

**Table 2: Descriptive statistics and between-group difference tests for age**

<table>
<thead>
<tr>
<th></th>
<th>Non-dysphoric students mean (s.d.)</th>
<th>Dysphoric students mean (s.d.)</th>
<th>Test statistic</th>
<th>P (sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>21.27 (5.060)</td>
<td>21.33 (4.234)</td>
<td>t = -.63</td>
<td>.95</td>
</tr>
</tbody>
</table>

Table 2 shows that there was no significant difference found between the ages of the participants in the two groups.

**Table 3: Descriptive statistics and between-group difference tests for gender**

<table>
<thead>
<tr>
<th></th>
<th>Non-dysphoric students</th>
<th>Dysphoric students</th>
<th>Total students by gender</th>
<th>Test statistic</th>
<th>P (sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender Male</td>
<td>21</td>
<td>2</td>
<td>23</td>
<td></td>
<td>.12</td>
</tr>
<tr>
<td>Female</td>
<td>84</td>
<td>25</td>
<td>109</td>
<td>$X^2 = 2.37$</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows that the gender difference between the two groups was not statistically significant.
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Table 4: Descriptive statistics and between group differences for all dependent variables and covariates

<table>
<thead>
<tr>
<th>Measure [total score]</th>
<th>Non-dysphoric Mean (s.d.)</th>
<th>Dysphoric Mean (s.d.)</th>
<th>Test statistic</th>
<th>p (sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RME</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% correct</td>
<td>73.57 (9.74)</td>
<td>72.94 (7.51)</td>
<td>(t = .31)</td>
<td>.76</td>
</tr>
<tr>
<td>Positive valence % correct</td>
<td>77.03 (17.99)</td>
<td>72.93 (16.99)</td>
<td>(U = 1190.50)</td>
<td>.19</td>
</tr>
<tr>
<td>Neutral valence % correct</td>
<td>65.58 (13.90)</td>
<td>68.11 (12.14)</td>
<td>(U = 1298.00)</td>
<td>.50</td>
</tr>
<tr>
<td>Negative valence % correct</td>
<td>74.41 (12.21)</td>
<td>71.93 (14.29)</td>
<td>(U = 1235.00)</td>
<td>.29</td>
</tr>
<tr>
<td>FPT % correct</td>
<td>91.39 (8.68)</td>
<td>92.78 (5.87)</td>
<td>(U = 1388.50)</td>
<td>.37</td>
</tr>
<tr>
<td>SS % correct</td>
<td>81.70 (12.50)</td>
<td>78.44 (8.19)</td>
<td>(U = 1261.00)</td>
<td>.87</td>
</tr>
<tr>
<td>AA [maximum score = 50]</td>
<td>13.77 (3.79)</td>
<td>18.04 (5.10)</td>
<td>(U = 714.00)</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>RME speed (milliseconds (ms))</td>
<td>12576.22 (23029.70)</td>
<td>12273.72 (6115.24)</td>
<td>(U = 1086.00)</td>
<td>.06</td>
</tr>
<tr>
<td>MH (IQ) [130]</td>
<td>111.42 (9.78)</td>
<td>113.81 (9.03)</td>
<td>(t = -1.15)</td>
<td>.25</td>
</tr>
</tbody>
</table>

Key of measures
PHQ-9 – Patient Health Questionnaire-9
RME – Reading the Mind in the Eyes
FPT – Faux-Pas Test
SS – Strange Stories
MH – Mill Hill Vocabulary Scale (IQ)
AA – Anxiety Arousal (MASQ-D30)
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Table 4 shows that there was a significant difference between the two groups (non-dysphoric and dysphoric) for self-reported levels of anxiety (AA). There were no other differences between the two groups.

Checking Assumptions for parametric testing
As discussed above the four assumptions required for MANOVA were checked. The first two assumptions, independence and random sampling, were met. An inspection of the skewness and kurtosis was undertaken to check for normality. For skewness both on the MH and RME (speed), the skewness statistic/standard error score, were found to be less than 1.96 indicating that the data was normally distributed (Field, 2009). However, for the other eight major variables the statistic/standard scores were greater than 1.96 indicating that the data was significantly skewed and did not meet the assumption for normality.

An inspection of the kurtosis statistic divided by the standard error score indicated that for RME (percentage correct), SS, and MH the data met the criteria for normality with the values being less than 1.96 (Field, 2009). For the other seven major variables kurtosis calculations were greater than 1.96 and, therefore, did not meet this assumption for normality.

The Shapiro-Wilk goodness of fit tests indicated that eight of the nine major variables were not normally distributed: FPT percentage correct \((W(132) = .820, p < .01)\) and SS percentage correct \((W(132) = .925, p < .01)\), Positive valence \((W(132) = .909, p < .01)\), Neutral valence \((W(132) = .961, p < .01)\), Negative valence \((W(132) = .956, p < .01)\), RME speed \((W(132) = .272, p < .01)\), AA \((W(132) = .893, p < .01)\), MH \((W(132) = .860, p = .003)\). The exception being RME percentage correct, which was not significant and, therefore normally
distributed ($W (132) = .987, p = .250$). In summary for normality checking, the RME was the only measure that for all three checks was shown to be normally distributed, thus the data violated the assumption of normality. In addition, following the running of the statistical analysis outlined below the distribution of the residuals were found to be not normally distributed.

The fourth assumption was checked as discussed above and Levene's tests showed that the data met the assumption for homogeneity of variance. The results of the Box tests, reported where appropriate within the statistical test results below, showed the matrices were not significantly different.

**Decision to use parametric and non-parametric analysis**

To summarise, three of the assumptions for parametric testing were met: independence, random sampling, and homogeneity of univarince with homogeneity of covariance being checked alongside the statistical analysis by reporting Box tests. The assumption for normality was not met. However, given the greater power and robust nature of F-tests, parametric tests formed the main analysis. Findings from the parametric tests were, where possible, verified by complementary non-parametric statistical tests.

**Hypothesis testing**

**Accuracy analysis**

**Hypothesis 1:** University students who are mildly depressed will perform better on ToM tasks than non-depressed counterparts, even when controlling for anxiety, time taken on the RME (speed) and IQ.

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35 See Appendix Q – Levene’s test scores.

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To test the hypothesis of differences in accuracy performance between the two groups on the three ToM measures a MANOVA was performed. There was no significant difference between the two groups for their accuracy for the three ToM variables ($V^{36} = 0.21$, $F (1, 128) = .901, p = .443$). The univariate between-group ANOVAs examining differences in accuracy on each outcome variable were also not significant; RME ($F (1, 130) = .615, p = .434$), FPT ($F (1, 130) = 1.310, p = .254$) and SS ($F (1, 130) = .098, p = .755$). Due to the sample size being different Box's test looking at variance-covariance was checked. It was not significant, thus the assumption of homogeneity of covariance was met indicating the matrices are not significantly different ($M (6) = 11.747, p = .082$). Additionally, covariances being equal indicated that the differing sample size would not affect the robustness of the $F$-test.

Anxiety as a covariate
The anxiety (AA measure) was found to have shared variance ($U = 714.000, z = -3.993, p < .00, r = -.348$) and any shared variance can result in misleading results from any MANCOVA’s run (Field, 2009). Hence anxiety was not further explored as a covariate.

Speed as a covariate
A MANCOVA (Group: dysphoric, non-dysphoric) was run to explore the differences between the two groups on the three ToM measures (RME, FPT, SS) whilst controlling for response time on the RME task. There was no significant difference between the two groups for their accuracy on the ToM measures with speed on the RME controlled for ($V = .022, F (1, 127) = .935, p = .426$). The univariate ANOVA’s on the outcome variables also showed non-significant difference for performance on the ToM measures, RME percentage

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36 Field (2009) recommends reporting Pillai’s trace as the multivariate test statistic. 214
correct \((F (1,129) = .149, p = .700)\), FPT percentage correct \((F (1, 129) = .521, p = .472)\), and SS percentage correct \((F (1, 129) = 1.582, p = .211)\). In summary, there were no significant differences found in accuracy between the two groups on the three ToM measures when controlling for RME response time.

**Intelligence as a covariate**

A MANCOVA (Group: dysphoric, non-dysphoric) was run to explore the differences between the two groups on the three ToM measures (RME, FPT, SS) whilst controlling for IQ. This explored the differences between the two groups, for accuracy on the three ToM measures, with IQ as a covariate. There was no significant difference between the two groups for accuracy on the three ToM measures, with IQ entered as a covariate \((V = .031, F (1, 127) = 1.346, p = .262)\). The univariate ANOVA's on the outcome variables also showed non-significant difference for performance between the groups for the three measures, on the RME \((F (1, 129) = .249, p = .618)\), FPT \((F (1, 129) = .646, p = .423)\), and on the SS \((F (1, 129) = 1.441, p = .232)\). In summary, there were no significant differences found in accuracy between the two groups on the three ToM measures when controlling for IQ.

**Valence analysis for RME**

**Hypothesis 2:** Dysphoric students will be more accurate on Positive and Neutral valence categories but only as accurate as non-dysphoric counterparts for Negative valence, and this would remain the same when controlling for anxiety, time taken on the RME (speed) and IQ.
In order to explore if there were any differences in the accuracy for valence between the two groups a MANOVA was conducted with one independent variable (group: dysphoric and non-dysphoric) and three dependent variables (positive, neutral and negative RME stimuli). There was no significant difference between the two groups ($V = .027$, $F (1, 128) = 1.169$, $p = .324$). The univariate ANOVA's on the dependent variables also showed non-significant difference for accuracy, for Positive valence eyes ($F (1, 130) = .828$, $p = .365$), Neutral valence eyes ($F (1, 130) = 1.141$, $p = .287$), and Negative valence eyes ($F (1, 130) = .747$, $p = .389$). Box's test was run to check for the assumption of equality of covariance by comparing the matrices and, was found to be not significant, indicating the matrices were not significantly different, and the assumption of homogeneity of covariance was met ($M (6) = 12.154$, $p = .071$).

Valence with anxiety as a covariate

See above section Anxiety as a covariate.

Valence with speed as a covariate

A MANCOVA (Group: dysphoric, non-dysphoric) was run to explore the differences between the two groups on the three valence categories (Positive, Neutral, Negative) whilst controlling for response time on the RME task. There was no significant difference between the two groups for their accuracy of valence identification, with speed on the RME controlled for ($V = .028$, $F (1,127) = 1.228$, $p = .302$). The univariate ANOVAs performed on the outcome variables also showed no significant difference for performance between the groups for identification of valence on the RME task, Positive valence ($F (1, 129) = .1.211$, $p = .273$), Neutral valence ($F (1, 129) = .693$, $p = .407$), and Negative valence ($F (1, 129) = .967$, $p = .327$). In summary, there were no significant differences found in
accuracy between the two groups for valence of stimuli when controlling for RME response time.

Valence with IQ as a covariate
A MANCOVA (Group: dysphoric, non-dysphoric) was run to explore the differences between the two groups on the three valence categories (Positive, Neutral, Negative) whilst controlling for IQ. There was no significant difference between the two groups for accuracy for the three valence categories, with IQ controlled for ($V = .026$, $F (1, 127) = 1.149, p = .332$).

The univariate ANOVA's on the outcome variables also showed no significant difference for performance between the groups for valence, Positive valence ($F (1, 129) = 1.084, p = .300$), Neutral valence ($F (1, 129) = .479, p = .490$), and Negative valence ($F (1, 129) = 1.198, p = .276$). To summarise there was no significant difference found in accuracy for valence on the RME task when controlling for IQ.
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Discussion

This study aimed to explore the relationship between depression and theory of mind (ToM) abilities in order to test competing theories as to the nature of ToM abilities in depression. The study partially replicated and extended a study by Harkness et al. (2005) by including a range of ToM measures and by including measures of potential confounding variables. As such this study was well placed to test the competing theories about the relationship between ToM abilities and depression.

Based upon the theory suggested by Harkness et al. (2005) it was hypothesised that individuals who were dysphoric would be more accurate on the ToM measures. This current study did not replicate the findings of Harkness et al. (2005), as the dysphoric students were only as accurate as their non-dysphoric counterparts. Secondly, the study explored the hypothesis that dysphoric students would be more accurate on the positive and neutral valence items on the RME than their non-dysphoric peers. The findings of this current study did not replicate Harkness et al. (2005) findings as the dysphoric students were found to be just as accurate for accuracy on the three valence categories. The current study also attempted to address whether anxiety, processing speed (time taken on the RME) or intelligence/abilities were confounding variables. The findings of this current study were that time taken and IQ were not confounding variables (anxiety was not explored as a potential confounding variable as it was strongly associated with depression). Following a detailed discussion of the current findings, the strengths and limitations of the current study, the clinical implications and recommendations for future research will be explored.
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Findings

Accuracy on Theory of Mind Measures

As stated above, no significant differences were found between the dysphoric and non-dysphoric group for accuracy on any of the three ToM measures (RME, FPT, and SS). Therefore the first hypothesis that dysphoric students will be more accurate on ToM measures is not supported and is not in line with the findings of Harkness et al. (2005) who found that dysphoric students had enhanced ToM abilities. Nor do the current findings support other literature that found dysphoric or depressed individuals to have poorer ToM abilities (e.g. Inoue et al., 2006; Zobel, 2010). The current findings bring into question the theories that individuals who are dysphoric either have an enhanced ToM or a deficit in ToM.

