### **Doctoral Thesis**

The Role of Shame, Schemas, Cognitions, Paranoia and Memories in Social Anxiety Following Psychosis: A Comparison with Typical Social Anxiety

Submission Date: 1st June 2012

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#### Abstract

**Objectives.** This study aimed to investigate the nature of social anxiety in psychosis through comparison with individuals with social anxiety without psychosis. Extending the work of Lockett (2011), it explored factors associated with both cognitive models of social anxiety (Clark & Wells, 1995; Rapee & Heimberg, 1997) and models of social anxiety in psychosis (Birchwood et al., 2006; Lockett, 2011).

**Methods.** The study employed a quantitative cross-sectional design to compare participants with social anxiety and psychosis (SAp group, n = 30) with participants with social anxiety and no psychosis (SA group, n = 35) on measures of shame, socially anxious cognitions, schemas and paranoia. A semi-structured interview elicited images and memories experienced in social situations. A self-report measure compared the groups in relation to trauma symptoms associated with reported memories.

Results. Participants in the SAp group experienced significantly higher levels of shame, negative self-schemas and PTSD symptoms than participants in the SA group. There were no significant differences between the groups on measures of socially anxious cognitions, negative otherschemas and self/other focus of memories. Participants in both groups scored highly for paranoia, with the scores for the SAp group being significantly higher. When the sample was split based on level of paranoia (regardless of psychosis), paranoid participants had significantly higher scores for shame, negative self and other schemas, depression and PTSD. Data suggested paranoid participants are more likely to experience images associated with memories focused on threatening others.

Conclusions. The findings suggested two possible pathways to the development of social anxiety. Paranoia may differentiate social anxiety as part of complex emotional dysfunction from social anxiety as conceptualised within existing cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997). A number of limitations are discussed to enable a balanced interpretation of the study findings. These included the small sample size; characteristics of the participants, particularly the number of students in the SA group; and the violation of parametric assumptions in the data for depression and negative schemas. Clinical implications are discussed, including the need for thorough assessment of paranoia, trauma and shame and the importance of the therapeutic relationship and assertive engagement of complex clients.

#### 1 Introduction

### 1.1 Overview

A substantial body of research has explored social anxiety (SA), and a number of psychological models have been developed that seek to explain its development and maintenance (e.g., Clark & Wells, 1995; Rapee & Heimberg, 2007). Rates of SA are higher following psychosis than in the general population (Pallanti, Quercioli, & Hollander, 2004), and SA in psychosis is associated with significant social disability even when psychotic symptoms have been successfully treated (Lysaker & Hamersley, 2006; Michail & Birchwood, 2009). This thesis seeks to investigate the phenomenology of SA in psychosis through comparison with SA in individuals without psychosis. It will focus on shame, schemas, cognitions and paranoia. The thesis will also explore whether SA in psychosis is triggered by different memories from SA in participants without psychosis and whether those memories are more likely to be traumatic. Furthering understanding in this area may have implications for formulating the SA of individuals with psychosis and may add to the empirical basis for the development of psychological interventions.

This chapter will begin by exploring SA, with a focus on cognitive models of its maintenance (Clark & Wells, 1995; Rapee & Heimberg, 1997) and associated cognitions and beliefs. The application of these models to the treatment of SA will then be considered. In the psychosis section, cognitive models of symptom development and maintenance (Garety, Kuipers, Fowler, Freeman, & Bebbington, 2001; Morrison, 2001) will be explored as well as stress-vulnerability models (e.g., Ciompi, 1988; Strauss & Carpenter, 1981)

of the development of psychosis. The relationship between cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997) of SA and cognitive models of psychosis (Garety et al., 2001; Morrison, 2001) will be discussed as this is important in considering the nature of SA comorbid with psychosis. In order to develop an understanding of the range of factors hypothesised to relate to SA in psychosis, this introduction will also give an overview of psychological theories and research related to shame, and the relationship between images, memories and traumatic events as they apply to SA, psychosis and SA in psychosis. Research exploring the nature of SA in psychosis will then be reviewed before discussing the rationale for the current study, its research questions and hypotheses.

# 1.2 Social Anxiety Disorder

### 1.2.1 Definition of social anxiety disorder.

The terms SA and social phobia have often been used interchangeably (e.g., Spurr & Stopa, 2002; Wells, 1997). In order to maximise recruitment for the current research, participants were selected based on self-reported symptoms or difficulties associated with social phobia, but a formal diagnosis was not required. Not all individuals with clinically significant anxiety in social situations receive a diagnosis (Bruce & Saeed, 1999), but the screening measure used in the current study (Social Interaction Anxiety Scale, Mattick & Clarke, 1989) was designed in accordance with DSM-III-R criteria for Generalised Social Phobia (American Psychiatric Association [APA], 1987). The term SA will be used to describe the features associated with the psychological models discussed below and with the criteria used to diagnose social phobia.

The *Diagnostic and Statistical Manual of Mental Disorders* (4<sup>th</sup> ed., text revision, DSM-IV-TR; [APA], 2000) defined social phobia as 'a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing'. Diagnostic criteria have also required that exposure to the feared situations consistently provokes anxiety and that they are either avoided or endured with significant distress; the person recognises that the fear is excessive or unreasonable; and that there is significant interference with the person's normal routine, occupational/academic functioning, or social activities or relationships, or there is marked distress about having the phobia (p.456).

SA is one of the most common psychiatric disorders. Kessler et al. (2005) investigated lifetime prevalence and age-of-onset distributions of *DSM-IV* disorders in the United States. lifetime prevalence of SA was estimated at 12.1%, the second highest prevalence of any anxiety disorder (specific phobias were estimated at 12.5%). The highest rates were observed in people under the age of 45 years (Kessler et al., 2005). In a study exploring the long-term course of anxiety disorders, Bruce et al. (2005) found that, when compared to panic disorder and generalised anxiety disorder, SA had the poorest rate of recovery (37%) after 12 years of followup, and medication did not predict recovery. However, only 39% of those individuals who did recover had a further episode within the 12 year followup, compared with a recurrence rate of 45% and 57% respectively for generalised anxiety disorder and panic disorder. Results indicated that

individuals with SA were more likely than patients recovering from other anxiety disorders to stay well, which suggested potential benefits for effective psychological treatments.

Bruce and colleagues (2005) explored the impact of comorbid anxiety disorders, depression and substance use disorders on recovery from SA, but a history of schizophrenia or a current psychotic episode were exclusion criteria for the study. Similarly, Kessler and colleagues (2005) did not include psychosis in their analyses of comorbidity. In order to compare the nature of SA in participants with and without psychosis, it is important to understand psychological models that aim to formulate how and why the symptoms described in diagnostic criteria for SA develop and are maintained. These models of SA are considered below.

# 1.2.2 Psychological models of social anxiety disorder.

In order to establish which psychological models of SA are currently the most influential in relation to research and treatment models, a search of the literature was performed. Full details of the search strategy and results can be found in Appendix A. Clark and Wells' (1995) cognitive model and Rapee and Heimberg's (1997) cognitive-behavioural model will be considered in detail below, being the most influential models in current psychological theory.

#### 1.2.2.1 Clark and Wells' (2005) cognitive model of social phobia.

Clark and Wells (1995) suggested that individuals with SA hold negative beliefs or schemas about themselves and others. In social situations, assumptions linked to these beliefs are activated in the form of negative predictions regarding their own social performance and others'

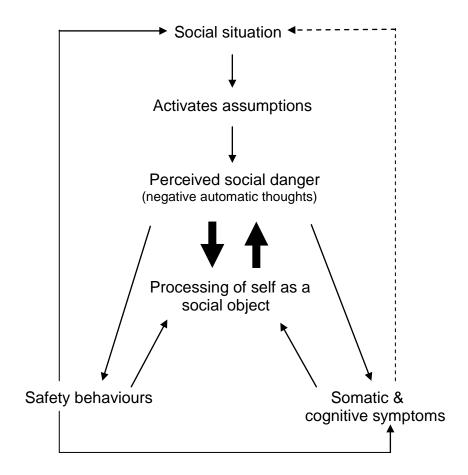
propensity to judge negatively. A desire to be judged favourably by others is thus combined with beliefs that make this seem unachievable. This leads to a perception of threat which manifests as anticipatory worry and negative automatic thoughts. Negative automatic thoughts are associated with somatic and cognitive symptoms of anxiety which the individual then interprets as evidence of failure and social humiliation (Clark & Wells, 1995; Wells, 1997).

Central to the model is a hypothesised shift in attention such that appraisals of danger trigger increased self-observation and self-monitoring (Bögels & Mansell, 2004; Spurr & Stopa, 2002; Wells & Papageorgiou, 1998). The individual then makes inferences regarding how they appear to others and how others are evaluating them, and these often take the form of an image of the self as it would appear to an observer (Coles, Turk, Heimberg, & Fresco, 2001; Hackmann, Surawy, & Clark, 1998; Wells & Papageorgiou, 1999). This results in an information processing bias such that individuals are unaware of evidence from the environment and others' responses that would enable a more accurate evaluation of the situation (Clark & McManus, 2002; Hirsch & Matthews, 2000; Wells & Papageorgiou, 1998). As the self-image is largely based on interoceptive information resulting from heightened physiological anxiety, self-focus confirms the individual's fears of performance failure (Shultz & Heimberg, 2008). In addition, Clark and Wells (1995) suggested that an internal focus reduces ability to process information relevant to the required social tasks, impacting on social performance and making the feared outcomes more likely. It also biases post-event processing such that individuals have a distorted

perception of their performance, confirming negative schemas and increasing sense of threat in future social situations (Brozovich & Heimberg, 2008; Clark & Wells, 1995; Schultz & Heimberg, 2008).

Clark and Wells (1995) suggested that symptoms of SA are maintained by safety behaviours which are attempts to avoid negative evaluation either by concealing perceived inadequacies and symptoms of anxiety or by avoiding attention. These behaviours maintain SA by increasing self-focused attention and somatic symptoms, drawing attention to the self, and impacting negatively on social performance (Wells et al., 1995). If the social situation is avoided completely, the individual is prevented from experiencing opportunities which may disconfirm negative beliefs. A schematic representation of the model is shown in Figure 1.1.

Figure 1.1 Clark and Wells' (1995) Model of Social Phobia



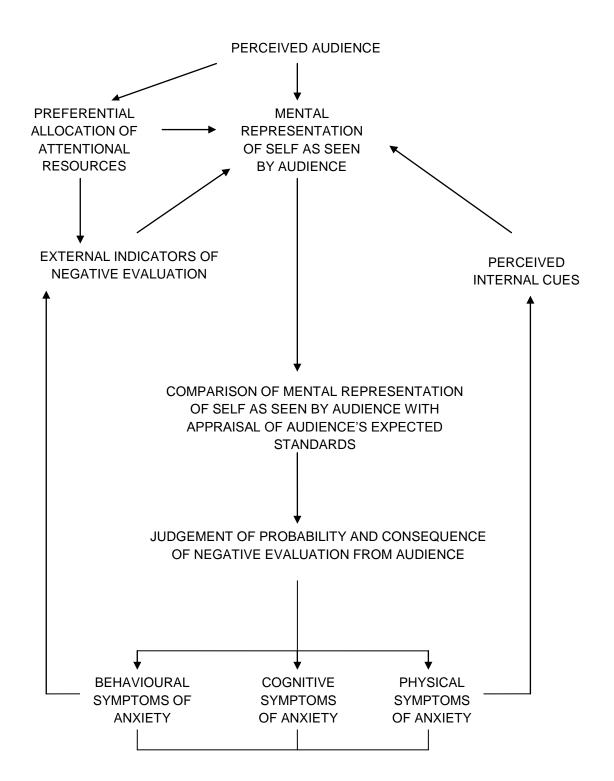
# 1.2.2.2 Rapee and Heimberg's (1997) cognitive-behavioural model of social phobia.

Rapee and Heimberg (1997) conceptualised the key threat in SA as the perception of an audience. Evaluation by others is seen to be threatening because individuals with SA have a desire to be appraised positively but assume that others are inherently critical (Leary, 2001). Similarly to Clark and Wells (1995), Rapee and Heimberg suggested that individuals form a mental representation of their own appearance and behaviour as it would be seen by an audience. Their attention is then focused both on this

representation and on monitoring of the social environment for perceived threat in the form of negative evaluation (Heinrichs & Hofmann, 2001). This is in keeping with evolutionary models which have highlighted the role of threat detection in self-protection (Öhman, 1986; Trower & Gilbert, 1989). As such, the individual constructs a perception of their own performance and the reactions of others and compares this against the critical standards assumed to be employed by the audience. The discrepancy between the perceived standard and the perceived appraisal determines the prediction of negative evaluation and associated consequences (Alden, Bieling, & Wallace, 1994; Hoffman, 2007). This results in physiological, cognitive, and behavioural manifestations of anxiety which feed back into the representation of the self. A schematic representation of the model is shown in Figure 1.2.

Figure 1.2

Rapee & Heimberg's (1997) Cognitive-Behavioural Model of Social Phobia



Rapee and Heimberg (1997) clarified that the proposed mental representation of the self is not likely to be experienced as a static 'photograph' but is a distorted amalgamation of information stored in long-term memory (based on actual images of the self, feedback from others, and previous experiences) which is then continually modified based on internal cues processed through self-monitoring of behaviour and physiological symptoms of anxiety and external cues from the 'audience'. Such cues are likely to be subject to a negative processing bias, feeding back into a distorted self-image (Heimberg & Becker, 2002; Roth & Heimberg, 2001; Turk, Lerner, Heimberg, & Rapee, 2001).

Both Clark and Wells (1995) and Rapee and Heimberg's (1997) cognitive models agreed that pre-existing negative beliefs about the self and others are important in the initial detection of social threat, in informing the construction of the self-image, evaluating this image against the perception of the standards of others and predicting the consequences of their perceived inadequacy. The role of cognitions and beliefs in the development and maintenance of SA will be briefly considered in the next section.

# 1.2.3 Research and theory exploring cognitions and beliefs in social anxiety disorder.

In the Clark and Wells (1995) model, dysfunctional beliefs and assumptions lead to a vulnerability to SA and are activated by social situations. Beck and colleagues (Beck, 1967; Beck & Clark, 1997; Beck & Emery, 1985) suggested that dysfunctional assumptions impact on the person's behaviour and interpretations such that their underlying negative core beliefs or schemas appear to be confirmed. Wells and Clark (1997)

suggested that schemas may influence the pattern of onset of SA such that negative self and other beliefs linked to childhood experiences may be related to the earlier emergence of SA. Conditional assumptions related to rules for social behaviour may trigger SA in a previously high-functioning individual when there is a perceived failure to meet their own standards.

The role of pre-existing core beliefs or schemas in SA has been supported by research evidence. Pinto-Gouveia, Castilho, Galhardo, and Cunha (2006) found that participants with SA were more likely to endorse personal failure schemas than those with other anxiety disorders and nonclinical participants. In addition, Wenzel (2004) asked socially anxious and non-clinical participants to create scripts for social and evaluative scenarios. SA participants created scripts that were more negative in tone and more closely linked to anxiety. Wenzel suggested that this is reflective of underlying maladaptive schemas, but there was no direct assessment of participants' beliefs and the sample size was insufficient to determine whether there were significant differences between the groups. However, a study by Coles et al. (2001) suggested support for the role of a relationship between negative schemas and SA. They found that the attributions of socially anxious participants regarding their performance and nervousness became more internal, stable and global as the level of anxiety provoked by the situation increased. Non-socially anxious participants showed the opposite pattern – i.e. they attributed negative outcomes externally in highanxiety situations. The findings of Wilson and Rapee (2006) suggested further support for the role of negative self-beliefs. They found that SA was associated with lower positive belief and higher negative belief ratings of own personality characteristics. However, the relationship with higher negative belief ratings did not remain significant when controlling for depression, which suggested that negative self-beliefs may convey a vulnerability to more general psychopathology rather than being specific to SA. Wilson and Rapee also found that socially anxious participants displayed greater uncertainty in their self-ratings. They suggested that this may contribute to socially anxious individuals placing importance on the evaluations of others, heightening fears of negative evaluation.

Fear of negative evaluation has been suggested to be the central focus of negative automatic thoughts maintaining SA and linked to the underlying beliefs and assumptions discussed above (Clark & Wells, 1995; Rapee & Heimberg, 1997). The fear of negative evaluation has been found to be associated with greater striving for approval from others (Leary, 1983a; Watson & Friend, 1969) and avoidance of potentially threatening social comparison (Friend & Gilbert, 1973) and has been shown to be related to SA (Leary, 1983b; Watson & Friend, 1969). As such, measures of the fear of negative evaluation have often been used to assess SA (Leary, 1983a; Watson and Friend, 1969). In addition to cognitions associated with fear of negative evaluation, there has been some support for the role of paranoid cognitions in SA. This will be briefly discussed below, as these beliefs are a factor of interest in the current research.

# 1.2.4 Paranoid beliefs and social anxiety.

There is evidence for the role of paranoid beliefs in SA in the nonpsychotic population. Martin and Penn (2001) found that higher levels of paranoid ideation were associated with depression, SA and avoidance, fear of negative evaluation, self-monitoring and lower self-esteem in a non-clinical sample. However, it is not possible to establish whether SA in this sample developed as a result of paranoid beliefs, or whether paranoid beliefs were formed in the context of SA and avoidance.

Research has found that paranoid thoughts are relatively common in the general population (e.g., Freeman, 2007; Green et al., 2008), and it has been suggested that both paranoia and SA develop in the context of dysfunctional beliefs (Fowler et al., 2006; Pinto-Gouveia et al., 2006) and common anxious thoughts related to fear of rejection and negative evaluation (Freeman et al., 2005a, 2005b).

Freeman and colleagues (2005a, 2005b) suggested that SA occurs at the lower levels of a hierarchy of social-evaluative concerns with paranoid delusions at the highest level. However, other studies have found that SA is not always related to paranoid beliefs (Freeman et al., 2008; Michail & Birchwood, 2009), and this issue warrants further investigation. The nature of paranoia will be considered further in the psychosis section (see section 1.3.4). This chapter will now give an overview of psychological interventions for SA as the relevance of these approaches to SA in psychosis will need to be evaluated based on the extent to which cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) prove useful in formulating SA in individuals with psychosis. The current research aims to contribute to the empirical foundations of this issue.

### 1.2.5 Psychological interventions for social anxiety disorder.

Psychological models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) suggest that therapeutic interventions should target information

processing biases, behavioural responses that maintain anxiety, management of physiological symptoms of anxiety, and negative beliefs about the self and others. Specifically, Hoffman and Otto (2008) suggested that CBT should address high social standards, negative self-perception, self-focused attention, high estimated probability and cost of negative social consequences, and perceived poor social skills. To this end, therapeutic interventions have largely focused on exposure, cognitive restructuring, relaxation, and social skills training (Heimberg, 2002).

Research trials and meta-analyses have suggested that CBT is effective in the treatment of SA. For example, Clark and colleagues (2003) found that cognitive therapy for SA was more effective than medication alone, and McEvoy and Perini (2009) found significant improvements in SA with group CBT. Overall, the outcomes of meta-analyses (Federoff & Taylor, 2001; Feske & Chambless, 1995; Gould, Buckminster, Pollack, Otto, & Yap, 1997; Taylor, 1996) have suggested that both exposure and exposure combined with cognitive restructuring reduce symptoms of SA but that the addition of cognitive restructuring does not improve outcomes. However, social skills training and cognitive restructuring alone have also yielded positive results, as did relaxation techniques (Federoff & Taylor, 2001). All variations of CBT were found to be more effective than no treatment. Taylor (1996) reviewed studies comparing CBT with a placebo and found that only exposure combined with cognitive restructuring was more effective.

Despite seemingly positive outcomes for CBT for SA, Clark and colleagues (2003) highlighted that a significant number fail to benefit from treatment. Beck (2005a) and Wells and McMillan (2004) emphasised the

importance of understanding underlying cognitive factors maintaining an individual's SA, and interventions that are explicitly based on cognitive models (e.g., Clark & Wells, 1995) have been shown to be effective in previously treatment-resistant patients (Bates & Clark, 2002; Bowers & Yates, 1992). A treatment protocol derived from Clark and Wells' model (Clark and Wells, 1995; Wells, 1997) produced larger treatment effects in a single-case series than previous studies of CBT for SA (Wells and Papageorgiou, 2001). A subsequent randomised controlled trial found the treatment to be more effective than either a placebo or fluoxetine combined with exposure therapy (Clark et al., 2003). This suggested that CBT incorporating all aspects of the cognitive model is superior to a purely behavioural intervention and the most commonly used pharmacological treatment for SA (Wells & McMillan, 2004).

More recent studies have aimed to evaluate the efficacy of individual techniques in targeting aspects of the Clark and Wells (1995) model.

McManus and colleagues (2009) evaluated the effect of an initial session constructing a collaborative formulation based on the Clark and Wells model followed by two single sessions involving behavioural experiments aiming to demonstrate the model. The first behavioural experiment involved comparison of self-rated anxiety and performance when participants focused on themselves and used safety behaviours versus an external focus and no safety behaviours condition. The second behavioural experiment involved video feedback and comparison of predicted self-ratings with how participants actually appeared in a social interaction. Results suggested that both experiments reduced symptoms of SA.

### **1.2.6 Summary.**

The social anxiety disorder section gave an overview of SA and discussed the two most currently influential psychological models. It also explored research and theory on cognitions and beliefs in SA and how this relates to cognitive models of the disorder (Clark & Wells, 1995; Rapee & Heimberg, 1997). The core aspects of SA were identified as negative self and other beliefs which are activated by social situations, leading to cognitive biases; negative automatic thoughts; safety behaviours and avoidance; and an observer perspective negative self-image.