The findings of this study for accuracy on the RME ToM measure are in line with one current research finding that dysphoric and non-dysphoric individuals perform equally well, for decoding abilities, on the RME test (Wolkenstein et al., 2011). Wolkenstein et al. (2011) suggested the RME test could be considered to be assessing an individual's ability to decode another's mental state whilst the Movie for the Assessment of Social Cognition (MASC) was also tapping into the reasoning component of ToM abilities. They found that participants displayed poorer performance on the MASC which arguably required the use of both decoding and reasoning aspects of ToM. If ToM involves two distinct components, namely decoding and reasoning, it may well be that the RME relies on the decoding aspect of ToM. However, in contrast to Wolkenstein et al. (2011) in this current study this does not seem to account for the findings for the FPT and the SS which would potentially require both decoding and reasoning skills. The results of this study are indicative of both dysphoric and non-dysphoric students being just as accurate for both
decoding and reasoning components of ToM, which is not in line with the overall findings of Wolkenstein et al. (2011).

Valence analysis for RME

Harkness et al. (2005) had found within their study dysphoric students were more accurate on the Positive and Neutral valence items on the RME. Harkness et al. (2005) found that dysphoric students were just as accurate for Negative valence. The current findings only partially replicate their findings, as the dysphoric and non-dysphoric were found to be equally as accurate on the three valence categories (Positive, Neutral, Negative). Harkness et al. (2005) and the current findings did not provide evidence that dysphoric students have a negative cognitive bias.

Interestingly the current findings potentially differ to prior cognitive theorising about depression where these theories have tended to "emphasize the role of dysfunctional cognitive structures and biased information processing in placing individuals at elevated risk for experiencing depression" (Gotlib et al., 2004, p.127). For this current study only 3 (11%) of the 27 participants in the dysphoric group scored in the severe range on the PHQ-9. This means that almost all the participants in this study (89%) scored in the mild to moderate range for depression. Thus the findings of this current study could suggest that the cognitive biases associated with depression are not found in relation to ToM abilities for people with mild to moderate depression but maybe associated with those who are more severely depressed. A possible hypothesis is that people experiencing severe/major depression would be completely immersed in low mood and the associated negative thinking biases associated with this mood state. It could be the case that ToM abilities might be affected by this extreme mood state and this could explain why some studies with clinical groups found ToM deficits. The focus in this study was
mild to moderate depression, and this mood state might mean that thinking biases are not strongly apparent. Thus people are still able to reason in a more balanced manner and, therefore, ToM abilities might not be affected. Previous studies that found deficits in ToM abilities had focused on participants who either currently met the diagnostic criteria for major depression or had had a previous episode of major depression which appears to support this hypothesis.

**Time taken as a covariate**

There were no significant differences found in accuracy on the three ToM measures or for valence when controlling for RME response time between the two groups. Therefore, time taken on the RME was not found to be a confounding variable within this study.

**IQ as a potential covariate**

Overall the results remained the same when controlling for IQ as a potential covariate, for both accuracy and valence. The findings of this study were that IQ was not found to be a confounding variable. Past research has not considered if IQ is a confounding variable. However, a limitation of this current study is that the sample was university students in which you may not expect to find low IQ scores and it may be the case that IQ could still be a confounding variable when taking into account a broader range of IQ scores.

**Summary of findings**

The current study attempted to extend the evidence base, going beyond previous research, by attempting to replicate an unusual finding in the literature on ToM and low mood (Harkness *et al.*, 2005). This design improved on one key criticism of this controversial finding, using only one ToM measure, by using three ToM measures, which seemed to tap into both the decoding and reasoning
components of ToM. One important limitation of the Harkness et al. (2005) study was using 11 as a cut-off on the BDI which is below the clinical cut-off and would have meant that they included people in their dysphoria group who were below the cut-off for meeting diagnostic criteria. The current study used a cut-off that would have mainly captured people who would meet the DSM-IV diagnostic criteria for depression and it is possible that this difference in cut-off may partially explain the different findings.

Strengths and Limitations

Online survey
Using an online survey presents strengths and weaknesses in the project. An advantage of having an online survey is that it was possible to attempt to access a large number of potential participants from a broad range of backgrounds. However, by the nature of the survey accessing a large number of people in their own environment, it means that the researcher has no control over the environmental conditions i.e. undertaking the survey in silence or being on their own.

Difficulties with replicating
The mood measure PHQ-9 was deemed a suitable replacement measure for the BDI-II to use as a grouping measure for depression for the reasons outlined in the Method. However, these are two measures that have differences between them, such as the number of questions asked and the categories into which the measures place individuals. Whilst they do appear to categorise individuals who are depressed at similar severity (indeed they have been found to categorise more severely than other measures (Cameron et al., 2011)), they have differing designs that could impact on how they categorise depressed people. The researcher undertook an investigation into the two measures that indicated the PHQ-9 would
be a suitable replacement for the BDI-II but it is worth considering whether these measures may have produced a different allocation for the two groups of dysphoric and non-dysphoric. However, the choice of the PHQ-9 was considered the most suitable option at the time of the project for the reasons outlined in the Method.

Sample characteristics, size and gender
A strength of this current project was its large sample size ensuring sufficient power was reached. However, there was a larger number of females, which possibly reflects that the psychology department was in the faculty and is typically female-dominated at undergraduate level (Sander et al., 2007). Statistics on web-based surveys have shown that males and females are equally likely to complete online questionnaires (Gosling et al., 2004). This seems to suggest that the gender bias was in the pool of possible participants. With a larger number of females than males it suggests that the findings should be treated with caution when generalising about the findings to both genders.

Problems with the theory of mind measures
A problem with available ToM measures is they do not sufficiently resemble 'real life' situations (Simpson et al., 1998). Johnston et al. (2008) found that their participants were scoring above chance on the RME test, without the stimuli eyes being present, and they criticised the measure as not having the “normal contextual” information that everyday situations have where ToM abilities are usually required. There are methodological implications arising from this problem with the current ToM measures. One possible change to the methodology that could be considered would be to attempt to capture potential evidence, such as in real life situations. This may be achieved by using measures that are normed for the general adult population and attempt to replicate more real life situations. The
current ToM measures have predominantly been designed for use with atypical adults and, whilst there have been attempts to change this by developing more appropriate measures for adults, there could still be improvements made by designing measures that capture everyday subtle social cues. However, it would require research to develop these measures.

The possible ceiling effect for the FPT (participants scoring over 60% correct; mean 91.67%) is an argument for more research into the development of ToM measures for neuro-typical adults in order to overcome this difficulty. An additional problem with the ToM measures is that they all have limited information published about their psychometric properties. This lack of psychometrically sound measures lies beyond the scope of this study to address and future research could aim to address this limitation.

Order of the measures
The mood measures were placed at the start of the survey as these were required to group the participants and without this data the other answers would not be useable. Potentially having the two mood measures at the start of the survey may have led to attrition. These two mood measures ask quite difficult questions\(^{37}\) that some participants may have found hard to answer, or may have even provoked difficult feelings for those that were already feeling low. This may have been the case despite the researcher providing sign-posting details for support in two places before the start of the survey. The researcher considered that some of those participants who did not complete the survey may have been more severely depressed individuals. By having the mood measures first this may have potentially deterred completion through provoking negative

\(^{37}\) See Appendices H to M for copies of the measures.
mood states by simply asking about their current (in the past two weeks) mood state. This hypothesis that the mood measures may have deterred people is supported by 50% attrition occurring whilst or just after completing these measures. However, as this data was key for the usefulness of subsequent data collected, the researcher considered they were best placed at the start of the survey to ensure maximum data was useable.

Theoretical Implications
The results of this study suggest that the negative biases associated with depression within the cognitive model do not appear to be true for individuals who are mildly to moderately depressed when they are employing reasoning or decoding abilities to understand other's mental states (ToM). Theorising based on these findings would propose that ToM abilities are largely intact for people experiencing mild to moderate depression. The prior studies that found ToM abilities impairment associated with depression were largely based upon clinical populations and so, it could be argued, that the cognitive biases may only begin to influence reasoning or decoding about mental states when depression is more prolonged or severe. This would also help explain why this study did not find impaired ToM abilities in a non-clinical population. Hence theorising about ToM abilities, based upon previous and current findings, suggest that it is possible that ToM deficits might be differentially associated with levels of depression severity. Specifically ToM deficits appear to have been associated with severe depression or clinical levels of depression. This suggests that further research is needed to explore this hypothesis. However, without this research it is difficult to tease out more fully whether the suggested theoretical implications are valid.
Clinical implications

Given previous mixed findings, and the current findings adding to this mixed picture the clinical implications that can be drawn appear to be rather limited. Had this current study found differences in accuracy for the total RME or valence on the RME there might have been implications for developing cognitive therapy to include targeting ToM decoding and reasoning deficits. As this is not the case and no differences were found it is difficult to draw out clinical implications without further research.

Recommendations for future research

To date ToM deficits appear to have been found to be associated with severe/major depression rather than those who are mild to moderately depressed. The mixed findings of research so far indicate that future research is required to test the different levels of depression by comparing people with severe depression to people with mild to moderate depression to people without depression using a battery of ToM measures.

Another primary task for future research would be to try and replicate Harkness et al. (2005) again, as this current study and Wolkenstein et al. (2011) have failed to support their findings. Despite having a number of measures that were the same as Harkness et al. (2005) the current study failed to replicate their findings. It is possible that the methodological limitations of the current study resulted in this lack of replication, however, given the mixed findings of research it seems unlikely that it is due to these limitations alone. Other research has found similar findings to the current study and future research is required to develop the evidence base in this area.
Future research could seek to overcome the ceiling effect on the FPT for the general adult population and improve the measures for the general adult population. The current ToM measures appear to suffer from ceiling effects, limitations due to not being originally designed for adults or are lengthy measures to administer and these issues may limit the use of them to assess small changes in ToM abilities within the general adult population. Other adult ToM measures are time consuming or/and are not easy to administer, such as Mental States measure (MSRS), so improving the FPT and SS for use with adults would help future research to assess more subtle changes in ToM abilities within adult populations.

The current ToM measures do not appear to enable researchers to easily explore the two different aspects of ToM abilities separately. Therefore, before research could more fully investigate these different aspects there appears a need for researchers to develop different measures that clearly differentiate between reasoning and decoding for the adult population. Future research could then seek to explore the different aspects to ToM, such as the two currently conceptualised as decoding and reasoning.

Conclusion
This study finds that dysphoric students do not perform significantly differently to their non-dysphoric counterparts, for accuracy on ToM measures, for time taken on the RME and for valence. Anxiety, time taken and IQ were not found to be covariates. These findings appear to concur with some, but also differ from other previous research findings.

Mixed research findings indicate that severely depressed individuals had deficits in ToM, with mild to moderately depressed individuals having either enhanced or comparable ToM abilities compared with
non-depressed counterparts. Therefore it seems that the relationship between ToM and depression is complex. From the analysis of the previous and current findings there appears to be an emerging picture of different sub-groups within depression in relation to ToM abilities. The first is the more severe and chronically depressed people that have been found to struggle with ToM abilities; the other is individuals with mild to moderate depression, who perform equally as well or have been found to have enhanced ToM abilities. In summary, the mixed findings of research into ToM and depression may be due to different sub-groups within depression exhibiting differences in their ToM abilities.
MRP: Do dysphoric students have an enhanced theory of mind?
MRP: Do dysphoric students have an enhanced theory of mind?

References


MRP: Do dysphoric students have an enhanced theory of mind?


MRP: Do dysphoric students have an enhanced theory of mind?


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Flavell, J. H. (1988). The development of children’s knowledge about the mind: From cognitive connections to mental representations. In
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M Snape: Do dysphoric students have an enhanced theory of mind?


SPSS Inc. (2010). *SPSS (PASW), version 18, for Windows.* Chicago: SPSS Inc..


MRR: Do dysphoric students have an enhanced theory of mind?


MRP: Do dysphoric students have an enhanced theory of mind?


MRP: Do dysphoric students have an enhanced theory of mind?

APPENDICES
MRP: Do dysphoric students have an enhanced theory of mind?
Appendix A - ICD-10 classification of depression

**F32** Depressive episode

In typical mild, moderate, or severe depressive episodes, the patient suffers from lowering of mood, reduction of energy, and decrease in activity. Capacity for enjoyment, interest, and concentration is reduced, and marked tiredness after even minimum effort is common. Sleep is usually disturbed and appetite diminished. Self-esteem and self-confidence are almost always reduced and, even in the mild form, some ideas of guilt or worthlessness are often present. The lowered mood varies little from day to day, is unresponsive to circumstances and may be accompanied by so-called "somatic" symptoms, such as loss of interest and pleasurable feelings, waking in the morning several hours before the usual time, depression worst in the morning, marked psychomotor retardation, agitation, loss of appetite, weight loss, and loss of libido. Depending upon the number and severity of the symptoms, a depressive episode may be specified as mild, moderate or severe.

*Includes:* single episodes of:
- depressive reaction
- psychogenic depression
- reactive depression

*Excludes:* adjustment disorder (F43.2)
recurrent depressive disorder (F33)
when associated with conduct disorders in F91.-
( F92.0)

**F32.0** Mild depressive episode

Two or three of the above symptoms are usually present. The patient is usually distressed by these but will probably be able to continue with most activities.

**F32.1** Moderate depressive episode

Four or more of the above symptoms are usually present and the patient is likely to have great difficulty in continuing with ordinary activities.

**F32.2** Severe depressive episode without psychotic symptoms
An episode of depression in which several of the above symptoms are marked and distressing, typically loss of self-esteem and ideas of worthlessness or guilt. Suicidal thoughts and acts are common and a number of "somatic" symptoms are usually present.

Agitated depression
Major depression} single episode without psychotic symptoms
Vital depression

F32.3 Severe depressive episode with psychotic symptoms

An episode of depression as described in F32.2, but with the presence of hallucinations, delusions, psychomotor retardation, or stupor so severe that ordinary social activities are impossible; there may be danger to life from suicide, dehydration, or starvation. The hallucinations and delusions may or may not be mood-congruent.

Single episodes of:
  • major depression with psychotic symptoms
  • psychogenic depressive psychosis
  • psychotic depression
  • reactive depressive psychosis

F32.8 Other depressive episodes

Atypical depression
Single episodes of "masked" depression NOS

F32.9 Depressive episode, unspecified

Depression NOS
Depressive disorder NOS"

(WHO, 2007, p.58-60)
Appendix B – Table of Possible Symptoms of Depression

| Changes in appetite or eating disturbances, people can report a loss of appetite and weight (this can lead to anorexia) whilst other report weight gain (comfort eating) |
| Sadness, dejection, despondency, low spirits |
| Changes in sleep patterns – early morning awakening, disturbed sleep or insomnia, difficulties falling asleep, or too much sleep |
| Reduced energy levels, fatigue, tiredness |
| Reduced sexual desire and arousal, and failure to achieve orgasm or ejaculation |
| Withdrawing socially |
| Reduced interest and pleasure from activities |
| Movements slowed (subjective perception) |
| Tearfulness |
| Subjective agitation |
| Impaired concentration |
| Slowed thinking and movement – this can be subjective perception |
| Difficulty starting activities |
| Difficulty decision-making, indecisiveness |
| Suicide ideation and plans |
| Increased irritability |
| Hopelessness - feeling that they will never get well. |
MRP: Do dysphoric students have an enhanced theory of mind?

(The information in the table was compiled from the following sources: Beck et al., 1979; Rippere, 1980; Winokur, 1981; Coyne, 1985; Mondimore, 1995; Wasserman, 2006).
**Appendix C - Table of Theory of Mind Measures**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Date</th>
<th>Author</th>
<th>Suitable for adults</th>
<th>Suitable for computer</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 The Awareness of Social Inference Test (TASIT)</td>
<td>2006</td>
<td>McDonald, Bornhofen, Shum, Log, Saunders and Neulinger - reliability and validity</td>
<td>Y</td>
<td>N</td>
<td>An audio visual tool a measure assessing comprehension of sarcasm versus lies a clinical test of social perception</td>
</tr>
<tr>
<td>2 Hinting task</td>
<td>1995</td>
<td>Corcoran, Mercer, &amp; Frith</td>
<td>Y</td>
<td>N</td>
<td>A simple theory of mind test - the participant must infer the intention behind veiled speech acts. The task has a maximum score of 20 and normal adults tend to score close to ceiling.</td>
</tr>
<tr>
<td>3 Cartoon comprehension task</td>
<td>1997</td>
<td>Corcoran, Cahill, &amp; Frith,</td>
<td>Y</td>
<td>Y</td>
<td>8 cartoons, 4 requiring a mentalising explanations (ToM cartoons) and 4 requiring non-mentalising explanations (non-ToM cartoons).</td>
</tr>
<tr>
<td>4 Cartoon comprehension task 30 cartoons</td>
<td>2006</td>
<td>Griffin et al</td>
<td>Y</td>
<td>N</td>
<td>Humour rating Emotion rating ToM and non-ToM inference task ToM questions Non-ToM questions</td>
</tr>
<tr>
<td>Measure</td>
<td>Date</td>
<td>Author</td>
<td>Suitable for adults</td>
<td>Suitable for computer</td>
<td>Brief description</td>
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| Wilhelm Busch – Caricaturist Cartoon picture stories | 2004  | Inoue et al (Mood disordered group vs control) [IQ measured using Info and PC from WAIS-R] | Y                   | N                     | Four pictures in sequence  
|                                               |       |                               |                     |                       | Asked a first order belief question “What does the monkey think is in the bag?”  
|                                               |       |                               |                     |                       | Asked a reality question “What is really in the bag?”  
|                                               |       |                               |                     |                       | Asked a second order false belief question “what was actually in the bag?”  
|                                               |       |                               |                     |                       | Asked the reality question again “What is really in the bag?”  
|                                               |       |                               |                     |                       | Asked a tactical deceptions question “What does the woman intent to do?”  
|                                               |       |                               |                     |                       | This would be quiet complicated to do via a computer I think?                                                                                       |
| Imposing Memory Task (IMT)                   | 1998  | Kinderman, Dunbar, & Bentall, 1998 | Y                   | N                     | Five stories are read out at the same time as being presented on an overhead projector  
|                                               |       |                               |                     |                       | The participants have to complete a booklet of questions tapping into ToM and memory of information in the stories. Both 1st order and 2nd order                                                                 |
| RF measure                                   |       | Fonagy Steele, Steele and Target (1997) | Y                   | N                     | Assesses the clarity and complexity of a person’s representation of mental states, whether of self and others  
|                                               |       |                               |                     |                       | Using the participant’s scores on the AAI Pairs of raters arrived at correlations between .81 and .94 Pearson correlation r .86                                                                                       |
| Mental States Rating System (MSRS)           | 2001  | Bouchard                      | Y                   | N                     | Requires 45 hours of training                                                                                                                                 |

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<table>
<thead>
<tr>
<th>Measure</th>
<th>Author</th>
<th>Date</th>
<th>Suitable for adults</th>
<th>Suitable for computer</th>
<th>Brief description</th>
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</thead>
<tbody>
<tr>
<td>Affect mentalisation</td>
<td>LeCours</td>
<td>1995</td>
<td>N</td>
<td>N</td>
<td>Two orthogonal dimensions to the quality of verbal expression of affect. Transcripts need to section to find sections where affect is discussed by a first judge. Observer second judge assigns a score using the GEVA bidimensional scoring. 5 stories are read out to participants at the same time as being presented on overhead projector. 4 of these stories involved complex social situations that required listeners to understand the perspective and intentions of the actors. The final one involves only one actor. Has both 1st order and 2nd order questions alongside memory questions. Children were first shown four photographs (depicting a small pile of Smarties, a pencil, numbered blocks and a small knitted toy bee), and asked to name the depicted object as they were placed one at a time on the table in front of the subject. The subject was then shown a familiar tube of Smarties and asked &quot;What do you think is inside this tube?&quot;. The subjects were then asked to find the picture or objects they thought was inside and asked to mail the appropriate photo in a red toy postbox, which had been placed in front of them.</td>
</tr>
<tr>
<td>I'Elaboration Verbal do elaboration of affect scale</td>
<td>Kinderman, Dunbar &amp; Bentall</td>
<td>1996</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Imposing Memory Task (IMT)</td>
<td>Charman &amp; Lynggaard</td>
<td>1998</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Author</td>
<td>Measure</td>
<td>Brief description</td>
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<tr>
<td>1985</td>
<td>Baron-Cohen</td>
<td>12 1st order False- Belief task (Sally-Ann)</td>
<td>Suitable for computer: Y, Suitable for adults: N, See Appendix D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>Gopnick &amp; Astington</td>
<td>13 Deceptive Box test</td>
<td>Same as 11, Children are given a clip to watch in which animal characters were</td>
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<td></td>
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<td>offered various types of container and then they had to predict their</td>
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<td></td>
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<td>emotional reactions.</td>
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<tr>
<td>1989</td>
<td>Harris et al</td>
<td>14 Belief-Caste Reasoning task</td>
<td>Children are given a clip to watch in which animal characters were</td>
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<td></td>
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<td>offered various types of container and then they had to predict their</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>emotional reactions.</td>
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<tr>
<td>?</td>
<td>Moore et al</td>
<td>15 Set of six short stories simultaneously</td>
<td>Assesses ability to understand states of false belief and of</td>
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<td></td>
<td></td>
<td>showing a cartoon depicting what is</td>
<td>another's intention to deceive.</td>
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<tr>
<td></td>
<td></td>
<td>happening in the story</td>
<td>Containing 1st and 2nd order belief questions and 1st and 2nd</td>
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<td></td>
<td></td>
<td></td>
<td>order deceptions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>Corcoran et al</td>
<td>16 Strange stories</td>
<td>Alongside reality questions, a short passage is presented then followed by a question</td>
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<td>on the subsequent page.</td>
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<tr>
<td>1988</td>
<td>Harpe et al</td>
<td></td>
<td>8 Tonic, 8 physical events – non-TM control.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>Dziebek, Fleck, Kalbe, Rogers, Hassenstab,</td>
<td>17 Movie for the Assessment of Social</td>
<td>15-minute film that deals with four young people (two men</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>et al</td>
<td>Cognition (MASC)</td>
<td>and two women) spending an evening together cooking, having dinner, and</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>playing a board game. Since only two of</td>
<td></td>
<td></td>
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<tr>
<td>2007</td>
<td>Hassenstab, Dziebek, Rogers, Wolf &amp; Convit</td>
<td></td>
<td>the characters already know each other and because of</td>
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<td></td>
<td></td>
<td></td>
<td>different romantic interests between three of them, there are</td>
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<td></td>
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<td>some talent conflicts in the interactions.</td>
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</table>
MRP: Do dysphoric students have an enhanced theory of mind?

<table>
<thead>
<tr>
<th>Measure</th>
<th>Date</th>
<th>Author</th>
<th>Suitable for adults</th>
<th>Suitable for computer</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>2001</td>
<td>Baron-Cohen et al.</td>
<td>Y</td>
<td>Y</td>
<td>Adult version of RME use to measure social-perceptional ToM 36 items of this test are photographic images of different individual's eyes. Participants make a forced-choice decision from four possible answers as to which word accurately describes the state of mind of the individual in the picture. Scores are calculated out of a maximum of 36</td>
</tr>
<tr>
<td>19</td>
<td>2006</td>
<td>Golan, Baron-Cohen, Hill &amp; Rutherford</td>
<td>Y</td>
<td>N</td>
<td>Participants listen to 25 short verbalisations and decide from four words which one best describes how the speaker is feeling</td>
</tr>
<tr>
<td>20</td>
<td>1998</td>
<td>Stone et al</td>
<td>Y</td>
<td>Y</td>
<td>20 items in which the participants are presented with short vignettes each describing a social situation. Participants decide if a character has said something or behaved in a way that is socially awkward. If a character has committed a faux-pas, participants are asked who did or said something socially awkward, why it was awkward, what the motivation behind saying or doing what they did was and how the other character would feel. All participants are asked the control questions. See main body of thesis for a more detailed account.</td>
</tr>
</tbody>
</table>
MRP: Do dysphoric students have an enhanced theory of mind?
Appendix D – Sally-Ann task

Frith (2001) describes the Sally-Ann task, shown in the picture above, as: Sally has a basket with Ann having a box. Sally puts a marble into her basket, and then leaves the vicinity. Whilst she is away, Ann takes the marbles from the basket and puts it into her own box. When Sally returns and wants her marbles – where will she look for the marbles? Whilst the answer seems obvious for most people over four: she will look in her basket as that is where she, falsely, believes the marbles are. However, the marbles are in Ann’s basket, but Sally does not know this as she was not present when Ann moved the marbles.

38 Cartoon of Sally-Ann situation has been reproduced with the kind permission of the artist, Axel Scheffler. See Appendix G – Permissions to measures, licence for Mill Hill and permission to use Sally-Ann cartoon.
MRP: Do dysphoric students have an enhanced theory of mind?
MRP: Do dysphoric students have an enhanced theory of mind?