Both Clark and Wells (1995) and Rapee and Heimberg (1997) highlighted the role of feared negative evaluation in SA. This is based on a desire to be judged favourably and a perception of one's own poor performance and others' tendency to judge critically. Both models suggested that the perception of social threat leads to information processing biases which confirm existing negative beliefs about the self and others and impact on evaluation of threat in the current situation.

There is a discrepancy between the models regarding whether negative self-images develop wholly as the result of an increase in self-focused attention (Clark & Wells, 1995) or whether they are the product of increased attention to both internal and external threat (Rapee & Heimberg, 1997). According to the latter model, the individual with SA is hypervigilant to external threat cues and will monitor the reactions of others and is likely to interpret these in a way that confirms fears of negative evaluation. This suggested that attentional biases are directed to both perceived internal and external threats. In the Clark and Wells model, the allocation of attentional

resources to processing of the self as a social object prevents observation of actual responses from others such that individuals with SA assume that others see them as they see themselves in the image. In either case, the self-image is likely to be distorted and appear to confirm beliefs about personal failure and the likelihood of negative evaluation from others.

This section also explored the role of beliefs in SA in relation to paranoia and then examined evidence on the efficacy of psychological interventions for SA and the implications of cognitive models (e.g., Clark & Wells, 1995) for treatment protocols. Research has suggested that treatment for SA is most effective when it explicitly targets aspects of the Clark and Wells (1995) model. Recent cognitive behavioural interventions that have specifically addressed the negative observer-focused self-image central to both the Clark and Wells and Rapee and Heimberg (1997) models will be considered in section 1.5.4.

This chapter will now consider the nature of psychosis, since this is also a focus of the thesis. It will explore psychological theories of the development and maintenance of psychotic disorders, and the role of cognitions and beliefs in psychosis. The relationship between cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997) of SA and theories of psychosis will also be discussed in preparation for consideration of the nature of SA in psychosis.

### 1.3 Psychosis

### 1.3.1 Definition of psychosis.

'Psychosis' does not refer to a distinct diagnostic category but rather a range of disorders defined by symptoms such as delusions and

hallucinations which involve some degree of loss of contact with reality (Huang et al., 2006). Such symptoms are likely to cause distress and impact on everyday functioning as well as resulting in social withdrawal (Bentall, 2003). The Office for National Statistics (2000) estimated that 1/200 people in the UK have experienced a psychotic episode in the last year. The estimate for diagnosis of a psychotic disorder (historical or recent) was 1.1%.

Psychosis has been conceptualised in a number of ways. The psychiatric literature has tended to take a diagnostic approach and identify specific disorders such as schizophrenia as defined by ICD-10 (World Health Organization, 1992) and DSM-IV (APA, 1994) which described symptoms as a deviation from the person's normal behaviour. Alternative approaches have focused on the understanding of specific symptoms – for example by exploring biological or neurodevelopmental mechanisms that may be implemented in their development or by considering the psychological factors underpinning unusual experiences. The following sections will consider theoretical approaches to understanding the development of psychosis followed by an exploration of psychological models and theories that seek to explain psychotic symptoms, including paranoid beliefs. The role of cognitions and beliefs in the development and maintenance of the experience of psychosis will subsequently be discussed, followed by an appraisal of the relationship between psychological theories of psychosis and cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997).

### 1.3.2 Theories of the development of psychosis.

Research has suggested that the development of psychosis is best accounted for by an interaction between an underlying vulnerability to

developing a psychotic disorder and environmental factors that cause increased stress (French and Morrison, 2004). Fowler, Garety and Kuipers (1995) suggested that vulnerability-stress models allow for a flexible conceptualisation of psychosis in that they encompass the possibility of biological influences on the development and experience of psychotic symptoms whilst emphasising the importance of psychological and social factors on outcomes.

A number of researchers have proposed specific vulnerability-stress models (e.g., Ciompi, 1988; Neuchterlein & Dawson, 1984; Perris, 1989; Strauss & Carpenter, 1981; Zubin & Spring, 1977) with variation in the emphasis placed on biological dysfunction in understanding individual levels of vulnerability. Neuchterlein (1987) suggested a neurobiological approach and proposed possible markers of vulnerability such as social skills deficits, schizotypal personality characteristics, cognitive-neuropsychological deficits, neurological impairment, and lack of stability in autonomic nervous system response that represent manifestations of neurobiological dysfunction. However, others have suggested that psychological and environmental factors can confer vulnerability as well as acting as stressors that may trigger and maintain a psychotic episode (Ciompi, 1988; Perris, 1989).

There has been evidence to suggest that schizotypal symptoms are indicative of an underlying genetic or biological vulnerability (Grove et al., 1991; Meehl, 1990). Schizotypal symptoms have been found to broadly relate to the underlying dimensions of schizophrenia (Bentall, Claridge, & Slade, 1989). Symptoms include unusual perceptual experiences, beliefs, and behaviour; SA; anhedonia; and cognitive disorganisation (Claridge et al.,

1996). In schizotypy, these symptoms exist at a lower level and/or are associated with lower levels of distress and interference in functioning than the symptoms of a psychotic episode. Continuum hypotheses (e.g., Strauss, 1969) have suggested that psychotic symptoms are on a continuum with normal processes. Individuals with higher levels of schizotypal symptoms may be at increased risk of developing psychosis such that lower level stressors would be more likely to trigger the onset of symptoms.

Yung et al. (1998) defined criteria for individuals at risk of developing psychosis as having either a first-degree relative with a psychotic disorder, or a diagnosis of schizotypal personality disorder and a recent deterioration in functioning. French and Morrison (2004) argued that, although the chances of developing schizophrenia increase with genetic proximity to a person with this diagnosis, 37% of people with schizophrenia do not have a first or second degree relative with the disorder (Gottesman & Erlenmeyer-Kimling, 2001). In addition, although there has been evidence to suggest the role of cognitive and neurobiological deficits (e.g., Chua & McKenna, 1995; Nelson, Pantelis, Barnes, Thrasher, & Bodger, 1994) and dopamine dysregulation (e.g., Kapur, 2003; Reith et al., 1994) in conferring vulnerability, there has been little evidence to suggest the implication of a specific abnormality that underlies the range of experiences associated with psychosis (Fowler et al., 1995). As such, the role of factors which can trigger psychosis may give a greater insight into an individual's difficulties and are at least as important as vulnerability factors.

Factors that precipitate the onset of an acute psychotic episode are also likely to be factors that maintain emotional disturbance and

dysfunctional appraisals. As such, stressors that act as triggers may also be involved in the maintenance and outcome of a psychotic disorder (Fowler et al., 1995; Strauss & Carpenter, 1981). These may be biological factors such as drug use, or psychological factors such as major life events, characteristics of relationships with significant others, or existential conflicts (Fowler et al., 1995; Warner, 1985). Additional factors that may affect the course of psychosis following the onset of symptoms include those that influence the impact of the psychotic episode on self-worth such as stigma from others and internalised self-stigma, as well as social and environmental factors which may support or inhibit recovery, and motivation to manage the disorder (Fowler et al., 1995).

The advantage of stress-vulnerability frameworks is their adaptability to incorporating new research into neurodevelopmental, genetic, biological and cognitive factors that may be implicated in the development of psychosis. For example, studies which have explored the role of specific genes (reviewed by Harrison & Owen, 2003) in the development of schizophrenia are concordant with a stress-vulnerability approach. The development of the evidence base on vulnerability factors has enhanced the existing frameworks which have also placed importance on environmental factors in triggering a psychotic episode.

A weakness of the stress-vulnerability approach has been that a broad view of psychosis as a syndrome has been taken and has offered little to explain the specific experiences that an individual may be faced with during a psychotic episode. Fowler et al. (1995) suggested that alternative approaches focused on the problems of people with psychosis are more

likely to lead to effective treatments. A psychological understanding of both psychosis and SA is important in the development of hypotheses relating to the nature of SA comorbid with psychosis and to the development of theoretically driven interventions. Psychological approaches to understanding the development and maintenance of psychotic symptoms will therefore be considered below.

# 1.3.3 Psychological models and theories of psychotic symptoms.

Research into the nature of psychotic symptoms has generally supported categorisation into positive, negative and disorganised symptoms (Arndt, Allinger, & Andreasen, 1991; Peralta, de Leon, & Cuesta, 1992; Strauss, Carpenter, & Bartko, 1974). It has been suggested that correlations between disorganised symptoms (such as disordered speech and thought) and neuropsychological test results are a reflection of underlying cognitive dysfunction (Basso, Nasrallah, Olson, & Bornstein, 1998). Research has tended to focus predominantly on positive symptoms with a smaller body of literature related to negative symptoms. Positive symptoms have been conceptualised as 'productive' in that they reflect the presence of something which would not be experienced in the absence of psychosis (e.g., delusions and hallucinations), whereas negative symptoms have been conceptualised as 'deficits' or the absence/reduction of 'normal' abilities or affect (e.g., blunted affect and social withdrawal) (Kay, Opler, & Lindenmayer, 1988). Theories of the negative symptoms of psychosis such as anhedonia and poverty of speech have generally postulated a biological basis (e.g., Buchanan, Carpenter, Kirkpatrick, Bryant, & Bustillo, 1995). Purely

neurobiological and neurocognitive accounts have been challenged by some researchers (for a review, see Rector, Beck, & Stolar, 2005). However, psychological factors involved in the maintenance of negative symptoms have received less research attention than psychological models of positive symptoms. Beck, Rector, Stolar, and Grant (2009) sought to address this and proposed a conceptualisation of the maintenance of negative symptoms that incorporated psychological factors such as beliefs and expectations related to own performance and social interactions. Beck, Grant, Huh, Perivoliotis, and Chang (2011) explored these dysfunctional attitudes and expectancies in relation to deficit syndrome – a presentation of schizophrenia in which negative symptoms are primary and enduring (Carpenter, Heinrichs, & Wagman, 1988). They suggested a continuum in relation to negative symptoms and found that participants with deficit syndrome endorsed defeatist and asocial beliefs to a greater degree and showed greater impairment in emotion recognition and poorer insight than nondeficit participants with negative symptoms. They proposed that asocial beliefs and poor emotion recognition lead to reduced fear of negative evaluation, providing insulation against the impact of stigma and protecting self-esteem. Such beliefs also lead to social indifference and withdrawal and poorer functional outcomes, reinforcing negative expectations and maintaining negative symptoms. Beck and colleagues' findings suggested that the factors in this cycle were more pronounced in deficit syndrome participants, but previous research has suggested that defeatist beliefs about performance, asocial beliefs, and negative expectancies regarding satisfaction were associated with negative symptoms in general samples of participants on the

schizophrenia spectrum (Gard, Kring, Gard, Horan, & Green, 2007; Grant & Beck, 2009, 2010). This relationship was supported by Grant, Huh, Perivoliotis, Stolar, and Beck's (2012) finding that participants with negative symptoms showed greater reduction in avolition-apathy and greater improvement in functioning following cognitive therapy targeting self-defeating and dysfunctional beliefs than participants who received standard treatment. This chapter will now focus on psychological models of positive symptoms.