Appendix E – Table of studies on ToM and dysphoria/depression

<table>
<thead>
<tr>
<th>Authors</th>
<th>Date</th>
<th>Sample</th>
<th>Theory of Mind Measure(s)</th>
<th>Method</th>
<th>Results</th>
<th>Critical appraisal</th>
</tr>
</thead>
</table>
| Inoue, Y., Tonooka, Y., Yamada, K. & Kanba, S. (1) | 2004 | 50 patients with remitted depression (34 unipolar, 16 bipolar) 50 matched healthy controls (previous major depression) | Cartoons | • Participants presented with four pictures and required to put in the correct order  
• Depression measured by Hamilton rating scale (HAM-D; Hamilton, 1960)  
• IQ measured by WAIS-R  
• No speed or anxiety | Patients in symptomatic mood remission had lower second-order false belief abilities than the matched controls  
They concluded that the ToM impairment suggested a decline in skillful social relationships  
No difference between the two groups in age, sex, or IQ. | Only one ToM measure  
They did not include a cognitive assessment and could not assess the deficit in ToM in relation to possible cognitive difficulties  
? small numbers which may have resulted on low power |
| Lee, L., Harkness, K. L., Sabbagh, M. A. & Jacobson, J. A. (2) | 2005 | All women 52 with unipolar clinical depression against 30 non-depressed controls (clinically depressed) | RME (36) | • Presented the RME on a laptop  
• BDI-II, MASQ, Depression assessed using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P; First et al., 1995); Hamilton Rating Scale for Depression Interview (HRSD; Hamilton, 1960b)  
• Controlled for anxiety, IQ was matched but not explored and no speed | Depressed women performed significantly worse on the RME task and this difference remained after controlling for anxiety. They also found that this difference was stronger for the affective symptoms of depression than the somatic.  
The difference remained after controlling for anxiety | Only one ToM measure  
This study was limited by its sample size which resulted in low power for some of the statistical analysis  
Only female  
Homogeneous sample of depressed people |
<table>
<thead>
<tr>
<th>Authors</th>
<th>Date</th>
<th>Sample</th>
<th>Theory of Mind Measure(s)</th>
<th>Method</th>
<th>Results</th>
<th>Critical appraisal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harkness, K. L., Sabbagh, M. A., Jacobson, J. A., Chowdrey, N. K., &amp; Chen, T.</td>
<td>2005</td>
<td>Dysphoria with college students (n = 124)</td>
<td>RME (36)</td>
<td>Paper versions of RME presented BDI-II Reaction time and anxiety controlled for</td>
<td>Found dysphoric college students had enhanced ToM abilities when inferring the mental states of others from pictures of their eye area. Dysphoric students were found to be slower in providing their responses on the RME, but time taken did not mean increased accuracy on the RME. Explored valence and found that dysphoric students had enhanced ToM skills for positive and neutral valence but not for negative valence. With no difference in the pattern for response times being found between the two groups for valence.</td>
<td>Only one ToM measure Initial sample size was small (n = 43) Did not include an IQ measure</td>
</tr>
<tr>
<td>Inoue, Y., Yamada, K. &amp; Kanba, S.</td>
<td>2006</td>
<td>50 patients (both males (m = 28) and females (n=22) Following for one year and observing their outcome, during remission from a major depressive episode</td>
<td>Cartoons</td>
<td>Participants presented with four pictures and required to put in the correct order No speed or IQ As above Inoue et al. (2004) for measures</td>
<td>After the year, patients, who had been found to have a ToM deficit on second-order false beliefs at the start of the observation period, were found to be significantly more likely to relapse than the patients who did not have this deficit.</td>
<td>Follow up study to Inoue et al. (2004) with same limitations Relatively small numbers No speed, anxiety or IQ</td>
</tr>
<tr>
<td>Authors</td>
<td>Date</td>
<td>Sample</td>
<td>Theory of Mind Measure(s)</td>
<td>Method</td>
<td>Results</td>
<td>Critical appraisal</td>
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</tr>
<tr>
<td>Kettle, J. W. L., O'Brien-Simpson, L. &amp; Allen, N. B. (5)</td>
<td>2008</td>
<td>Outpatients with a first-episode of schizophrenia (n = 13), three control groups 1 non-psychotic major depressed outpatients (n = 14), 2 general community (n = 16), 3 undergraduate university students (n = 27).</td>
<td>RME (36)</td>
<td>Participants were presented the RME on a laptop</td>
<td>Depression was measured by Structural Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P; First et al., 1995) No speed, anxiety or IQ</td>
<td>Limited focus on first episode schizophrenia and control groups One ToM measure Small sample size No speed, anxiety or IQ</td>
</tr>
<tr>
<td>Uekermann, J., Channon, S., Lehmkaper, C. &amp; Abdel-Hamid, M. (6)</td>
<td>2008</td>
<td>Executive function, mentalising and humour with 27 in-patients with a diagnosis of major depression against 27 healthy controls (inpatients with major depression diagnosis)</td>
<td>Stories with joke stem and alternative endings were presented</td>
<td>One ToM measure presented BDI IQ was measured No speed no anxiety</td>
<td>Found that the depressed patients showed deficits in humour processing (both affective and cognitive) and these related to their performance for ToM and executive functioning. Concluded their findings indicated depressed individuals have deficits in social cognition.</td>
<td>One ToM measure Relatively small sample size</td>
</tr>
<tr>
<td>Authors</td>
<td>Date</td>
<td>Sample</td>
<td>Theory of Mind Measure(s)</td>
<td>Method</td>
<td>Results</td>
<td>Critical appraisal</td>
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<tr>
<td>Wang, Y., Wang, Y., Chen, S., Zhu, C. &amp; Wang, K. (7)</td>
<td>2008</td>
<td>33 depressed non-psychotic inpatients, 23 psychotic inpatients and 53 healthy controls (major depression)</td>
<td>RME (36)</td>
<td>FPT</td>
<td>Findings showed that both the depressed non-psychotic and the psychotic inpatients performed significantly worse than the healthy controls for the components requiring ToM social-cognitive and social-perception, as well as on the VFT. They concluded by suggesting that there may be similar neurobiological substrate and mechanisms that contribute to schizophrenia and major depression.</td>
<td>Used two ToM measures Possibly adequate numbers to reach power Used first episode depression only which increases the uncertainty of diagnosis. Limited non-ToM cognitive tasks Only behavioural assessment measures were used</td>
</tr>
<tr>
<td>Kanba et al. (8)</td>
<td>2010</td>
<td>Explored ToM abilities over a year period between a group of 50 patients following a major depressive episode (either meeting the DSM-IV criteria for major depressive disorder (n=34) or bipolar (n=16)</td>
<td>Same as Inoue et al. (2004) Cartoons</td>
<td>Beck Depression Inventory (BDI-II; Beck et al., 1996)</td>
<td>Found that for the first-order false belief question there was no significant difference between the two groups, however, for the second-order false belief question individuals in the depressed group performed worse at a statistically significantly level. The results highlighted that individuals in remission from an episode of major depression show a deficit in second-order beliefs.</td>
<td>Same as Inoue et al. (2004) Relatively small numbers</td>
</tr>
<tr>
<td>Authors</td>
<td>Date</td>
<td>Sample</td>
<td>Theory of Mind Measure(s)</td>
<td>Method</td>
<td>Results</td>
<td>Critical appraisal</td>
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<tr>
<td>Zobel et al. (9)</td>
<td>2010</td>
<td>Chronically depressed patients (n=30) compared with healthy matched controls (n=30) (inpatients 27, outpatients 3)</td>
<td>Two cartoon picture tests (Brüne’s cartoon picture story test and Werden &amp; Elkan (WE.EL-test)) to measure ToM.</td>
<td>Assessments of cognitive skills, due to the cognitive deficits associated with depression, using the digit span tests from the Wechsler Memory Scale-Revised (WMS-R; Wechsler et al., 2006) to clarify the relation of ToM to other cognitive abilities.</td>
<td>The results of the study were that the chronically depressed patients were markedly impaired in all ToM and cognitive tasks when compared with the healthy controls. They concluded that chronically depressed patients show significant deficits in &quot;reading&quot; social interactions and that this could be related to deficits in general cognitive skills.</td>
<td>Two cartoon ToM measures used. Relatively small numbers</td>
</tr>
<tr>
<td>Harkness, K. L., Jacobson, J. A., Duong, D. &amp; Sabbagh, M. A. (10)</td>
<td>2010</td>
<td>41 with a previous episode of depression and 52 with no previous history of depression</td>
<td>Mental state decoding task</td>
<td>All participants were screened, using the SCID-I and then presented with the ToM task.</td>
<td>Findings indicated that previously depressed participants performed significantly better on the ToM task than the healthy (never depressed) counterparts. In addition, they found all participants performed worse on the ToM task following the happy mood induction, suggesting that a happy mood could mean that social information is less accurately processed, which they proposed could be a more adaptive approach to social situations. They concluded that their findings indicated that enhanced ToM abilities may be a specific feature of depression in remission.</td>
<td>Relatively small numbers Only one ToM measure</td>
</tr>
<tr>
<td>Authors</td>
<td>Date</td>
<td>Sample</td>
<td>Theory of Mind Measure(s)</td>
<td>Method</td>
<td>Results</td>
<td>Critical appraisal</td>
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<tr>
<td>Wolkenstein et al. (11)</td>
<td>2011</td>
<td>Depressed patients ($n = 24$) (who were assessed using the SCID-I and all met the DSM-IV criteria for major depressive order; American Psychiatric Association, 1994) compared with matched healthy controls ($n = 20$).</td>
<td>ToM assessed using the RME and Movie for the Assessment of Social Cognition (MASC). Cognitive abilities were measured by a battery of tests.</td>
<td>Findings were that patients did not show impaired decoding skills on the RME compared with the controls but did display a significantly poorer performance for reasoning as measured by integrating the contextual information about other people in the MASC.</td>
<td>Relatively small numbers Has more than one ToM measure</td>
<td></td>
</tr>
</tbody>
</table>

8/11 have only one ToM task

7/11 have relative small sample size that may result in low power
Appendix F – Ethical approval from the University Faculty

Blossom Edwards  
Psychology  
Faculty of Arts & Human Sciences  
17 May 2011

Dear Blossom,

Do dysphoric university students have an enhanced accuracy of mental state decoding? – EC/2011/34/AHS Fast-Track

On behalf of the Ethics Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the submitted protocol and supporting documentation.

Date of confirmation of ethical opinion: 17 May 2011.

The final list of documents reviewed by the Committee is as follows:

<table>
<thead>
<tr>
<th>Document</th>
<th>Summary of the project</th>
<th>Detailed protocol for the project</th>
<th>Information sheet for participants</th>
<th>Consent form</th>
<th>Evidence of agreement of collaborators</th>
<th>Copy of questionnaire/schedule</th>
<th>Risk Assessment / Insurance details</th>
</tr>
</thead>
</table>

This opinion is given on the understanding that you will comply with the University’s Ethical Guidelines for Teaching and Research. If the project includes distribution of a survey or questionnaire to members of the University community, researchers are asked to include a statement advising that the project has been reviewed by the University’s Ethics Committee.

The Committee should be notified of any amendments to the protocol, any adverse reactions suffered by research participants, and if the study is terminated earlier than expected with reasons. Please be advised that the Ethics Committee is able to audit research to ensure that researchers are abiding by the University requirements and guidelines.

You are asked to note that a further submission to the Ethics Committee will be required in the event that the study is not completed within five years of the above date.

Please inform me when the research has been completed.

Yours sincerely,

Glenn Moulton  
Secretary, University Ethics Committee  
Registry

cc: Professor S Williamson, Chairman, Ethics Committee
MRP: Do dysphoric students have an enhanced theory of mind?
Appendix G - Permissions to use measures and licence

Permissions to use PHQ-9

Blossom Edwards

14 January 2011

Dear Ms Edwards,

You requested for permission to use form PHQ9 for a study. The copyright for this form is held by Pfizer Inc. We are happy to grant you a licence to use and reproduce these questionnaires. This permission is subject to you using the questionnaire only for the purposes of your discussed project, and you acknowledge that you will not obtain any rights in the intellectual property existing in the questionnaire. When reproducing the questionnaire, please include the following acknowledgement:

"Reproduced with the permission of Pfizer Limited".

Yours sincerely,

Henrik Hannus, MSc
Medical Information Associate

Re: 1-88870316

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MRP: Do dysphoric students have an enhanced theory of mind?

RE: Seeking permission to use the PHQ-9
Donna Burgett [dburgett@regenstrief.org]
Sent: 18 January 2011 21:30
To: Edwards RE Mc ([PGIR] - Psychology)

Hello,

Earlier this summer the PHQ became public domain and is now freely available for use. Copies of the PHQ family of measures, including the GAD-7 are available at the website www.cmcare.org. Also, translations (I have attached the Malayalam version), a bibliography, an instruction manual and other information are also provided on the website. If you have any questions please let me know.

Kind regards,
Donna

Donna Burgett
Administrative Assistant
to Kurt Kroenke, MD
Regenstrief Institute, Inc.
1050 Wishard Blvd., R05
Indianapolis, IN 46202

-----Original Message-----
From: Kurt Kroenke
Sent: Monday, January 17, 2011 8:12 PM
To: dburgett@regenstrief.org
Subject: Re: Seeking permission to use the PHQ-9

Kurt Kroenke, MD
Professor of Medicine, Indiana University Regenstrief Institute, 5th Floor 1050 Wishard Blvd Indianapolis, IN 46202

-----Original Message-----
From: Robert Spitzer [1510010111@medicinenet.com]
Sent: Friday, January 14, 2011 11:54 AM
To: Kurt Kroenke
Subject: Re: Seeking permission to use the PHQ-9

-----Original Message-----
From: P.R.Edwards@Surrey.ac.uk
Sent: Friday, January 14, 2011 9:35 AM
To: rie@london.edu
Subject: Re: Seeking permission to use the PHQ-9

Dear Robert,

I am undertaking my doctoral thesis and would like to seek permission to use the PHQ-9 for the project. The aim of the project is to explore the impact of mood on theory of mind - I have spoken with the Medical Information Centre at Pfizer but felt it was also important to write to yourself.

I look forward to hearing from you.
Best wishes

https://email.surrey.ac.uk/owa/?a=Item&v=IPM,Note&d=RgAAAAAAAAA9ik2mHQ... 14/08/2011

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MRP: Do dysphoric students have an enhanced theory of mind?

RE: Seeking permission to use the PHQ-9

Blossom Edwards
Trainee Clinical Psychologist
Surrey and Borders Partnership NHS Trust
Department of Psychology
University of Surrey
Guildford
GU2 7XX

Save the environment – think before you print.

-----
No virus found in this message,
Checked by AVG – anti-virus tool
Version: 10.0.1191 / Virus Database: 1035/3379 – Release Date: 01/14/11

https://email.surrey.ac.uk/owa/?ae=Item&i=IPM.Note&id=RpAAAAAm%ik2ml4Op...j#8/20i

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RE: Seeking permission to use the MASQ-D30

K.J. Wardenaar [K.J.Wardenaar@lumc.nl]

Sent: 17 December 2010 07:59
To: Edwards PB M (PGR - Psychology)

Dear Blossom,

Thank you for your interest in the MASQ-D30. At the moment, we do not have a computerized version that we can distribute outside our department, but feel free to make a computerized version yourself. For your information, I have included an English paper-and-pencil version of the MASQ-D30 and the scoring manual with this mail.

I would very much like to hear about your findings and experience using the MASQ-D30. If you have any questions, do not hesitate to contact me.

Klaas

Klaas J. Wardenaar
Department of Psychiatry
Leiden University Medical Centre
Postbus 9600
2300 RC Leiden
The Netherlands
Tel: 0031(0)71 - 5262471
Email: k.j.wardenaar@lumc.nl

Save the environment – think before you print.

https://email.surrey.ac.uk/owa/?a=Item&d=4PM.Node&i=8gAAAAAAm?ei=k2m9Qp... 14/08/2011

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MRP: Do dysphoric students have an enhanced theory of mind?

Permissions to use the Strange Stories

Re: Seeking permission to use the adult appropriate strange stories

Sarah White [s.white@uct.ac.uk]
Sent: 11 January 2011 15:18
To: Research FE Ms (PGR - Psychology)

Dear Blossom,

Sorry, I didn’t quite understand, is it the Strange Stories you want to use? If so, you will find the full text in the article of mine you quote below.

With adults, as mentioned in the appendix, you should use the mental state stories, the unlinked sentences (the new questions for the unlinked sentences are a more suitable control task) and the original physical state stories. The latter 2 sets are obviously controls (to different extents) for the mental state condition.

I hope that’s clear – do come back to me if not.

Best wishes,
Sarah.