# 1.3.3.1 Models of positive symptoms.

There are a number of approaches to understanding the nature of the positive symptoms of psychosis. These have included theories related to cognitive neuropsychological deficits and brain dysfunction. For example Frith (1987, 1992) proposed a cognitive-neuropsychological model that suggested a cognitive deficit leads to difficulties with self-monitoring such that a person's own actions seem to be the result of external stimuli, resulting in experiences of passivity and auditory hallucinations. He suggested that dopamine dysregulation may be an underlying factor in this deficit, providing a link with theories of the development of psychosis. Other theorists have also sought to explain positive symptoms as the result of cognitive deficits or brain dysfunction (e.g., Gray et al., 1990; Hemsley, 1993). However, Fowler and colleagues (1995) argued that the symptomatic expression of any biological pathology as well as symptom maintenance will also depend on social and psychological factors and that such factors are of primary importance in an individual's experience of psychosis. As these are the factors and processes likely to be amenable to therapeutic interventions and

to offer the opportunity of developing a collaborative understanding of the lived experience of psychotic symptoms, psychological models will form the focus of this section. The predominant models in the literature have been based on cognitive theory, which allows for comparison with cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997).

Earlier cognitive theories have focused on the role of cognitive processes in specific symptoms. For example, Chadwick and Birchwood (1994) used the cognitive model to explain auditory hallucinations and suggested that it is beliefs about voices that predict distress and problematic behaviour rather than the nature or content of the voices themselves. French and Morrison (2004) argued for the application of more comprehensive models which can account for the range of factors involved in the onset, development and maintenance of both delusions and hallucinations. In order to be therapeutically useful, such models need to account for the role of emotion and how the individual makes sense of their experiences. Such an approach has been offered by Garety et al. (2001) and Morrison (2001).

1.3.3.1.1 Garety, Kuipers, Fowler, Freeman, and Bebbington's (2001) cognitive model of the positive symptoms of psychosis.

Garety and colleagues (2001) suggested that there are two routes via which the positive symptoms of psychosis may develop. They postulated that the most common route is related to both cognitive and affective changes. However, they suggested that a minority of individuals with psychosis experience delusions in the absence of other positive symptoms as a result of triggering events that cause disturbed affect without any disruption in

information processing. The changes in affect are sufficient to activate biased appraisal processes and maladaptive schemas resulting in delusional interpretations of the triggering event or the emotional response. As both cognitive and affective changes are suggested to be implicated in the majority of cases of positives symptoms, this primary route will be in considered in more detail. Although Garety and colleagues' (2001) model focused on symptom onset and maintenance, their conceptualisation is compatible with stress-vulnerability models (e.g., Ciompi, 1988; Strauss & Carpenter, 1981) as they suggested a predisposition towards developing psychosis makes the individual vulnerable to a disruption in cognitive processes following stressful or traumatic events (Garety & Hemsley, 1994). Drawing on neurocognitive theories of psychosis (Frith, 1992; Hemsley, 1993), the model suggested there is a disruption in the individual's ability to recognise their own intentions to act such that self-generated cognitions and actions feel external and threatening and are experienced as anomalous (Garety et al., 2001).

Garety and colleagues (2001) stressed that anomalous experiences alone do not denote the onset of psychosis. The development of psychosis depends on the individual appraising these experiences as having an external cause and being personally significant. As such, an individual who experiences hallucinations but is able to reject external appraisals in favour of appraisals relating to their own cognitive processes or emotional state would not be considered psychotic.

A number of factors have been thought to contribute to individuals with psychosis developing delusions and hallucinations as a result of

anomalous experiences. Emotional changes that occur as a result of the triggering event and the unusual experiences feed back into the nature of the experiences themselves – for example by impacting on the content of voices. This in turn can make the experiences seem more threatening or distressing, causing a feedback loop. Experiences that are both unusual and associated with high levels of emotion trigger a search for meaning (Maher, 1988). When combined with cognitive biases thought to be common in individuals with psychosis (Garety and Freeman, 1999) and exacerbated by negative emotions, this search for meaning leads to a delusional explanation (Garety et al., 2001).

Garety et al. (2001) also suggested that social isolation means that individuals with psychosis do not have the normalising experience of being offered alternative explanations to their appraisals (White, Bebbington, Pearson, Johnson, & Ellis, 2000). They outlined a number of other factors which further contribute to the maintenance of psychotic appraisals to explain why they are not corrected in the absence of evidence. The biased reasoning processes hypothesised to contribute to symptom development are also likely to contribute to their maintenance. For example, a 'jumping to conclusions' data gathering bias may cause an individual to select an explanation for their experiences based on a lower level of evidence. This reasoning bias is likely to be stronger in the face of emotive and self-referent material, meaning that the appraisal may be maintained in the face of very limited evidence that seems to fit with the initial interpretation (Garety & Freeman, 1999).

In addition, Garety and colleagues' (2001) model suggested that dysfunctional schemas, adverse social environments, and emotional distress contribute to the maintenance of positive symptoms. Beliefs about the self and others have been shown to influence the content of delusions and hallucinations and the tenacity with which psychotic beliefs are held. In turn, distressing hallucinations and delusions are likely to be seen as confirmation of negative beliefs. Garety and colleagues suggested that these beliefs are often the consequence of aversive social environments and/or traumatic experiences. The role of beliefs and cognitions in psychosis is considered in more detail in section 1.3.5, and the relationship between trauma and psychosis is explored in section 1.5.3.

Emotional distress in the form of depression may contribute to the maintenance of psychotic symptoms and has been associated with poorer outcomes (Aguilar et al., 1997; Birchwood & Iqbal, 1998). In addition, Garety et al. (2001) highlighted the similarities between processes maintaining anxiety disorders and factors associated with the maintenance of psychosis. Both anxiety and psychosis have been associated with biases in information processing involving hypervigilance to perceived threat, safety behaviours that prevent experiences or evidence gathering that would disconfirm beliefs, and metacognitive beliefs regarding the meaning of anxious thoughts or psychotic appraisals. These processes interact with existing beliefs and drive a search for meaning that is consistent with beliefs and emotions, increasing distress and maintaining dysfunctional appraisals (Garety et al., 2001).

The final part of Garety and colleagues' (2001) model is the secondary appraisal or how the experience of psychosis is perceived by the

individual. Insight is likely to affect the way that symptoms are addressed and engagement with treatment. An appraisal of psychosis itself as shameful or stigmatising may influence the development of concurrent or post-psychotic emotional disorders (Birchwood & Iqbal, 1998; Birchwood, Iqbal, Chadwick, & Trower, 2000; Iqbal, Birchwood, Chadwick, & Trower, 2000), feeding back into maintenance of the disorder.

## 1.3.3.1.2 Morrison's (2001) cognitive model of psychosis.

Morrison's (2001) cognitive model of psychosis is similar to that proposed by Garety and colleagues' (2001) in that the interpretation of unusual experiences is seen as key to the development of psychosis. The model was developed to account for the difficulties of individuals at high risk of developing psychosis as well as those experiencing a psychotic episode. As such, it considered factors implicated in whether unusual experiences develop into acute psychosis as well as emotional difficulties associated with both psychosis and at risk mental states.

Morrison (2001) suggested that the processes involved in the development of psychosis are similar to those involved in the development of non-psychotic disorders and drew parallels with models of anxiety disorders. Specifically, Morrison conceptualised delusions and hallucinations as intrusions into awareness that could be understood within similar explanatory frameworks to those used to formulate intrusions in anxiety disorders (such as obsessional thoughts in OCD and intrusions into awareness of body state information in panic disorder and hypochondriasis). Cognitive models of anxiety disorders (e.g., Clark, 1986; Salkovskis, 1985; Warwick & Salkovskis, 1990) have hypothesised that it is the misinterpretation of such intrusions

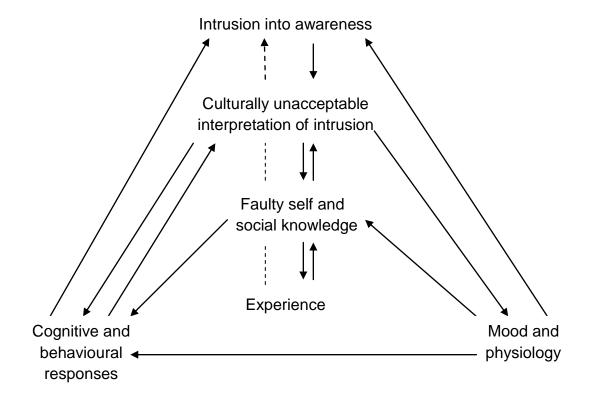
that differentiates clinical groups from the normal population and causes distress. These misinterpretations are then maintained by safety behaviours that prevent disconfirmation of threat. Similarly, epidemiological studies have supported Strauss' (1969) hypothesis that psychotic symptoms are on a continuum with normal processes and that phenomena such as hearing voices and endorsing delusional ideas are common in the general population (e.g., Slade & Bentall, 1988; Tien, 1991; van Os, Hanssen, Bijl, & Ravelli, 2000). However, it is the appraisal of these experiences that determines emotional response and associated use of safety behaviours and attempts to control such intrusions (Morrison, 2001). Peters, Joseph, and Garety (1999) compared the beliefs of delusional patients with those of the general population and found that it was conviction, distress and preoccupation rather than thought content that differentiated the groups. Evidence has suggested that symptom distress is associated with counterproductive attempts to control thoughts and safety behaviours designed to prevent feared outcomes which, in practice, serve to prevent disconfirmation of beliefs (Freeman & Garety, 1999; Morrison, 1998). Central to the experience of psychosis is that the interpretation of intrusions is deemed culturally unacceptable.

Morrison (2001) drew further parallels with anxiety disorders when he considered the development of unusual experiences and the maintenance of psychotic appraisals. Drawing on Wells and Matthews' (1994) Self-Regulatory Executive Function (S-REF) model of emotional dysfunction, Morrison's model suggested that vulnerability to psychosis and its subsequent maintenance are associated with beliefs about the self, others

and the world (declarative beliefs); procedural beliefs that direct selective attention, memory retrieval, appraisal and metacognitive processing; and positive and negative beliefs about unusual experiences (for example determining whether someone engages with a voice or attempts to suppress it). Emotional experiences and physiological arousal have also been shown to influence the frequency and interpretation of unusual experiences (Garety & Hemsley, 1994; Gumley, White, & Power, 1999). The model also suggested that early experiences and current environmental influences contribute to the development of dysfunctional beliefs and the nature of interpretations of intrusions as well as the content and frequency of anomalous experiences (Morrison, 2001). A schematic representation of Morrison's model is shown in Figure 1.3.

Figure 1.3

Morrison's (2001) Cognitive Model of Psychosis



Morrison's (2001) approach drawing on models of anxiety disorders may be particularly useful in considering the specific symptom of paranoia. Although paranoid beliefs have been found in the general population (see section 1.2.4), they are particularly common as a feature of psychosis (Cutting, 1997). The following section will give an overview of psychological theory in this area, as the role of paranoia in SA in psychosis is of interest in the current study.