On 06/01/2011 11:16, F.B.Edwards@surrey.ac.uk wrote:
> Dear Sarah,
> I am currently undertaking my doctoral research for my clinical psychology doctorate and my proposed research is a partial replication of a study by Barkins et al. (2005).
> I have written to Francesca Happe in mid December but have yet to hear from her. Would it be possible for you to help me gain permission to use these?
> Having read your article Revisiting the Strange Stories: Revealing Mentalising Impairments in Autism I am writing to you to seek permission to use the Strange Stories suitable for adults - could you confirm which stories these are? Within the Appendix are the TD stories for adults labelled Mental State Stories?
> Many thanks
> Blossom
> Blossom Edwards
> Trainee Clinical Psychologist
> Surrey and Borders Partnership NHS Trust
> Department of Psychology
> University of Surrey
> Guildford
> GU2 7XJ
> Save the environment - think before you print.

Sarah White, PhD
British Academy Research Fellow
Institute of Cognitive Neuroscience
University College London
17 Queen Square
London WC1N 3AR
CO5 7EI8 (X21184)
https://email.surrey.ac.uk/owa/?ue-bens&I=IPM.Note&pid=8gAAAAAn9aj23nIPq... 14/08/2011

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MRP: Do dysphoric students have an enhanced theory of mind?
Permission to use the Faux-Pas Test

Valerie Stone (vestone@gmail.com)
Sent: 17 December 2010 19:11
To: Edward P.H. (PQR - Psychology)

Hi Blossom,

Yes, of course you can use the Faux Pas test! I will send you the version used in our 2002 paper in Brain, that has 10 faux pas stories, and 10 control stories - I may not send it until next week, because I have to search through an external hard drive, which might take a little while, and I have to run to an appointment in half an hour. I will also send you detailed scoring instructions, and a recent in-press chapter where I discuss scoring issues.

I'm interested - what's your research on, and what population are you going to use it with? I may be biased, but I find any research looking at social cognition in people with brain-based disorders fascinating, so I'd love to hear what you're doing.

All the best,
Valerie

On Fri, Dec 17, 2010 at 8:29 AM, Blossom Edwars wrote:
> Dear Valerie,
> I am a doctoral study at the University of Surrey and was hoping to seek permission to use the Faux pas test.
> Could you please send me an original version - if permission is granted.
> Many thanks
> Blossom
>
> --------
> Sent courtesy of Social Psychology Network
> <http://socialpsychologynetwork.org>
MRP: Do dysphoric students have an enhanced theory of mind?

Permission to use Reading the Mind in the Eyes test

RE: Research [via ARC website]

Edwards PB Ms (PGR - Psychology)
Sent: 06 December 2010 16:02
Tel: Karel Jackson [kjl3@medschl.cam.ac.uk]

Thank you Rachel
best wishes
Blossom

Blossom Edwards
Trainee Clinical Psychologist
Survey and Borders Partnership NHS Trust
Department of Psychology
University of Surrey
Guilford
GU2 7XH

Sent: 06 December 2010 16:02
To: Rachel Jackson [RJ3@medschl.cam.ac.uk]
Subject: RE: Research [via ARC website]

Dear Blossom Edwards,

Thank you for your email. You do not need permission to use any of our tests as they have already been published in peer-reviewed scientific journals - so feel free to use the Reading the Mind in the Eyes Test (RMET), which you can access from the ‘tests’ section of our website at: www.autismresearchcentre.com

There you will find the images, instructions and links giving access to relevant research articles (containing all the background information you should need). Do ensure when you print off the images that you print them on a high-quality colour laserjet, to maintain quality as near to the conditions the test was validated with.

We believe there is also a computerised version created elsewhere on the web at: https://www.g8.com/psych judiciary/Parw/system.web

Good luck with your research.

Best wishes,
Rachel

Rachel Jackson,
Research Administrator,
Autism Research Centre,
Downing House,
18th Tindalton Road,
Cambridge.
CB2 5HA
Tel: 01223 764661
Fax: 01223 764633
Email: RJ3@medschl.cam.ac.uk

Sent: 08 December 2010 16:24
To: Rachel Jackson
Subject: FW: Research [via ARC website]

https://email.surrey.ac.uk/owa/?ae=4&cm=1&PM.NoteId=RpAAAAAm?ai22Eqp... 18/08/2011

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MRP: Do dysphoric students have an enhanced theory of mind?

Begin forwarded message:

From: "ARC" <p.b.edwards@surrey.ac.uk>
Date: 3 December 2010 12:07:21 GMT
To: "Simon Banon- Cohen" <skb265@cam.ac.uk>
Subject: Research [via ARC website]

eMailName:
Blossom Edwards.

Email:
p.b.edwards@surrey.ac.uk

emailMessage:
Dear Simon,
I am currently a Taicnce at Surrey University about to undertake my thesis. I am
wanting to seek permission to use the 2001 revised adult version of the "Reading the
Mind in the Eyes" test.
Also where can I access a computerised version - if there is one available?
Many thanks
Blossom Edwards

https://email.surrey.ac.uk/owa/?ac=items&at=IPM.Notes&id=9gAAAm9ak2mflQp... 18/08/2011
MRP: Do dysphoric students have an enhanced theory of mind?

Permissions to use the Sally-Ann cartoon

To: [Email Address]
From: [Email Address]
Subject: Seeking permission to use the cartoon on the Sally-Ann task

Date: 20/10/2011

Dear [Name],

I am writing to seek permission to use the Sally-Ann cartoon in my research. The cartoon has been used in previous studies on theory of mind and I believe it would be beneficial to include it in my own work.

I would greatly appreciate if you could provide me with the necessary permissions and any relevant information. If you have any questions or concerns, please do not hesitate to contact me.

Thank you for your time and consideration.

Sincerely,

[Your Name]
MRP: Do dysphoric students have an enhanced theory of mind?

Licence for Mill Hill

NAME: Ms Blossom Edwards
("Licensor")

ADDRESS:
3 Nursery Green,
Canterbury,
UK,
CT1 3JW

(Witness: Ms Blossom Edwards, Trainee Clinical Psychologist)

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Appendix H – Stimuli and scoring for the PHQ-9

Over the last 2 weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th></th>
<th>Little interest or pleasure in doing things</th>
<th>Feeling down, depressed, or hopeless</th>
<th>Trouble falling or staying asleep, or sleeping too much</th>
<th>Feeling tired or having little energy</th>
<th>Feeling bad about yourself – or that you are a failure or have let yourself or your family down</th>
<th>Trouble concentrating on things, such as reading the newspaper or watching television</th>
<th>Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual</th>
<th>Thoughts that you would be better off dead, or of hurting yourself in some way</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Not at all</td>
<td>Several days</td>
<td>More than half the days</td>
<td>Nearly every day</td>
<td>Not at all</td>
<td>Several days</td>
<td>More than half the days</td>
<td>Nearly every day</td>
</tr>
<tr>
<td>2.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Step 1: Each item in the column labelled “Several days” should be counted and multiplied by one, this figure should be entered below that column.

Step 2: Each item in the column labelled “More than half the days” should be counted and multiplied by two, this figure should be entered below that column.

Step 3: Each item in the column labelled “Nearly every day” should be counted and multiplied by three, this figure should be entered below that column.

Step 4: All totals for the three columns should be added together. This is the SEVERITY SCORE.

(www.depression-primarycare.org)
MRP: Do dysphoric students have an enhanced theory of mind?
Appendix I - MASQ-D30 stimuli and scoring Instructions

**Instruction:**
This is a list of feelings, problems and experiences that people sometimes have. Read every item and mark the answer, using a “✓”, that describes best to what extent you experienced each feeling **during the past week, including today**.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Quite Strong</th>
<th>Strong</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I felt confused</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I was startled easily</td>
<td></td>
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<td></td>
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<tr>
<td>3</td>
<td>I felt successful</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I felt worthless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I felt nauseous</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I felt really happy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I felt irritable</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I felt dizzy or light-headed</td>
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<tr>
<td>9</td>
<td>I felt optimistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I felt hopeless</td>
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<tr>
<td>11</td>
<td>I felt like I was having a lot of fun</td>
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<td></td>
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<tr>
<td>12</td>
<td>I blamed myself for a lot of things</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>I felt dissatisfied with everything</td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>I felt like I accomplished a lot</td>
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<tr>
<td>15</td>
<td>I was trembling or shaking</td>
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<td>16</td>
<td>I felt like I had a lot to look forward to</td>
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<tr>
<td>17</td>
<td>I felt pessimistic about the future</td>
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<tr>
<td>18</td>
<td>I had pain in my chest</td>
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<tr>
<td>19</td>
<td>I felt really talkative</td>
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<tr>
<td>20</td>
<td>I had hot or cold spells</td>
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<tr>
<td>21</td>
<td>I was short of breath</td>
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<tr>
<td>22</td>
<td>I felt really ‘up’ or lively</td>
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<td>23</td>
<td>I felt inferior to others</td>
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<tr>
<td>24</td>
<td>My muscles were tense or sore</td>
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<tr>
<td>25</td>
<td>I had trouble making decisions</td>
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<tr>
<td>26</td>
<td>I felt like I had a lot of energy</td>
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<tr>
<td>27</td>
<td>My heart was racing or pounding</td>
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<tr>
<td>28</td>
<td>I worried a lot about things</td>
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<tr>
<td>29</td>
<td>I felt really good about myself</td>
<td></td>
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<tr>
<td>30</td>
<td>I had trouble swallowing</td>
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</tbody>
</table>
MRP: Do dysphoric students have an enhanced theory of mind?

Table 1: the numbers of the MASQ-D30/MASQ items that form the 3 MASQ-D30 subscales

<table>
<thead>
<tr>
<th>MASQ-D30 Subscale</th>
<th>MASQ-D30 items</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Distress (GD)</td>
<td>1, 4, 7, 10, 12, 13, 17, 23, 25, 28</td>
</tr>
<tr>
<td>Anhedonic Depression (AD)</td>
<td>3, 6, 9, 11, 14, 16, 19, 22, 26, 29</td>
</tr>
<tr>
<td>Anxious Arousal (AA)</td>
<td>3, 5, 8, 15, 18, 20, 21, 24, 27, 30</td>
</tr>
</tbody>
</table>

The 3 scales are computed by adding the responses on the items listed in each of the cells in column 2 of Table 1 above. For the AA the items in column two were added up, each item had a score from 1 to 5, giving a maximum score of 50.
MRP: Do dysphoric students have an enhanced theory of mind?

Appendix J – Reading the Mind in the Eyes

Reading the mind in the eyes

Instructions

For each pair of eyes, choose which word best describes what the person in the picture is thinking or feeling. Please select an answer for each pair of eyes. Even if you think you don’t have a clue, just choose the one that seems right.

1. 
   - playful
   - comforting
   - intimated
   - bored

2. 
   - terrified
   - upset
   - amogint
   - annoyed

3. 
   - joking
   - flustered
   - desire
   - convinced

4. 
   - joking
   - inquiring
   - amused
   - relieved

5. 
   - intimated
   - sarcastic
   - worried
   - friendly

6. 
   - afraid
   - tantalizing
   - impatient
   - alarmed
MRP: Do dysphoric students have an enhanced theory of mind?
MRP: Do dysphoric students have an enhanced theory of mind?
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| 31 | ashamed | confident | joking | despised |
| 32 | serious  | ashamed   | bewildered | alarmed |
| 33 | embarrassed | guilty | fantasizing | concerned |
| 34 | aghast   | baffled   | distrustful | terrified |
| 35 | puzzled  | nervous  | insisting  | contemplative |
| 36 | ashamed  | nervous  | suspicious | indecisive |
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Appendix K - Strange Stories stimuli and scoring key

Simon is a big liar. Simon's brother Jim knows this, he knows that
(1) Simon never tells the truth! Now yesterday Simon stole Jim's
ping-pong paddle, and Jim knows that Simon has hidden it
somewhere, though he can't find it. He's very cross. So he finds
Simon and he says, "Where is my ping-pong paddle? You must
have hidden it either in the cupboard of under your bed?" Simon tells
him the paddle is under his bed.

Q: Why will Jim look in the cupboard for the paddle?

Scoring key
2 points – reference to Jim knowing Simon lies
1 point – reference to fact (that's where it really is, Simon's a big liar)
or Simon hiding it without reference to implications of lying
0 points – reference to general nonspecific information (because he
looked everywhere else)

(2) During the war, the Red army captures a member of the Blue
army. They want him to tell them where the army's tanks are; they
are either by the sea or in the mountains. They know that the
prisoner will not want to tell them, he will want to save his army, and
so he will certainly lie to them. The prisoner is very brave and very
clever, he will not let them find his tanks are really in the mountains.
Now when the other side asks him where his tanks are, he says,
"They are really in the mountains."

Q: Why did the prisoner say that?
Scoring key
2 points – reference to fact that other army will not believe and hence look in other place, reference to prisoner’s realisation that that’s what they’ll do, or reference to double bluff
1 point – reference to outcome (to save his army’s tanks) or to mislead them
0 points – reference to motivation that misses the point of double bluff (he was scared)

(3) Brian is always hungry. Today at school it is his favourite meal – sausages and beans. He is a very greedy boy, and he would like to have more sausages than anybody else, even though his mother will have made him a lovely meal when he gets home! But everyone is allowed two sausages and not more. When it is Brian’s turn to be served, he says, “Oh, please can I have four sausages, because I won’t be having any dinner when I get home!”

Q: Why does Brian say this?

Scoring key
2 points – reference to fact that he’s trying to elicit sympathy, being deceptive
1 point – reference to his state (greedy), outcome (to get more sausages) or factually incorrect
0 points – reference to general nonspecific information

(4) Jill wanted to buy a kitten, so she went to see Mrs. Smith, who had lots of kittens she didn’t want. Now Mrs. Smith loved the kittens, and she wouldn’t do anything to harm them, though she couldn’t keep them all herself. When Jill visited she wasn’t sure she wanted one of Mrs. Smith’s kittens, since they were all males and she had
MRP: Do dysphoric students have an enhanced theory of mind?

wanted a female. But Mrs. Smith said, "If no one buys the kittens I'll just have to drown them!"

Q: Why did Mrs. Smith say that?

Scoring key
2 points – reference to persuasion, manipulating feelings, trying to induce guilt/pity
1 point – reference to outcome (to sell them or get rid of them in a way which implies not drowning) simple motivation (to make Jill sad)
0 points – reference to general knowledge or dilemma without realisation that the statement was not true (she’s a horrible woman)

(5) One day Aunt Jane came to visit Peter. Now Peter loves his aunt very much, but today she is wearing a new hat; a new hat which Peter thinks is very ugly indeed. Peter thinks that his aunt looks silly in it, and much nicer in her old hat. But when Aunt Jane asks Peter, "How do you like my new hat?", Peter says, “Oh, it’s very nice.”

Q: Why does he say that?

Scoring key
2 points – reference to white lie or wanting to spare her feelings; some implication that this is for aunt’s benefit rather than just for his, desire to avoid rudeness or insult
1 point – reference to trait (he’s a nice boy) or relationship (he likes his aunt); purely motivational (so she won’t shout at him) with no reference to aunt’s thoughts or feelings; incomplete explanation (he’s lying, he’s pretending)
0 points – reference to irrelevant or incorrect facts/feelings (he likes the hat, he wants to trick her)
MRP: Do dysphoric students have an enhanced theory of mind?

(6) Helen waited all year for Christmas, because she knew at Christmas she could ask her parents for a rabbit. Helen wanted a rabbit more than anything in the world. At last Christmas day arrived, and Helen ran to unwrap the big box her parents had given her. She felt sure it would contain a little rabbit in a cage. But when she opened it, with all the family standing round she found her present was just a boring old set of encyclopaedias, which Helen did not want at all! Still, when Helen's parents asked her how she liked her Christmas present, she said, "It's lovely, thank you. It's just what I wanted."

Q: Why did she say this?

Scoring key
2 points – reference to white lie or wanting to spare their feelings; some implication that this is for parents' benefit rather than just for her, desire to avoid rudeness or insult
1 point – reference to trait (she's a nice girl) or relationship (she likes her parents); purely motivational (so they won't shout at her) with no reference to parents' thoughts or feelings; incomplete explanation (she's lying, she's pretending)
0 points – reference to irrelevant or incorrect facts/feelings (she like the present, she wants to trick them)

(7) Late one night old Mrs. Peabody is walking home. She doesn't like walking home alone in the dark because she is always afraid that someone will attack her and rob her. She really is a very nervous person! Suddenly, out of the shadows comes a man. He wants to ask Mrs. Peabody what time it is, so he walks toward her. When Mrs. Peabody sees the man coming towards her, she starts to tremble and says, "Take my purse, just don't hurt me please!"

Q: Why did she say that?
Scoring key
2 points – reference to her belief that he was going to mug her or her ignorance of his real intention
1 point – reference to her trait (she's nervous) or state (she's scared) or intention (so he wouldn't hurt her) without suggestion that fear was unnecessary
0 points – factually incorrect/irrelevant answers; reference to the man actually intending to attack her

(8) A burglar who has just robbed a shop is making his getaway. As he is running home, a policeman on his beat sees him drop his glove. He doesn't know the man is a burglar he just wants to tell him he dropped his glove. But when the policeman shouts out to the burglar, "Hey, you! Stop!", the burglar turns round, sees the policeman and gives himself up. He puts his hands up and admits that he did the break-in at the local shop.

Q: Why did the burglar do that?

Scoring key
2 points – reference to the belief that the policeman knew that he'd burgled the shop
1 point – reference to something factually correct in story
0 points – factually incorrect/irrelevant answers.
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Appendix L – Stimuli and scoring for the faux-pas task

1. Stephanie is a three-year-old girl with a round face and short blonde hair. She was at her Aunt Jane's house. The doorbell rang and her Aunt Jane answered it. It was Mary, a neighbour, who decided to drop over for a chat. "Hi," Aunt Jane said, "Nice of you to drop over." Mary said, "Hello," then looked at Stephanie and said, "Oh, I don't think I've met this little boy. What's your name?"

a) Did anyone say something they shouldn't have said or something awkward?

<table>
<thead>
<tr>
<th>If yes, ask:</th>
<th>If no, ask:</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Who said something they shouldn't have said or something awkward?</td>
<td>Who was the first person in the story to say something?</td>
</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person/people she spoke to react to what Aunt Jane said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) Did Mary know that Stephanie was a girl?</td>
<td>Did Mary know that Stephanie was a girl?</td>
</tr>
<tr>
<td>f) How do you think Stephanie felt?</td>
<td>How do you think Stephanie felt?</td>
</tr>
</tbody>
</table>
MRP: Do dysphoric students have an enhanced theory of mind?

g) In the story, where was Stephanie?
h) Why did Mary come for a visit?

2. Jim was shopping for a shirt to match his suit. The salesman showed him several shirts. Jim looked at them and finally found one that was the right colour. But when he went to the dressing room and tried it on, it didn't fit. "I'm afraid it's too small," he said to the salesman. "Not to worry," the salesman said. "We'll get some in next week in a larger size." "Great. I'll just come back then," Jim said.

a) Did anyone say something they shouldn't have said or something awkward?

<table>
<thead>
<tr>
<th>If yes, ask:</th>
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</thead>
<tbody>
<tr>
<td>b) Who said something they shouldn't have said or something awkward?</td>
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<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person he spoke to react to what Jim said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) When he tried on the shirt, did Jim know they didn't have it in his size?</td>
<td>When he tried on the shirt, did Jim know they didn't have it in his size?</td>
</tr>
<tr>
<td>f) How do you think Jim felt?</td>
<td>How do you think Jim felt?</td>
</tr>
</tbody>
</table>

g) In the story, what was Jim shopping for?
h) Why was he going to come back next week?

3. Helen's husband was throwing a surprise party for her birthday. He invited Sarah, a friend of Helen's, and told her not to tell anyone, especially Helen. The day before the party, Helen was over at Sarah's house and Sarah spilt some coffee on a new dress that was hanging over a chair. "Oh!" said Sarah, "I was going to wear this to your party!" "What party?" asked Helen. "Come on," said Sarah, "Let's go and see if we can get this stain out."

a) Did anyone say something they shouldn't have said or something awkward?

<table>
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<tr>
<th>If yes, ask:</th>
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<tbody>
<tr>
<td>b) Who said something they shouldn't have said or something awkward?</td>
<td>Who was the first person in the story to say something?</td>
</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person she spoke to react to what Sarah said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) Did Sarah remember that the party was a surprise party?</td>
<td>Did Sarah remember that the party was a surprise party?</td>
</tr>
<tr>
<td>f) How do you think Helen felt?</td>
<td>How do you think Helen felt?</td>
</tr>
</tbody>
</table>

g) In the story, what got spilled on the dress?
h) Why did Sarah buy a new dress?
4. Kim's cousin, Terence, was coming to visit and Kim made an apple pie especially for him. After dinner, she said, "I made a pie just for you. It's in the kitchen." "Mmmm, delicious" replied Terence, "I love pies! Oh... except for apple pies - I hate those."

a) Did anyone say something they shouldn't have said or something awkward?

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<tbody>
<tr>
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<td>Who was the first person in the story to say something?</td>
</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person she spoke to react to what Kim said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) Did Terence know it was an apple pie?</td>
<td>Did Terence know it was an apple pie?</td>
</tr>
<tr>
<td>f) How do you think Kim felt?</td>
<td>How do you think Kim felt?</td>
</tr>
</tbody>
</table>

g) In the story, why did Kim make a pie?
h) How did Kim and Terence know each other?

5. Rachel took her dog, Zack, out to the park. She threw a stick for him to chase. When they had been there a while, Pam, a neighbour
of hers, came by. They chatted for a few minutes. Then Pam asked, "Are you heading home? Would you like to walk together?" "Sure," Rachel said. She called Zack, but he was busy chasing pigeons and didn't come. "It looks like he's not ready to go," she said. "I think we'll stay." "OK," Pam said. "I'll see you later."

a) Did anyone say something they shouldn't have said or something awkward?

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</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person she spoke to react to what Pam said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) When she invited her, did Pam know that Rachel wouldn't be able to walk home with her?</td>
<td>When she invited her, did Pam know that Rachel wouldn't be able to walk home with her?</td>
</tr>
<tr>
<td>f) How do you think Pam felt?</td>
<td>How do you think Pam felt?</td>
</tr>
</tbody>
</table>

g) In the story, where had Rachel taken Zack?

h) Why didn't she walk with her friend Pam?
6. Joe was at the library. He found the book he wanted about hiking in New Zealand and went up to the front counter to check it out. When he looked in his wallet, he discovered he had left his library card at home. "I'm sorry," he said to the woman behind the counter. "I seem to have left my library card at home." "That's OK," she answered. "Tell me your name, and if we have you in the computer, you can check out the book just by showing me your driver's licence."

a) Did anyone say something they shouldn't have said or something awkward?

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</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person he spoke to react to what Joe said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) When Joe went into the library, did he realise he didn't have his library card?</td>
<td>When Joe went into the library, did he realise he didn't have his library card?</td>
</tr>
<tr>
<td>f) How do you think Joe felt?</td>
<td>How do you think Joe felt?</td>
</tr>
</tbody>
</table>

g) In the story, what book did Joe get at the library?

h) How was he going to be able to check out his book?
7. Anne bought her friend, Jeanette, a crystal bowl for a wedding gift. Jeanette had a big wedding and there were a lot of presents to keep track of. About a year later, Anne was over at Jeanette's house one night for dinner. Anne accidentally dropped a wine bottle on the crystal bowl and the bowl shattered. "I'm really sorry. I've broken your bowl," said Anne. "Don't worry," said Jeanette. "I never liked it anyway. Someone gave it to me for a wedding present."

a) Did anyone say something they shouldn't have said or something awkward?

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<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person she spoke to react to what Anne said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) Did Jeanette remember that Anne had given her the bowl?</td>
<td>Did Jeanette remember that Anne had given her the bowl?</td>
</tr>
<tr>
<td>f) How do you think Anne felt?</td>
<td>How do you think Anne felt?</td>
</tr>
</tbody>
</table>

g) In the story, why was Anne over at Janette's house?

h) How did the bowl get broken?
8. Mike, a nine-year-old boy, just started at a new school. He was in one of the cubicles in the toilets at school. Joe and Peter, two other boys, came in and were standing at the basins talking. Joe said, "You know that new guy in the class? His name’s Mike. Doesn’t he look weird? And he’s so short!" “Yeah,” said Peter. Mike came out of the toilet cubicle and Joe and Peter saw him. Peter said, "Oh hi, Mike! Are you going out to play football now?"

a) Did anyone say something they shouldn't have said or something awkward?

<table>
<thead>
<tr>
<th>If yes, ask:</th>
<th>If no, ask:</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Who said something they shouldn't have said or something awkward?</td>
<td>Who was the first person in the story to say something?</td>
</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person/people he spoke to react to what Joe said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) When Joe was talking to Peter, did he know that Mike was in one of the cubicles?</td>
<td>When Joe was talking to Peter, did he know that Mike was in one of the cubicles?</td>
</tr>
<tr>
<td>f) How do you think Mike felt?</td>
<td>How do you think Mike felt?</td>
</tr>
</tbody>
</table>

g) In the story, where were Joe and Peter talking?

h) Why were Joe and Peter talking about Mike?
9. Elaine was waiting at the bus stop. The bus was late and she had been standing there for a long time. She was 65 and it made her tired to stand for so long. When the bus finally came, it was crowded and there were no seats left. She saw a neighbour, Paul, standing in the aisle of the bus. "Hello, Elaine," he said. "Were you waiting at the bus stop for long?" "About 20 minutes," she replied. A young man who was sitting down got up. "Ma'am, would you like my seat?"

a) Did anyone say something they shouldn't have said or something awkward?

<table>
<thead>
<tr>
<th>If yes, ask:</th>
<th>If no, ask:</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Who said something they shouldn't have said or something awkward?</td>
<td>Who was the first person in the story to say something?</td>
</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person/people he spoke to react to what Paul said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) When Elaine first got on the bus, did Paul know how long she had been waiting?</td>
<td>When Elaine got on the bus, did Paul know how long she had been waiting?</td>
</tr>
<tr>
<td>f) How do you think Elaine felt?</td>
<td>How do you think Elaine felt?</td>
</tr>
</tbody>
</table>

g) In the story, were there any vacant seats on the bus when Elaine got on?

h) Why was she waiting at the bus stop for 20 minutes?
10. Tom was having dinner in a restaurant and spilt some coffee on the floor by accident. "Excuse me," he said to a nearby waiter, "Sorry but I've spilt some coffee on the floor." That's OK, I'll get you another cup of coffee," said the waiter. The waiter was gone for a while. Adam was another customer in the restaurant, and was wearing black pants and a white shirt. He was standing near the cashier waiting to pay his bill. Tom went up to Adam and said, "I spilt some coffee over near my table. Can you come and clean it up?"

a) Did anyone say something they shouldn't have said or something awkward?

<table>
<thead>
<tr>
<th><strong>If yes, ask:</strong></th>
<th><strong>If no, ask:</strong></th>
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</thead>
<tbody>
<tr>
<td>b) Who said something they shouldn't have said or something awkward?</td>
<td>Who was the first person in the story to say something?</td>
</tr>
<tr>
<td>c) Why shouldn't he/she have said it or why was it awkward?</td>
<td>How did the person he spoke to react to what Tom said?</td>
</tr>
<tr>
<td>d) Why do you think he/she said it?</td>
<td>Why do you think he/she said it?</td>
</tr>
<tr>
<td>e) Did Tom know that Adam was another customer?</td>
<td>Did Tom know that Adam was another customer?</td>
</tr>
<tr>
<td>f) How do you think Adam felt?</td>
<td>How do you think Adam felt?</td>
</tr>
</tbody>
</table>

g) In the story, what did Tom spill?

h) Why was Adam standing near the cashier?
MRP: Do dysphoric students have an enhanced theory of mind?