#### 1.3.4 Paranoia.

Following his cognitive-neuropsychological model of hallucinations (see section 1.3.3.1), Frith (1992) went on to suggest that paranoid delusions may result from deficits in cognitive processes related to understanding

social interactions and developing theory of mind, resulting in confusion over the actions and intentions of others. Alternative approaches to understanding paranoia have incorporated cognitive processes with theories related to social and psychological factors. Bentall, Kinderman, and Kaney (1994) developed a model of persecutory delusions which suggested that attentional biases towards threat-related stimuli activate discrepancies between actual and ideal self, leading to delusional explanations that locate the source of the discrepancy within other people, allowing maintenance of a positive self-concept and protecting self-esteem.

Contrary to Bentall and colleagues' (1994) model, later research suggested considerable variation in self-esteem amongst individuals with persecutory delusions (Garety & Freeman, 1999). As such, Trower and Chadwick (1995) suggested that there may be two types of paranoia – 'poor me' paranoia related to seeing oneself as a victim and attributing negative events to other people; and 'bad me' paranoia related to seeing oneself as 'bad' and expecting to be punished by others.

Bentall et al. (1994) and Trower and Chadwick (1995) have provided conceptualisations of paranoid beliefs as functional in terms of providing an explanation for negative events and/or counteracting negative beliefs.

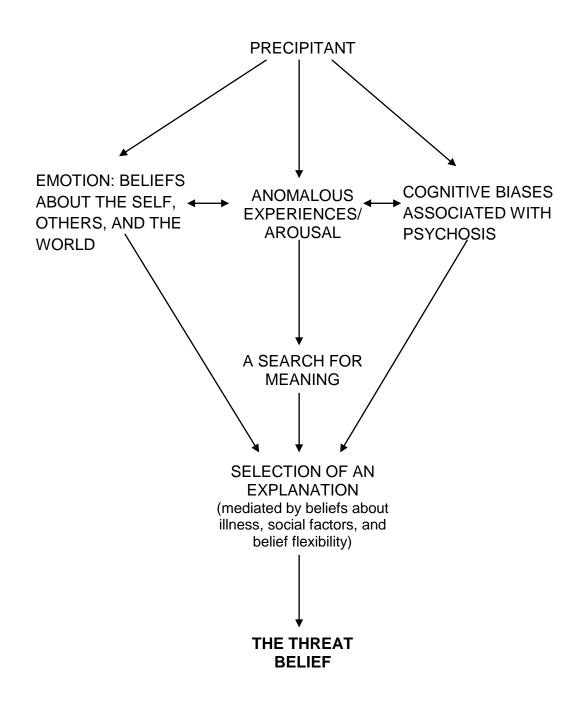
Similarly, Freeman, Garety, Kuipers, Fowler, and Bebbington (2002) cited evidence that the content of delusions tends to reflect existing beliefs about the self, others and the world and that lower self-esteem is associated with more self-diminishing delusions (Bowins & Shugar, 1998; Freeman et al., 2002). They developed an alternative framework which applied the cognitive model of the positive symptoms of psychosis (Garety et al., 2001) to the

specific symptom of persecutory delusions. Freeman and colleagues hypothesised that persecutory delusions are threat beliefs, and this application of the model placed greater emphasis on processes associated with anxiety. They suggested that individuals with paranoia are likely to have high premorbid anxiety and depression that interacts with a precipitating stressor and vulnerability to psychosis to cause anomalous experiences, cognitive biases and a search for meaning. Anxiety associated with impending threat or danger influences the explanation chosen for distressing experiences – i.e. a persecutory delusion. Drawing on Birchwood (1995), Freeman and colleagues also suggested that beliefs about mental illness may lead to the selection of a persecutory belief rather than the more distressing belief that the person is going 'mad'. Social isolation and lack of cognitive flexibility also make it more likely that delusional beliefs will go unchallenged (Freeman et al., 2002; Garety et al., 1997). According to the model, persecutory delusions are further maintained by cognitive biases and social interactions that lead to the gathering of confirmatory evidence and safety behaviours that prevent the gathering of disconfirmatory evidence (Bentall & Kaney, 1989; Freeman et al., 2002; Freeman, Garety, & Kuipers, 2001; Freeman, Garety, & Phillips, 2000; Wahl, 1999). Incorporating disconfirmatory evidence into the delusional belief system may also lead to it being discarded (Melges & Freeman, 1975). In common with the more general model of positive symptoms (Garety et al., 2001), the secondary appraisal of the experience of delusional thoughts influences the level of distress experienced by the individual (Freeman & Garety, 1999). A

schematic representation of the cognitive model of persecutory delusions is shown in Figure 1.4.

Figure 1.4

Freeman, Garety, Kuipers, Fowler, and Bebbington's (2002) Cognitive Model of Persecutory Delusions



In common with Garety and colleagues' (2001) and Morrison's (2001) cognitive models of the positive symptoms of psychosis, Freeman and colleagues (2002) highlighted the interaction between dysfunctional beliefs, information processing biases and the search for meaning in the development and maintenance of symptoms. This chapter will now briefly consider research findings related to the role of cognitions and beliefs in psychosis (including paranoia), as these are important features of the models and of interest in this thesis.

## 1.3.5 Cognitions and beliefs in psychosis.

Research has shown negative self-evaluations to be common in psychosis, and there is a considerable body of research linking low selfesteem to the experience of psychosis (Bowins & Shugar, 1998; Combs & Penn, 2004; Gureje, Harvey, & Herrman, 2004). However, low self-esteem is common to many psychological disorders (Bednar, Wells, & Peterson, 1989), and more recent research has focused on schematic beliefs that may be implicated in psychosis but less prevalent or less extreme in other groups. For example, Fowler et al. (2006) found that individuals with psychosis held more extreme negative beliefs about themselves and others than a student sample despite there being no significant differences between the groups on an additional measure of self-esteem and on positive beliefs about the self and others. These extreme beliefs have been hypothesised to result from early experiences and influence the appraisal of anomalous experiences or ambiguous social situations, triggering psychotic symptoms (Garety et al., 2001). As has been described in the cognitive models (Garety et al., 2001; Morrison, 2001), psychotic experiences appear to confirm negative beliefs

about the self and others, feeding back into the cycle. These beliefs have been thought to be especially important in the development of delusions and the content of delusional beliefs – for example, negative beliefs about the self in relation to vulnerability or deserving to be harmed and negative beliefs about others in relation to hostility and threat are likely to be implicated in the formation of persecutory beliefs (Freeman et al., 1998, 2002; Trower & Chadwick, 1995). Such beliefs have often been associated with traumatic earlier experiences (Freeman et al., 2002), and this is considered in section 1.5.3.

# 1.3.6 Summary and appraisal of relationship between cognitive models of social anxiety disorder and theories of psychosis.

Garety and colleagues' (2001) and Morrison's (2001) cognitive models of positive symptoms are largely complementary and are compatible with stress-vulnerability models (e.g., Ciompi, 1988; Strauss & Carpenter, 1981). Both models focused on the interpretation of delusions and hallucinations as the defining factor in whether unusual experiences become psychotic symptoms. This is similar to cognitive models of anxiety disorders (e.g., Clark, 1986; Salkovskis, 1985; Warwick & Salkovskis, 1990), although the similarities were made more explicit in Morrison's model and in the application of Garety and colleagues' model to persecutory delusions (Freeman et al., 2002). In both SA and psychosis, social isolation and/or avoidance have been seen as preventing alternative interpretations (of social situations or unusual experiences).

As discussed above, cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) have suggested that the perception of social

threat is the result of pre-existing maladaptive schemas and that this perception leads to information processing and attentional biases which confirm beliefs and impact on the evaluation of threat. However, the beliefs that trigger dysfunctional assumptions related to SA have been hypothesised to be situation specific in that they are activated in social situations (Coles et al., 2001). Dysfunctional beliefs in psychosis have been hypothesised to be the result of adverse early experiences, and there is evidence to suggest that individuals with psychosis hold extreme negative beliefs about themselves and others (Fowler et al., 2006). The extent to which dysfunctional beliefs resulting from adverse early experiences may be implicated in SA that is associated with subclinical paranoia in the non-psychotic population is unclear. A hierarchical conceptualisation of paranoia (Freeman et al., 2005a, 2005b) suggested that there may be a continuum of experiences associated with SA with varying levels of dysfunctional beliefs in relation to the self and others. This is concordant with continuum theories of psychosis (e.g., Strauss, 1969).

Garety and colleagues (2001) and Morrison (2001) also highlighted the interaction of dysfunctional beliefs and information processing biases in the development and maintenance of psychosis. Morrison reported that the most frequently studied information processing bias in schizophrenia is attentional bias. Research that has suggested that individuals experiencing persecutory delusions exhibit an attentional bias towards threatening stimuli (Bentall & Kaney, 1989; Kaney, Wolfenden, Dewey, & Bentall, 1992; Kinderman, 1994) may be compared to Rapee and Heimberg's hypothesis that individuals with SA exhibit an attentional bias towards external sources

of threat. In addition, Morrison cited evidence of a further information processing bias in psychosis related to self-focused attention (e.g., Frith, 1979; Ingram, 1990). Ensum and Morrison (2003) found that reducing selffocused attention decreased the extent to which participants with auditory hallucinations made external attributions for their choice of words in a word association task. They suggested that this indicated that deficits in sourcemonitoring were associated with an internal focus of attention. Cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) have also highlighted the role of self-focused attention in the development of an observer-perspective negative self-image. In the Clark and Wells model, selffocused attention was hypothesised to be the central component in the creation of the image. If psychosis is associated with increased self-focused attention, then this may increase vulnerability to SA. Alternatively, the association between paranoid beliefs and selective attention to external threat may convey a vulnerability to SA that is more in keeping with Rapee and Heimberg's model and may be phenomenologically similar to low-level paranoia.

Garety and colleagues' (2001) cognitive model of positive symptoms highlighted the role of the secondary appraisal in the maintenance of psychosis, which suggested that, when psychosis is seen as shameful or humiliating, the individual may be vulnerable to developing depression. This is in keeping with Birchwood's (2003) conceptualisation of emotional dysfunction in psychosis. Amongst first episode psychosis (FEP) patients, more than half reported post-psychotic depression, more than a third reported symptoms consistent with PTSD, and nearly half reported SA

(Birchwood, 2003; Birchwood, Iqbal, Chadwick, & Trower, 2000; Cosoff & Hafner, 1998; McGorry et al., 1991). Birchwood highlighted the difficulties in making clear distinctions between these emotional disorders. For example, the appraisal of psychosis as resulting in entrapment, loss of social goals and loss of social status may result in the episode being experienced as traumatic, inescapable and shameful – factors linked to post-psychotic depression, PTSD and SA (Birchwood, 2003). As shameful appraisals of psychotic experiences have been implicated in the development of SA (Birchwood et al., 2006), this chapter will now consider psychological approaches to understanding shame, its links with SA and depression, and relation to the experience of psychosis. This will be followed by a consideration of images, memories and the relationship between trauma and psychosis, as this is also a focus of the thesis, and research has suggested the development of trauma symptoms in people with psychosis may share pathways with SA and depression (Birchwood, 2003; McGorry et al., 1991).

## 1.4 Shame

#### 1.4.1 Definition of shame.

Beck (2005b) defined shame as 'an affect related to a person's conception of his public image at the time that he is being observed or believes he is being observed' (p.156). Shame is activated when a person believes that they have been observed to be falling short of expected social norms, expectations or demands. The fundamental trigger is the belief that other people see them as in some way weak, inferior or inept rather than the actual communication that this is the case (Beck, 2005b).

Gilbert (2001) offered a subtly different interpretation of shame. He suggested that it is not activated by the threat of failing to attain a desired standard but by a perception of being close to an 'undesired self'. Ogilvie (1987) found that the distance between the 'undesired self' and the 'real self' was more highly correlated with life satisfaction than that between the 'real self' and an 'ideal self'. In relation to shame, this conceptualisation was supported by research by Lindsay-Hartz, de Rivera, and Mascolo (1995), whose participants emphasised the experience of themselves as who they did not want to be rather than failing to be who they did want to be. Both Beck's (2005b) and Gilbert's conceptualisations of shame are consistent with a fear of one's inadequacies being exposed and both associate shame with withdrawal and safety behaviours. These are key aspects of a psychoevolutionary approach, such as that taken by social rank theory (e.g., Gilbert, 2000), which has understood such responses as submissive self-protective strategies.

This section will now give an overview of the conceptualisation of shame within social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987). It will then explore the relationship between shame and SA before considering shame and the experience of psychosis in preparation for discussion of the role of shame in SA in psychosis.

#### 1.4.2 Shame and social rank theory.

Social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987) has suggested that an individual's perception of their status or rank and associated appraisals related to being inferior to others impacts on their emotional state, leading to submissive behaviour designed to appease

others and ward off attack. In animals, this would have an adaptive function where the social threat is aggression. In humans, the desire is to convey a favourable impression to others which is unlikely to be achieved by withdrawal behaviours (Gilbert, 1989, 2001; Leary, 1995).

The broad concept of shame has been associated with the expectation or being found to be in some way undesirable or unattractive and consequently rejected (Gilbert, 2001). Internal shame has been related to negative views about one's own attributes or behaviour, whereas external shame has been associated with the awareness or perception of stigma from others (Cook, 1996; Pinel, 1999). It is external shame which has been associated with unfavourable social comparisons and submissive safety strategies (Keltner & Harker, 1998; Tangney, 1995).

In applying social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987) to depression, Gilbert (1992) suggested that experiences that trigger feelings of loss, humiliation and entrapment or defeat are depressogenic. Such events lead to the initiation of submissive behaviours as a defensive reaction to entrapment, resulting in feelings of inferiority and self-blame. Similarly, Zuroff, Moskowitz, and Côté (1999) suggested that vulnerability to depression is related to insecurities around attachment and social acceptance. The perception of social inferiority associated with shame has also been implicated in SA (e.g., Gilbert, 2000), and this relationship will now be explored.

## 1.4.3 Shame and social anxiety.

Social rank theory (Gilbert, 1989, 1992, 2000; Price & Sloman, 1987) has suggested that SA occurs when, as a result of negative schemas, a

person sees themselves as subordinate and others as dominant and believes they have to compete for their social place and will be revealed as incompetent (Gilbert & Trower, 2001; Trower, Sherling, Beech, Harrop, & Gilbert, 1998). Defensive strategies are automatically activated, making the person hypervigilant and more likely to perceive a social situation as threatening. They will closely monitor their behaviour for anything they believe will heighten that threat or draw attention to themselves, leading to self-monitoring, safety behaviours and avoidance (Gilbert, 2000). These responses have been seen as a defence against loss of social status and the rejection that has been associated with negative evaluation. Emphasis on negative self and other beliefs, threat perception, self-monitoring, safety behaviours and avoidance have made this approach complementary to cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997).

Within social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987), shame and SA behaviours have been described and understood in a complementary manner (Gilbert, 2000), and there has been disagreement over the extent to which they are overlapping concepts (Gilbert, 2000; Tangney & Miller, 1996). In both cases, submissive behaviours are incompatible with an evolved social rank system in which acceptance is based on affiliative qualities rather than hierarchies based on physical strength, dominance and submission. Such behaviours are likely to result in marginalisation, feeding back into a SA or shame based maintenance cycle (Gilbert, 1997). However, shame has been associated with a range of specific disorders such as SA, depression and personality disorders, whereas SA has been seen as a distinct psychopathology (Allan, Gilbert, &

Goss, 1994; Gilbert, 1998; 2000). It may be that shame conveys a vulnerability to the development or contributes to the maintenance of emotional disorders or is activated in different contexts for different disorders.

## 1.4.4 Shame and psychosis.

Garety and colleagues' (2001) cognitive model of psychosis suggested that the secondary appraisal of psychotic symptoms may be implicated in the subsequent development of depression if the experience of psychosis is seen as stigmatising (Birchwood & Iqbal, 1998). As discussed above, Birchwood (2003) suggested that appraisals of the meaning of psychosis for the individual may contribute to post-psychotic emotional dysfunction, highlighting SA and PTSD as well as depression. He suggested that, following a FEP, individuals perceive themselves to be shamed and socially subordinated by others because of their diagnosis (Haghighat, 2001). This is in keeping with research into stigma and psychosis (e.g., Corrigan, 2005; Hinshaw, 2007; Thornicroft, 2006), but such research has not tended to explicitly consider shame as a reaction to perceived stigma.

Rüsch and colleagues (2009) explored the cognitive appraisal of stigma stress and associated emotional and coping responses in people with mental illnesses. They found that high stigma stress was associated with increased SA and shame. They hypothesised that, if an individual perceives that the potential harm of stigma exceeds their coping resources, they experience SA and shame which lead to negative emotional and social outcomes. However, not all of their participants were diagnosed with psychotic disorders and shame-proneness was measured using a questionnaire based on specific social scenarios, making it unclear to what

extent these results may be generalised to individuals with psychosis and more global perceptions of external shame.

A psychotic episode can lead an individual to feel entrapped; either in their symptoms, or because they feel constrained in their ability to achieve desired roles or goals. In the context of mental illness stereotypes, psychosis may further be perceived as a threat to social rank (Rooke & Birchwood, 1998). Individuals may thus perceive themselves to be close to their 'undesired self' (Ogilvie, 1987) and see a discrepancy between the self they would like to be and their 'probable/future self' (Iqbal et al., 2000; Markus & Nurius, 1986). As such, the key elements associated with shame (Gilbert, 2001) may be activated in individuals who hold such appraisals of their psychosis.

# 1.4.5 Summary and appraisal of theories of shame.

There has been a lack of empirical research exploring the links between SA and shame. However, one such study (Gilbert, 2000) found that both shame and SA were associated with feeling inferior and displaying submissive behaviour. This is concordant with their conceptualisation within social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987). The key difference between shame in SA and shame in psychosis is that fear of humiliation and criticism in SA is triggered by specific social situations, whereas individuals with psychosis feel shamed as a result of something which may seem fixed and is always present (the diagnosis). This may impact on levels of avoidant behaviour and interact with negative schemas which have been hypothesised to be more extreme in individuals with psychosis (Birchwood, 2003; Fowler et al., 2006). However, empirical

research exploring links between psychosis and shame rather than stigma has also been lacking. Birchwood and colleagues (2006) used social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987) to explore SA in psychosis, and this study will be considered in the social anxiety and psychosis section (see section 1.6.2.2). Preceding this, the chapter will explore the role of images, memories and trauma symptoms in SA, as they are also investigated in this thesis. As discussed above, the appraisal of psychosis may be implicated in the development of trauma symptoms as well as SA (Birchwood, 2003). The role of a negative image of the self in SA (Clark & Wells, 1995; Rapee & Heimberg, 2007) has been outlined above, and links between these images and memories will now be considered in relation to SA, psychosis and traumatic experiences.

# 1.5 Images, Memories and Traumatic Experiences

## 1.5.1 Images and memories in social anxiety disorder.

As discussed in the social anxiety disorder section above, Clark and Wells' (1995) and Rapee and Heimberg's (1997) cognitive models have hypothesised that individuals with SA experience a mental image of themselves as they believe that they appear to an observer. The phenomenology of images experienced when feeling anxious in social situations has been explored by a number of researchers.

Hackmann, Surawy, and Clark (1998) developed a semi-structured interview designed to explore the images experienced by people with SA. In comparison to non-clinical participants, they found that people with SA are more likely to experience images incorporating themselves as if seen through an observer's eyes rather than taking a field perspective and

picturing the social situation through their own eyes. Wells and Papageorgiou (1999) reported similar results and found that a shift to the observer perspective when imagining an anxiety provoking social situation differentiated socially anxious participants from participants with agoraphobia and blood/injury phobia. Other researchers have used experimental designs to compare the impact of qualitatively different mental images on SA. Findings have suggested that self-images which are negative and experienced from an observer perspective are associated with greater levels of anxiety and poorer social performance than neutral or positive images and images experienced from a field perspective (Hirsch, Clark, Mathews, & Williams, 2003; Hirsch, Meynen, & Clark, 2004; Spurr & Stopa, 2003; Vassilopoulos, 2005). Such studies have appeared to confirm the hypothesis that an observer perspective negative self-image is a key factor in the maintenance of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997).

Following on from Hackmann and colleagues' (1998) study,
Hackmann, Clark, and McManus (2000) used an extended interview to
explore whether the images experienced by socially anxious participants
were related to specific memories. Participants who indicated that their
image was closely linked to a memory were asked to recall the remembered
event and describe what they could see, hear, smell and taste and what
sensations they experienced in their body. They were also asked about
events before, during and after the memory; what they felt; and what the
remembered event meant about themselves, others and the world.
Hackmann and colleagues (2000) also used rating scales to elicit
quantitative data on how similar the memory and the image appeared to be

in both their sensory qualities and their interpersonal meanings. The relationship between the memory and the onset of SA was then explored.

All 22 participants reported experiencing an image when anxious in social situations, and 96% indicated that their image was closely linked to a negative event in their memory. The themes identified in these memories related to negative responses from other people and experiences of self-consciousness. Hackmann et al. (2000) therefore concluded that their results suggested that the negative self-image that is central to cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) is the result of early unpleasant social experiences. They hypothesised a maintenance cycle whereby memory content triggers the experience of the negative image in social situations. The image maintains anxiety in the social situation, reinforcing self-focused attention and avoidance which prevent the gathering of disconfirmatory evidence that would allow the image to be updated.

A potential weakness of this study was that the participants had all completed treatment for SA and were asked to recall situations that had made them anxious prior to their treatment. In addition, as the sample size was relatively small, replication could strengthen the findings, particularly given that there have been few other studies exploring the link between images and early memories in SA. However, this study advanced earlier research in that it proposed a mechanism through which negative self-images impact on SA.