Appendix M – Mill Hill Stimuli

Synonyms
In each group below, carefully select the word that is closest in meaning to the word in bold above the group. If you are not sure of the answer have a guess. The first one has been done for you as an example. Work through all the groups of words.

1. Rage
   a. Crease
   b. Invite
   c. Rain
   d. Love
   e. Anger
   f. Hoist

2. Squabble
   a. Saw
   b. Bubble
   c. Mould
   d. Lift
   e. Photo
   f. Quarrel

3. Connect
   a. Join
   b. Lace
   c. Flint
   d. Field
   e. Bean
   f. Accident

4. Provided
   a. Harmonise
   b. Hurt
   c. Annoy
   d. Divide
   e. Commit
   f. Supply

5. Brag
   a. Choose
   b. Hope
   c. Lag
   d. Boast
   e. Stone
   f. Jerk

6. Shrivels
   a. Linger
   b. Volunteer
   c. Shiver
   d. Heed
   e. Wither
   f. Haunt

7. Mingle
   a. Interfere
   b. Mix
   c. Gamble
   d. Press
   e. Declare
   f. Remark

8. Stance
   a. Partition
   b. Glance
   c. Flint
   d. Fixed
   e. Slope
   f. Grief

9. Verify
   a. Dedicate
   b. Chastise
   c. Correct
   d. Confirm
   e. Change
   f. Purify

10. Formidable
    a. Unexpired
    b. Feasible
    c. Tremendous
    d. Ravishing
    e. Orderly
    f. Remembrance

11. Thrive
    a. Think
    b. Trash
    c. Blame
    d. Try
    e. Reap
    f. Flourish

12. Docile
    a. Meek
    b. Dominant
    c. Careless
    d. Passionate
    e. Homely
    f. Dumb

13. Virile
    a. Demanding
    b. Concise
    c. Vulgar
    d. Passionate
    e. Manly
    f. Barbarous

14. Virile
    a. Mountain
    b. Concealed
    c. Appease
    d. Overcome
    e. Descend
    f. Snub

15. Sultry
    a. Instinctive
    b. Sulky
    c. Trivial
    d. Solid
    e. Severe
    f. Muggy

16. Criterion
    a. Superior
    b. Certitude
    c. Clarion
    d. Critic
    e. Standard
    f. Crisis

17. Latent
    a. Delayed
    b. Potential
    c. Ingenious
    d. Discharged
    e. Overburdened
    f. Hostile

18. Dwindle
    a. Swindle
    b. Linger
    c. Diminish
    d. Pander
    e. Wheeze
    f. Compare

19. Conclude
    a. Prophesy
    b. Contradict
    c. Scatter
    d. Interpret
    e. Collect
    f. Ancestral

20. Efface
    a. Delete
    b. Disguise
    c. Adjoin
    d. Rotate
    e. Mark
    f. Ascend

---

39 Ravens Progressive Matrices Mill Hill Vocabulary Scale (MHV) All Multiple Choice Form Copyright © (1998) by Pearson, Assessment Copyright ©(2011) by Pearson, Assessment, Reproduced with permission. All rights reserved.

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### MRP: Do dysphoric students have an enhanced theory of mind?

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>b. Worthless</td>
<td>b. Alleviate</td>
<td>b. Conclave</td>
</tr>
<tr>
<td>c. Amusement</td>
<td>c. Stimulate</td>
<td>c. Cunning</td>
</tr>
<tr>
<td>d. Heraldry</td>
<td>d. Qualify</td>
<td>d. Succour</td>
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<tr>
<td>e. Highest</td>
<td>e. Imitate</td>
<td>e. Conjunction</td>
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<tr>
<th>22. Perpetrate</th>
<th>27. Adulate</th>
<th>32. Exiguous</th>
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<tbody>
<tr>
<td>a. Appropriate</td>
<td>a. Increase</td>
<td>a. Exhausting</td>
</tr>
<tr>
<td>b. Propitiate</td>
<td>b. Admire</td>
<td>b. Indigenous</td>
</tr>
<tr>
<td>c. Commit</td>
<td>c. Flatter</td>
<td>c. Scanty</td>
</tr>
<tr>
<td>d. Control</td>
<td>d. Waver</td>
<td>d. Prodigious</td>
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<tr>
<td>e. Deface</td>
<td>e. Prosper</td>
<td>e. Esoteric</td>
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<tr>
<td>f. Pierce</td>
<td>f. Inflate</td>
<td>f. Expedient</td>
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<tbody>
<tr>
<td>a. Scowl</td>
<td>a. Sincere</td>
<td>a. Punishable</td>
</tr>
<tr>
<td>b. Disguise</td>
<td>b. Valedictory</td>
<td>b. Supposed</td>
</tr>
<tr>
<td>c. Aerate</td>
<td>c. Voracious</td>
<td>c. Aggressive</td>
</tr>
<tr>
<td>d. Shine</td>
<td>d. Faithful</td>
<td>d. Computable</td>
</tr>
<tr>
<td>e. Gloat</td>
<td>e. Altruistic</td>
<td>e. Worthless</td>
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<tr>
<td>f. Extinguish</td>
<td>f. Opportune</td>
<td>f. Reconcilable</td>
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</thead>
<tbody>
<tr>
<td>b. Necessary</td>
<td>b. Armature</td>
<td>b. Enumerate</td>
</tr>
<tr>
<td>c. Rational</td>
<td>c. Camber</td>
<td>c. Accomplish</td>
</tr>
<tr>
<td>d. Careful</td>
<td>d. Confines</td>
<td>d. Liberate</td>
</tr>
<tr>
<td>e. Crucial</td>
<td>e. Arc</td>
<td>e. Emanate</td>
</tr>
<tr>
<td>f. Carnal</td>
<td>f. Ideal</td>
<td>f. Permit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>25. Obdurate</th>
<th>30. Recondite</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Formidable</td>
<td>a. Brilliant</td>
<td></td>
</tr>
<tr>
<td>b. Hastiant</td>
<td>b. Vindictive</td>
<td></td>
</tr>
<tr>
<td>c. Exorbitant</td>
<td>c. Indifferent</td>
<td></td>
</tr>
<tr>
<td>d. Permanent</td>
<td>d. Effervescent</td>
<td></td>
</tr>
<tr>
<td>e. Stubborn</td>
<td>e. Abstruse</td>
<td></td>
</tr>
<tr>
<td>f. Obsolete</td>
<td>f. Wise</td>
<td></td>
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</tbody>
</table>
MRP: Do dysphoric students have an enhanced theory of mind?

Set B
The first one has been done for you. Work through the groups of words.

### MRP: Do dysphoric students have an enhanced theory of mind?

21. **Whim**
   - a. Complain
   - b. Tonic
   - c. Wind
   - d. Noise
   - e. Fancy
   - f. Rush

22. **Ruse**
   - a. Limb
   - b. Trick
   - c. Colour
   - d. Paste
   - e. Burn
   - f. Rude

23. **Recumbent**
   - a. Fugitive
   - b. Unwieldy
   - c. Penitent
   - d. Cumbersome
   - e. Repelling
   - f. Reclining

24. **Querulous**
   - a. Astringent
   - b. Petulant
   - c. Inquiring
   - d. Fearful
   - e. Curious
   - f. Spurious

25. **Tenuity**
   - a. Impermanence
   - b. Nervousness
   - c. Punctuality
   - d. Rashness
   - e. Stability
   - f. Submissiveness

26. **Fecund**
   - a. Esculent
   - b. Profound
   - c. Sublime
   - d. Optative
   - e. Prolific
   - f. Salic

27. **Abnegate**
   - a. Contradict
   - b. Renounce
   - c. Belie
   - d. Decry
   - e. Execute
   - f. Assemble

28. **Traduce**
   - a. Challenge
   - b. Suspend
   - c. Misrepresent
   - d. Attenuate
   - e. Establish
   - f. Conclude

29. **Vagary**
   - a. Vagabond
   - b. Obscurity
   - c. Evasion
   - d. Caprice
   - e. Vulgarly
   - f. Fallacy

30. **Specious**
   - a. Fallacious
   - b. Palatial
   - c. Nutritious
   - d. Coeval
   - e. Typical
   - f. Flexible

31. **Sedulous**
   - a. Rebellious
   - b. Complaisant
   - c. Seductive
   - d. Dilatory
   - e. Diligent
   - f. Credulous

32. **Nugatory**
   - a. Inimitable
   - b. Sublime
   - c. Numismatic
   - d. Adamant
   - e. Contrary
   - f. Trifling

33. **Adumbrate**
   - a. Foreshadow
   - b. Detect
   - c. Elaborate
   - d. Protect
   - e. Eradicate
   - f. Approach

34. **Minatory**
   - a. Impeccable
   - b. Belittling
   - c. Depository
   - d. Diminutive
   - e. Quirescent
   - f. Threatening

---

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Appendix N – Invitation e-mail for the survey

Online survey with prize draw

Strauss C Dr (Psychology)

Sent: 07 April 2011 09:32
To: Auto list for all UG - Faculty - FAHS - Level All
Cc: Edwards PB Ms (PG/R - Psychology), Warren FM Dr (Psychology)

Dear Student,

If you are an undergraduate student
I need you!

Please could you spare 30 – 45 minutes to complete an online survey about facial and social cues. As a thank-you for completing the survey, there is the opportunity to win a £25 Amazon voucher (terms and conditions apply, you must provide your address at the end of the survey for the opportunity of voucher to be sent to you)

Your participation is completely voluntary and responses will not be linked to any personal information making the process anonymous. Please click the link below to access the survey and for further information (if you have any problems with the link please copy it and paste it in the address bar).

http://www.fahs.surrey.ac.uk/survey/Cues/

Thank you in advance
Blossom

Blossom Edwards
Trainee Clinical Psychologist
Please feel free to contact me:
Tel: 01483 689441 (this number takes you to Charlotte King who will take a message for me to ring you back)
e-mail: p.b.edwards@surrey.ac.uk

Address:
Department of Psychology
University of Surrey
Guildford
GU2 7XH

If you are currently experiencing any emotional difficulties please seek support from the university wellbeing centre, your GP or contact one of the following services who can help you through a difficult time.
MRP: Do dysphoric students have an enhanced theory of mind?

NHS Direct: 0845 4647
website: www.nhsdirect.nhs.uk
For health advice and reassurance, 24 hours a day, 365 days a year.

Samaritans: 08457 909090
e-mail: jo@samaritans.org
website: http://www.samaritans.org
address: Chris, P. O. Box 9090, Stirling FK8 2SA
Samaritans provides confidential non-judgemental emotional support, 24 hours a
day for people who are experiencing feelings of distress or despair, including those
which could lead to suicide.

SANE: 0845 767 8000
e-mail: sanemail@sane.org.uk
website: www.sane.org.uk
SANE provides care and support for people with mental health problems, their
families and carers as well as information for other organisations and the public.

Blossom Edwards
Trainee Clinical Psychologist

Surrey and Borders Partnership NHS Trust
Department of Psychology
University of Surrey
Guildford
GU2 7XH

Save the environment - think before you print
MRP: Do dysphoric students have an enhanced theory of mind?

Appendix O - Pdf screen shots of the on line survey including information page, demographic questionnaire, consent, standardised debriefing.

Information page

Facial and social cues study

Participant information sheet

Dear Participant,

You are being invited to take part in a research study. Your participation in this study is completely voluntary and you have no obligation to take part. It is important for you to understand why the research is being undertaken and what is involved before you decide whether or not to take part in this study. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is unclear, or if you would like more information please ask the researcher. Once you have read through the information please consider whether or not you would like to take part in the study. If you choose to take part can you please work through the questions as quickly as you can as I am hoping to look at both accuracy and speed many thanks.

What is the purpose of the study?
I am investigating the effects of mood on our ability to identify emotions in others and the motive for actions of others. The aim of the current study is to look at how we pick up on what others are thinking and feeling and how our own mood may impact on this. Greater knowledge will hopefully help us to improve psychological therapies for people who may be experiencing difficulties with their mood in relation to others.

Why have you been asked to take part in this study?
This current study is building upon research based on university students in the United States. You are being asked to participate in the study because you are a student at a British university.

Who is organising the study?
I am conducting this study with my supervisors Dr Fiona Warren and Dr Clara Strauss as part of my doctorate training in Clinical Psychology.

Who has given ethical approval for this study?
The University of Surrey Faculty of Arts and Human Sciences Ethics Committee has reviewed and approved this project.

What will happen to you if you chose to take part?
You will be given a set of questionnaires to complete. These questionnaires ask about how you are feeling, to estimate other people’s moods , and to answer questions on a series of brief stories. The study will take about 30-45minutes to complete. There will be a debrief page at the end of the study that will include the researchers details and, if you are experiencing any distress, signposts about where to seek appropriate support from if you feel it is required.

What are the possible benefits and risks of taking part?

Benefits
You are unlikely to benefit directly from taking part in the study. However, you can choose to be entered into a draw to win a £50 Amazon voucher.

Risks
It is possible, although we would estimate unlikely if you are in good health, that you may feel a little tired after completing the questionnaires. The questionnaires ask general questions about your mood. Whilst it
MRP: Do dysphoric students have an enhanced theory of mind?

is not the intention, and we would consider it unlikely that this will be upsetting. It is possible you could experience some upsetting feelings. You may wish to consider arranging to have a friend to meet up with afterwards. We supply some suggestions for sources of further support for you in the event that you felt that you require it.