One recent study sought to further explore the role of autobiographical memories and the nature of images in SA. Moscovitch, Gavric, Merrifield, Bielak, and Moscovitch (2011) compared high and low socially anxious

participants and found that both groups experienced negative images that were associated with autobiographical memories when in anxiety-provoking social situations. However, the low SA group were also able to access positive self-representations, and these were more detailed than the lower number of positive self-images retrieved by the high SA group. The negative images of the high SA group were also associated with more emotional and cognitive consequences, and the researchers suggested that it may be the psychological impact of images rather than the frequency of these experiences that distinguished individuals with SA.

Although research relating to imagery and memory in SA is in its infancy, there has been evidence for a relationship in other emotional disorders, particularly in post-traumatic stress disorder (PTSD; Holmes & Hackmann, 2004). Possible overlaps between the reexperiencing symptoms associated with traumatic memories and imagery in psychosis and SA will be considered below. To contextualise this discussion, this chapter will first give an overview of a study exploring images and memories in psychosis.

## 1.5.2 Images and memories in psychosis.

Morrison and colleagues (2002) explored the images reported by people experiencing psychotic symptoms during the course of delivering cognitive therapy. They found that 74.3% of 35 patients interviewed were able to identify an image that they associated with their psychotic symptoms. Drawing on Hackmann and colleagues' (2000) interview, participants were then asked whether their images were associated with particular memories. Of those participants who identified an image, 70.8% associated it with a remembered event in their past. In addition, participants reported that their

images were recurrent and were linked to an emotional response and beliefs about the self, others and the world. Morrison and colleagues concluded that their findings supported theories of similarities between the processes maintaining psychosis and anxiety disorders (Morrison, 2001) and suggested that images linked to memories may contribute to the maintenance of psychotic symptoms.

In exploring the themes contained within participants' descriptions of their images, Morrison and colleagues (2002) identified feared catastrophes associated with paranoia or persecutory ideas and memories of real traumatic events. They highlighted similarities between these latter images and the reexperiencing symptoms of PTSD. This relationship will now be explored below.

# 1.5.3 Trauma and psychosis.

Approximately 70% of the general population have experienced an event that would be considered traumatic (Norris, 1992). Such events include natural disasters, terrorist attacks, assault, road accidents, and witnessing extreme suffering or death (Brewin, 2003). Breslau, Davis, Andreski, and Peterson (1991) suggested that up to 24% of these people will go on to develop PTSD. Experiences of traumatic events have been reported to be especially high in people with psychosis (Morrison, Frame, & Larkin, 2003), and studies of FEP clients have found that between 31 and 46% meet criteria for the symptoms of PTSD (Jackson, Knott, Skeate, & Birchwood, 2004; McGorry et al., 1991; Tarrier, Khan, Cater, & Picken, 2007).

A meta-analysis (Varese, Smeets, et al., 2012) indicated that patients with psychosis were 2.72 times more likely to have experienced childhood

trauma than controls and suggested that childhood adversity increases the risk of developing psychosis. A particularly strong research finding has been that of a link between childhood sexual abuse (CSA) and psychosis. Using data from the 2007 Adult Psychiatric Morbidity Survey (McManus, Meltzer, Brugha, Bebbington, & Jenkins, 2009), Bebbington and colleagues (2011) found that individuals who had been sexually abused before the age of 16 were 2.74 times more likely to screen positive for psychosis. Those who had experienced non-consensual intercourse were 10.14 times more likely to be classified as 'psychotic'. More specifically, CSA has been linked to hallucinations (Read, Agar, Argyle, & Aderhold, 2003). Varese, Barkus, and Bentall (2012) explored this association and found that the relationship between childhood trauma and hallucinations was mediated by dissociative tendencies. Hallucinating participants reported significantly higher rates of CSA and had significantly higher scores for dissociative experiences compared to non-hallucinating participants. These findings suggested that there may be an overlap between symptoms of psychosis and symptoms of PTSD, and this is considered further below.

Despite the reported prevalence of PTSD symptoms in FEP clients, Mueser, Lu, Rosenberg, and Wolfe (2010) pointed out that they may not necessarily meet diagnostic criteria for PTSD. *DSM-IV* (APA, 1994) criteria for PTSD require that the person has been exposed to a traumatic event involving 'actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others' (p.427-428). Jackson and Birchwood (2006) suggested that this means that threats to psychological wellbeing do not meet criteria for a traumatic event. However, research has suggested

that the experience of psychosis can be traumatic as it shatters beliefs about the self, others and the world (Shaner & Eth, 1989). Frame and Morrison (2001) studied participants hospitalised for an acute psychotic episode both during their admission and 4-6 months later. They found that 67% had clinically significant PTSD symptoms at time one and 50% at time two. Hierarchical regression analyses indicated that, when hospitalisation and earlier traumatic events were statistically controlled for, the experience of psychosis accounted for 24% of unique variance in PTSD scores. However, a history of trauma and victimisation experiences are common in people with psychosis (e.g., Goff, Brotman, Kindlon, Waites, & Amico, 1991; Masters, 1995), and research has also suggested that traumatic events may increase the risk of developing psychosis (Janssen et al., 2004; Spauwen et al., 2006). In addition, notwithstanding the findings of Frame and Morrison, psychiatric treatment, particularly hospitalisation, may be experienced as traumatic (Beveridge, 1998).

Morrison and colleagues (2003) suggest three possible pathways: psychosis as a cause of PTSD; trauma as a trigger for psychosis; and psychosis and PTSD as part of a spectrum of responses to traumatic events. There are similarities between the intrusive thoughts, images and 'flashbacks' associated with PTSD and psychotic hallucinations, and the reexperiencing symptoms of PTSD often take the form of hallucinations and may be accompanied by paranoia (Butler, Mueser, Sprock, & Braff, 1996). Research has suggested hallucinatory experiences in psychosis may be the result of intense anxiety disrupting the contextual processing of traumatic memories, causing them to be vulnerable to being triggered involuntarily and

experienced as intrusions (Steel, Fowler, & Holmes, 2005). This is similar to theories of the disruption of memory processes in PTSD (e.g., Brewin, 2001; Ehlers & Clark, 2000).

Steel, Mahmood, and Holmes (2008) found that schizotypy was related to a data-driven information processing style. Ehlers and Clark (2000) suggested that, when there is a shift to such an information processing style following a traumatic event, the memory is subsequently inadequately integrated into its context, resulting in reexperiencing symptoms. Such an information processing style in individuals with high levels of schizotypal symptoms may therefore be seen as a vulnerability factor for intrusive memories and may be implicated in the transition to psychosis (Steel et al., 2008).

In line with Morrison's (2001) cognitive model, Morrison et al. (2003) suggested that the cultural acceptability of intrusions and their interpretation, and beliefs about psychotic experiences may determine whether someone is diagnosed with PTSD or psychosis – i.e., if individuals link their experiences to traumatic events rather than making external appraisals, then a PTSD diagnosis is more likely.

# 1.5.4 Summary and appraisal of the relationships between traumatic memories, images, psychosis and social anxiety.

The above section has given an overview of research indicating the nature of imagery in SA and how this may link to early memories. It has also considered the role of images in psychosis, which Morrison et al. (2002) found were often connected to traumatic memories. The relationship

between trauma and psychosis was discussed in relation to similarities in intrusive symptoms and processing of traumatic memories.

The link between images and memories and their role in the maintenance of SA has further been suggested by the results of studies using imagery and memory rescripting. Wild, Hackmann, and Clark (2007, 2008) found that the process of reliving, reappraising and updating distressing memories linked to images experienced during anxiety-provoking social situations led to significant improvement in negative self-beliefs, image and memory distress and vividness, fear of negative evaluation, and anxiety in feared social situations.

Morrison et al. (2002) reported that some participants who did not report an image related to their psychotic symptoms did report images related to anxiety-based symptoms. This supported the findings of Lockett and colleagues (2012, discussed in section 1.6.2.2) that participants with both psychosis and SA experienced a mixture of typical SA images and images that appeared to be more related to psychotic symptoms and paranoia.

In summary, research has suggested that both SA and psychosis are associated with intrusive images which may be linked to memories. This suggests that memory rescripting may also be beneficial in the treatment of individuals with comorbid SA and psychosis. However, as discussed above, the intrusive memories of people with psychosis may relate to traumatic experiences and be associated with symptoms of PTSD rather than being memories of social performance and embarrassment. Hackmann and colleagues' (2007, 2008) intervention may usefully be integrated with existing

treatments for PTSD if memories were found to be focused on external threat. Where such memories are experienced as intrusive and appraised as external in origin, integration of CBT techniques for psychosis and PTSD may be appropriate (Steel et al., 2005). The nature of SA in psychosis, which is the subject of this thesis, will be considered in the next section.

# 1.6 Social Anxiety in Psychosis

## 1.6.1 Prevalence and implications.

The symptoms of comorbid emotional disorders may have an equal or greater impact on an individual's life than the symptoms of psychosis (Fowler et al., 1995; MacCarthy, Benson, and Brewin, 1986). SA in schizophrenia has been reported to range from 13% to 39% (Pallanti et al., 2004). It has been linked to poorer outcomes and often remains untreated (Lysaker & Hammersley, 2006).

There has been debate as to whether SA in psychosis is associated with similar causes and correlates to classic SA, or whether there are factors related to psychosis that explain the high rates of SA (Lysaker & Hammersley, 2006). As previously discussed, there are similarities between the processes that are hypothesised to maintain psychosis and SA. Common factors include maladaptive schemas; interpretations of intrusive thoughts, images, or experiences that cause distress; and behaviours that maintain isolation and prevent the gathering of evidence that may challenge existing beliefs.

If SA and psychosis are underpinned by similar processes, then SA that is comorbid with psychosis may be formulated using cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) and respond to existing

Papageorgiou, 2001). However, the research summarised above has also suggested that the negative self and other beliefs of people with psychosis may be particularly strong and consistent across situations (Fowler et al., 2006). In addition, the memories underpinning images in psychosis may relate to traumatic events and be associated with PTSD symptoms (Frame & Morrison, 2001; Morrison et al., 2002). The images experienced when socially anxious may also be more likely to reflect such traumatic events and to be focused on external threat rather than being self-focused (Lockett et al., 2012; Morrison et al., 2002). These factors may have implications for the understanding of the nature of SA in psychosis and for the development of interventions. Research exploring the nature of SA in psychosis will now be discussed.

### 1.6.2 The nature of SA in psychosis.

Birchwood (2003) proposed three pathways to SA in psychosis. First, where SA predates psychosis, it may be triggered by childhood experiences such as trauma. Research has indicated high rates of trauma in people with psychosis (e.g., Resnick, Bond, & Mueser, 2003), but the relationship to SA is unclear.

Second, SA may also develop during a psychotic episode and be triggered by psychotic symptoms, as has been seen in paranoia research, which has suggested anxiety and persecutory delusions are both maintained by threat beliefs (Freeman et al., 2002). Finally, SA may develop following a psychotic episode. This occurs when the experience or diagnosis is appraised as shameful and involving social subordination. Fear of others

discovering their patient status and responding in a threatening or judgemental way leads to anxiety and avoidance.