Confidentiality
All data will be anonymised such that the answers to the questionnaires cannot be linked with the individual who completed them. If you choose to be entered into the prize draw and supply your details, these will be kept separately from your answersheet. All of the data and documentation relating to this study will be kept in a locked filing cabinet and only those researchers directly involved in the research will have access to the data.

What will happen to the results of the study?
The results of the study will be published in the University Library and it is hoped that they will also be publishable within an academic journal. As above, you will not identifiable within any publication.

Who do I need to speak to if I decide to withdraw from the study or if I want more information?
You are under no obligation to take part in the study and you do not have to give a reason. If you need to talk to someone, or have any questions about the study, please leave a message for Blossom Edwards at the University of Surrey on 01483 689441.

If you have any concerns about your mood or have thoughts about harming yourself, please contact your GP, the university Well-being centre, or one of the support organisations on the following page.

To take part in this research please complete the consent form (if you wish to be entered for the prize draw please give your address on the consent form) followed by the questionnaires.

Many thanks
Blossom Edwards
Demographic questionnaire

Thank you very much for agreeing to take part in my research and complete these questionnaires. This is about how you understand peoples' motivations and actions. It is for a piece of research being undertaken here at the University of Surrey. It requires you to answer a number of multiple choice questions and some short answer questions, requiring a few words, and should take about 10 minutes to complete. Your answers will be anonymous and subsequently will be stored entirely securely and confidentially. You are not required to provide your name but the following details are important for our data, we will not use them to contact you in the future or pass them on to anyone else.

Your Gender:
- [ ] Male
- [ ] Female

Your age in years:

Which of the following ethnic group do you feel best describes you?
- [ ] British
- [ ] Black
- [ ] African, Caribbean or African, Other
- [ ] Any other black background
- [ ] White and Black Caribbean
- [ ] White and Black African
- [ ] White and Asian
- [ ] Any other mixed background
- [ ] Indian
- [ ] Pakistani
- [ ] Bangladesh
- [ ] Any other Asian background
- [ ] Any other ethnic background

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MRP: Do dysphoric students have an enhanced theory of mind?

**Ethnicity:**
- 12. Caribbean
- 13. African
- 14. Any other black background
- 15. Chinese
- 16. Any other ethnic category
- 17. Not stated

**Employment:**
- Employment=1 Employed
- Employment=2 Self-employed
- Employment=3 Unemployed
- Employment=4 Studying full time
- Employment=5 Studying part time

**Education level:**
- Education=1 Secondary school/college to age 16
- Education=2 Secondary school/college to age 18
- Education=3 Vocational work based training to age 16
- Education=4 Vocational work based training to age 18
- Education=5 University degree
- Education=6 University postgraduate studies (e.g. Masters)
- Education=7 University doctoral level studies (e.g. PhD)
MRP: Do dysphoric students have an enhanced theory of mind?

Signposting page at the beginning of the survey

This provided guidance to seek support from their GP if the participant was in distress or another source, such as the university well-being centre.

Advice support sheet

If you are currently experiencing any emotional difficulties please seek support from your GP or contact one of the following services who can help you through a difficult time.

Other avenues of support
Contact numbers and websites for further support, if required:

NHS Direct: 0845 4647
website: http://www.nhsdirect.nhs.uk
For health advice and reassurance, 24 hours a day, 365 days a year.

Samaritans: 0845 7909090
e-mail: info@samaritans.org
website: http://www.samaritans.org
address: Chris, P. O. Box 9090, Stirling FK8 2SA
Samaritans provides confidential non-judgemental emotional support, 24 hours a day for people who are experiencing feelings of distress or despair, including those which could lead to suicide.

SANE: 0845 767 8000
e-mail: saneemail@sane.org.uk
website: http://www.sane.org.uk
SANE provides care and support for people with mental health problems, their families and carers as well as information for other organisations and the public.
MRP: Do dysphoric students have an enhanced theory of mind?

Consent

I have read and understood the information provided. I have been given a full explanation of the purpose of the research project and what is involved in participating.

I have been given the opportunity to ask questions on all aspects of the study and have understood the information given as a result.

I consent to my personal data, as outlined in the preceding information, being used for the research project and agree that data collected may be shared with other researchers. I understand that all personal data relating to participants is held in the strictest confidence, and in accordance with the Data Protection Act (1998).

I understand that I can change my mind and am free to withdraw from the study at any time without needing to justify my reason for doing so.

By choosing "Yes" below and then clicking on "Next" at the bottom of this page, you are signifying that you understand the information above and freely consent to participating in this study.

If at any point in the questionnaires, you no longer wish to take part, then simply close the browser window.

Do you agree to continue?

☑️ Yes

☑️ No
Standardised debriefing

Thank you for your time and co-operation

Previous research has shown that for some people experiencing low mood can have an impact on their ability to understand the emotions, motives and actions of others. Research has demonstrated differing results that our ability to understand the emotions and actions of others can be either adversely impacted or enhanced depending on what level of low mood is being experienced. Additionally, research has shown differing results about IQ and the impact on the development of low mood. Therefore, this study has invited a cross section of university undergraduate students to take part in this study with the aim being to explore what effect if any their mood state and IQ has on their ability to understand the emotional states, motivations and actions of others. The results of the study may lead to advancements in our understanding that our mood states may impact on the quality of our social interactions and could help inform developments in psychological therapies.

As all the data within this study is anonymous it is not designed to diagnose low mood or any other mental health problems or give individual IQ scores. Some people may have found that the questions they were asked during this survey triggered off difficult thoughts and feelings. For those people it is possible that they may feel a little unsettled for a short while having focused on these thoughts throughout the study. However, if you continue to feel distressed, please consider seeking help from your GP, the university wellbeing centre or from contacting one of the services listed below who can also offer support.

If you have any questions, want to know about the results or feel that you have experienced any difficulties completing the questionnaires then please contact Blossom Edwards on p.e.edwards@surrey.ac.uk.

NHS Direct: 0845 4647
website: http://www.nhsdirect.nhs.uk
For health advice and reassurance, 24 hours a day, 365 days a year.

Samaritans: 08457 909090
e-mail: info@samaritans.org
website: http://www.samaritans.org
address: Chris, P. O. Box 9090, Stirling FK8 2SA
Samaritans provides confidential non-judgemental emotional support, 24 hours a day for people who are experiencing feelings of distress or despair, including those which could lead to suicide.

SANE: 0845 767 8000
e-mail: saneemail@sane.org.uk
website: http://www.sane.org.uk

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Appendix P – Testing for normality

**Skewness**

<table>
<thead>
<tr>
<th></th>
<th>Statistic</th>
<th>Std. Error</th>
<th>Skewness statistic/std. error</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhQ-9 total scores</td>
<td>1.248</td>
<td>.211</td>
<td>5.915</td>
</tr>
<tr>
<td>RME percentage correct</td>
<td>.037</td>
<td>.211</td>
<td>0.175*</td>
</tr>
<tr>
<td>FPT percentage correct</td>
<td>-1.715</td>
<td>.211</td>
<td>-8.128</td>
</tr>
<tr>
<td>SS percentage correct</td>
<td>-.905</td>
<td>.211</td>
<td>-4.289</td>
</tr>
<tr>
<td>Positive valence (RME)</td>
<td>-.730</td>
<td>.211</td>
<td>-3.460</td>
</tr>
<tr>
<td>Neutral valence (RME)</td>
<td>-.448</td>
<td>.211</td>
<td>2.123</td>
</tr>
<tr>
<td>Negative valence (RME)</td>
<td>-.096</td>
<td>.211</td>
<td>-4.550</td>
</tr>
<tr>
<td>Speed (RME)</td>
<td>7.528</td>
<td>.211</td>
<td>35.678</td>
</tr>
<tr>
<td>Anxiety Arousal</td>
<td>1.276</td>
<td>.211</td>
<td>6.047</td>
</tr>
<tr>
<td>IQ (Mill Hill)</td>
<td>.261</td>
<td>.211</td>
<td>1.237*</td>
</tr>
</tbody>
</table>

*IQ (Mill Hill) and RME at 1.96 p< .05 (Field, 2009) indicate the skewness of the data meets the criteria for normality. However, the rest of the data does not meet the assumption for normality. This means that the assumptions for parametric tests are violated.

**Kurtosis**

<table>
<thead>
<tr>
<th></th>
<th>Statistic</th>
<th>Std. Error</th>
<th>Kurtosis statistic/std. error</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhQ-9 total scores</td>
<td>1.469</td>
<td>.419</td>
<td>3.501</td>
</tr>
<tr>
<td>RME percentage correct</td>
<td>-.140</td>
<td>.419</td>
<td>-0.334*</td>
</tr>
<tr>
<td>FPT percentage correct</td>
<td>3.370</td>
<td>.419</td>
<td>8.043</td>
</tr>
<tr>
<td>SS percentage correct</td>
<td>.793</td>
<td>.419</td>
<td>1.892*</td>
</tr>
<tr>
<td>Positive valence (RME)</td>
<td>.279</td>
<td>.419</td>
<td>0.666</td>
</tr>
<tr>
<td>Neutral valence (RME)</td>
<td>.573</td>
<td>.419</td>
<td>1.368</td>
</tr>
<tr>
<td>Negative valence (RME)</td>
<td>-.414</td>
<td>.419</td>
<td>0.989</td>
</tr>
<tr>
<td>RME speed</td>
<td>63.945</td>
<td>.419</td>
<td>152.613</td>
</tr>
<tr>
<td>Anxiety Arousal</td>
<td>1.109</td>
<td>.419</td>
<td>2.647</td>
</tr>
<tr>
<td>IQ (Mill Hill)</td>
<td>-.630</td>
<td>.419</td>
<td>-1.504*</td>
</tr>
</tbody>
</table>

*IQ (Mill Hill), RME, and SS at 1.96 p< .05 (Field, 2009) indicate the kurtosis of the data meets the criteria for normality. However, the rest of the data does not meet the assumption for normality. This means that the assumptions for parametric tests are violated.
MRP: Do dysphoric students have an enhanced theory of mind?

*Test of Goodness of Fit (Normality)*

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Statistic</th>
<th>Df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhQ-9 total scores</td>
<td>.893</td>
<td>132</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>RME percentage correct</td>
<td>.987</td>
<td>132</td>
<td>.250*</td>
</tr>
<tr>
<td>FPT percentage correct</td>
<td>.820</td>
<td>132</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>SS percentage correct</td>
<td>.925</td>
<td>132</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Positive valence</td>
<td>.909</td>
<td>132</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Neutral valence</td>
<td>.961</td>
<td>132</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Negative valence</td>
<td>.956</td>
<td>132</td>
<td>.001</td>
</tr>
<tr>
<td>RME speed</td>
<td>.272</td>
<td>132</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>AA</td>
<td>.860</td>
<td>132</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>MH</td>
<td>.967</td>
<td>132</td>
<td>.003</td>
</tr>
</tbody>
</table>

*The Shapiro-Wilk result for RME percentage correct is indicative of normal distribution D (132) = .07, p < .05.*
Appendix Q - Homogeneity of variance: Levene’s test results

<table>
<thead>
<tr>
<th>Test of Homogeneity of Variance</th>
<th>Levene Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RME % correct</td>
<td>3.669</td>
<td>1,130</td>
<td>.058</td>
</tr>
<tr>
<td>FPT % correct</td>
<td>3.482</td>
<td>1,130</td>
<td>.064</td>
</tr>
<tr>
<td>SS % correct</td>
<td>2.888</td>
<td>1,130</td>
<td>.092</td>
</tr>
<tr>
<td>Positive valence % correct</td>
<td>.053</td>
<td>1,130</td>
<td>.819</td>
</tr>
<tr>
<td>Neutral valence % correct</td>
<td>.449</td>
<td>1,130</td>
<td>.504</td>
</tr>
<tr>
<td>Negative valence % correct</td>
<td>.940</td>
<td>1,130</td>
<td>.334</td>
</tr>
<tr>
<td>RME speed</td>
<td>.961</td>
<td>1,130</td>
<td>.329</td>
</tr>
<tr>
<td>AA</td>
<td>6.240</td>
<td>1,130</td>
<td>.014</td>
</tr>
<tr>
<td>MH</td>
<td>.138</td>
<td>1,130</td>
<td>.711</td>
</tr>
</tbody>
</table>

Variance was not significantly different equal for non-dysphoric and dysphoric students on all the measures with the exception of AA, (RME % correct, $F(1, 130) = 1.447, p = .231$), (FPT % correct, $F(1, 130) = 0.370, p = .544$), (SS % correct, $F(1, 130) = 0.401, p = .527$), (Positive valence, $F(1, 130) = 0.401, p = .527$), (Neutral valence % correct, $F(1, 130) = 0.401, p = .527$), (Negative valence % correct, $F(1, 130) = 0.401, p = .527$), (RME speed % correct, $F(1, 130) = 0.401, p = .527$), (AA, $F(1, 130) = 0.138, p = .711$), (MH, $F(1, 130) = 0.017, p = .895$).
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Appendix R – Box plots for the two groups

Key:
1.0 – Non-dysphoric group
2.0 – Dysphoric group

Box plot 1: Reading the Mind in the Eyes (RME) percentage correct
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**Box plot 2: Faux Pas Test (FPT) percentage correct for the two groups**

![Box plot showing FPT percentage correct for two groups with PHQ 9-10 cutoffs.]

**Box plot 3: Strange Stories (SS) percentage correct for the two groups**

![Box plot showing SS percentage correct for two groups with PHQ 9-10 cutoffs.]

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**Box plot 4: Mean speed for the Reading the Mind in the Eyes for the two groups**

**Box plot 5: Negative valence percentage correct for both groups**
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Box plot 6: Positive valence percentage correct for both groups

Box plot 7: Neutral valence percentage correct for both groups

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*Box plot 8: Mill Hill IQ scores for both groups*

![Box plot showing Mill Hill IQ scores for both groups](image)

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