A review of the current literature was carried out to address two questions:

- 1. What cognitive and affective factors are related to SA in psychosis?
- 2. Is SA in psychosis related to psychotic symptoms?

## 1.6.2.1 Search strategy.

Full details of the literature search methods and a summary table of the main findings and characteristics of the reviewed studies are provided in Appendices B and C. Ten studies met the criteria of the literature search. In addition, Following initial review of the literature, the researcher became aware that a new study was published meeting the inclusion criteria (Lockett et al., 2012). An additional literature search was performed and no further new studies meeting the criteria were found. Lockett and colleagues' (2012) study was included in the review, taking the total number to 11 studies. Studies were evaluated in relation to their aims and theoretical underpinnings, participants and sample size, measures, analyses, and conclusions. The results are reviewed below.

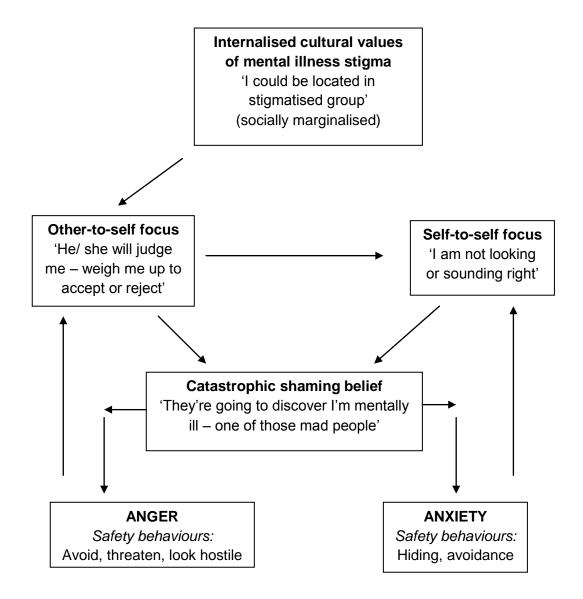
# 1.6.2.2 What cognitive and affective factors are related to SA in psychosis?

Birchwood et al. (2006) found that participants with a FEP and SA experienced greater shame and entrapment attached to their diagnosis and appraised it as leading to a loss of social status and marginalisation. This study supported a social rank account of SA (Gilbert, 2000) and also drew on

theoretical frameworks of the development of SA in psychosis (e.g., Birchwood, 2003) and evidence in relation to stigma and mental illness (e.g., Corrigan, 1998). On the basis of their findings, Birchwood and colleagues proposed a stigma model of SA in psychosis. This suggested that, prior to the development of psychosis, individuals have internalised cultural values that stigmatise mental illness. In social situations, this leads to the perception of being subordinate and the expectation of negative judgement and rejection (other-to-self focus). Attention then shifts to an impression of how the person comes across to others (self-to-other-focus) with a desire for membership of the stigmatised group not to be discovered. This reduces opportunities for external feedback from the situation. Both the other-to-self focus and the self-to-other focus result in shame-based appraisals related to how the individual will be perceived in the context of their mental illness. In line with social rank theory (Gilbert, 2000), the model proposed that submissive behaviours are initiated with the aim of reducing the perceived threat but which result in contamination of the social interaction and a reduction in opportunities to disconfirm existing beliefs. Elements of the model are concordant with Birchwood and colleagues' findings, and it successfully integrated existing cognitive behavioural models (Clark & Wells, 1995; Rapee & Heimberg, 2007) with social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987) and Gilbert's (2002) model of shame. The authors acknowledged that this is a small study and further testing was required. The model is shown in Figure 1.5 overleaf.

Figure 1.5

Birchwood and Colleagues' (2006) Stigma Model of Social Anxiety in Schizophrenia



Gumley, O'Grady, Power, and Schwannauer (2004) used a similar framework in a study exploring SA in participants considered to be at risk of psychotic relapse. They found that participants with psychosis and SA had higher levels of self-blame, entrapment and shame and lower self-esteem than participants with psychosis and no SA. Taken together, these studies

have suggested that a social rank approach to understanding SA in psychosis may be useful.

The above studies were unique in their consideration of models based on shame and social rank, but Lysaker, Ringer, and Davis (2008) also explored the relationship between self-esteem and SA in psychosis. They found self-esteem predicted SA 6 months later in participants on the schizophrenia spectrum. The strength of this study was its longitudinal design, which allowed testing of competing hypotheses about causality between the two variables. Although the study could not establish that the association is not related to confounding variables, it gave a greater indication of causality than cross-sectional studies and suggested that low self-esteem may contribute to the development of SA in psychosis.

In one of the few studies to compare SA in participants with and without psychosis, Michail and Birchwood (2009) considered whether SA in FEP is phenomenologically different from SA without psychosis. SA was associated with depression in both groups, but those without psychosis had significantly higher scores on a measure of fear of negative evaluation (the Brief Fear of Negative Evaluation Scale; BFNE; Leary, 1983a). However, the authors offered limited interpretation of this difference, and concluded that there is little difference between SA in people with and without psychosis.

Voges and Addington (2005) also considered the relationship between depression and SA in psychosis, but found no association once a Bonferroni correction was applied. Despite this, they reported that SA in FEP appeared to be related to depression. No information on power was given, making it difficult to determine whether the sample size was sufficient to detect any

association. They also reported a significant relationship between SA and negative self-statements, which is in keeping with findings of high levels of self-blame in people experiencing shame (which is linked to SA and depression) (Gilbert & Miles, 2000).

The above studies have suggested that SA in psychosis may be associated with shame, self-esteem, depression and negative self-statements. However, there are a number of methodological limitations that necessitate caution in interpreting the findings. All the studies acknowledged the use of a small sample for at least one of the participant groups, increasing the risk of Type I error (Tabachnick & Fidell, 2007). The use of a large number of measures and multiple calculations with these samples also increased the risk of Type II error (Tabachnick & Fidell, 2007). Finally, since the studies have not reported information on power, it was difficult to evaluate their conclusions.

There were also diagnostic and measurement issues associated with some of the studies. Gumley and colleagues (2004) used the Rosenberg Self-Esteem Scale (Rosenberg, 1965), the validity of which has been questioned in individuals with severe mental illness (Lecomte, Corbière, & Laisné, 2006). More broadly, Barrowclough et al. (2003) criticised the use of self-report measures for assessing self-esteem in schizophrenia as their findings indicated a disparity with an interview-based assessment of self-esteem. In addition, they suggested that self-report measures of self-esteem may lack discriminant validity due to correlation with participants' level of depression.

In Michail and Birchwood's (2009) and Voges and Addington's (2005) studies, it was the measurement or diagnosis of SA that gave cause for concern. A proportion (11.6%) of Michail and Birchwood's FEP participants did not receive a diagnosis of SA on the Schedules for Clinical Assessment in Neuropsychiatry (Wing, Sartorius, & Ustun, 1996), but did score above threshold on at least one SA measure. These participants were included in the no SA group, but analyses were not conducted to determine whether this was justified. Similarly, 30% of Voges and Addington's participants who did not have a *DSM-IV* (APA, 1994) diagnosis of SA met criteria for social phobia on the Social Phobia and Anxiety Inventory (Turner, Beidel, & Dancu, 1996), suggesting that this measure may lack specificity.

People with SA and psychosis are a very specific group and many measures of emotional disorder have not been validated in people with psychosis (Voges & Addington, 2005). In addition, many of the studies were exploratory and it may be unrealistic to expect large samples or newly developed standardised measures in the initial investigation of SA in psychosis. In a novel study, Lockett and colleagues (2012) collected qualitative data to investigate SA in psychosis. They conducted a pilot study using Hackmann and colleagues' (1998) semi-structured interview to explore the images experienced by participants with SA and psychosis. The interview measured participants' levels of anxiety, the extent to which their images were experienced from a field or observer perspective, and image clarity and level of distortion. The small sample size in this exploratory study prevented statistical analysis of the data obtained from the rating scales. However, the researchers suggested that the findings were indicative of a relationship

between the quantitative rating of image perspective and the content of images described by the themes identified in the qualitative analysis.

Observer perspective images were associated with aspects of typical SA such as embarrassment and negative evaluation, and field perspective images were associated with themes of physical danger which were more in keeping with the images related to psychotic symptoms reported by participants in Morrison and colleagues' (2002) study.

The main focus of Lockett and colleagues' (2012) analysis was on the qualitative data elicited in the interviews. They identified themes relating to fear of negative evaluation and loss of social status; the image being negatively distorted; fear of physical threat; an impression of being stared at, known, or talked about by others; images of what might happen in the immediate future; and threats from certain types of people. These themes and the findings related to image perspective supported the researchers' hypotheses. The use of template analysis (King, 2008) which involved the creation of an a priori template of themes based on existing literature which then informed the analytic process may, however, have influenced the themes identified. The template developed was based on research into images in SA and images in psychosis. As there has been no previous research explicitly exploring images in SA with psychosis, the validity of the template could be guestioned. The themes identified supported the researchers' hypotheses and no information was given as to whether measures were taken to ensure the trustworthiness of the analysis (e.g., Rolfe, 2006; Sandelowski, 1993). However, the study demonstrated

transparency in that tables were presented summarising each participant's description of their image.

Negative self-images experienced in social situations are a central aspect of cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997). Lockett and colleagues' (2012) study has been the only published research exploring such images in participants with psychosis. However, as there were only seven participants, and given the limitations described above, the findings can only be considered as preliminary, and this was acknowledged by the researchers.

#### 1.6.2.3 Is SA in psychosis related to psychotic symptoms?

Similarly to their conclusion relating to depression and SA, Voges and Addington (2005) reported an association between SA and negative symptoms in FEP that was not directly supported by their data. The relationship was not significant once a Bonferroni correction was applied. SA was also not related to positive symptoms. Other studies supported the lack of association between SA and psychotic symptoms. Pallanti et al. (2004) compared schizophrenia patients with and without SA with SA patients without psychosis in order to define the nature of SA in schizophrenia. However, their participants were in remission and had low average scores on the PANSS (Kay et al., 1987), calling into question the validity of their conclusion that SA was not related to psychotic symptoms.

Despite the limitations of the above studies, their findings were supported by Birchwood et al. (2006) and Gumley et al. (2004) who reported that there was no relationship between SA and psychotic symptoms.

Similarly, Michail and Birchwood (2009) found no relationship between SA

and symptoms measured by the PANSS (Kay et al., 1987), but SA was related to perception of threat from others. The authors concluded there may be a subgroup of socially anxious people with psychosis whose SA was related to paranoia, but analysis of subgroups would be needed to support this conclusion.

In contrast to the studies described above, the findings of Mazeh et al. (2009) and Penn, Hope, Spaulding, and Kucera (1994) suggested that there may be a relationship between SA and psychotic symptoms. Penn and colleagues reported an association between self-reported SA and negative symptoms, and Mazeh and colleagues reported a non-significant trend for patients with SA to have higher total PANSS scores. Mazeh and colleagues also found that the social fear and social avoidance subscales of the Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987) were correlated with positive and negative symptoms respectively. They suggested the lack of a significant overall effect may be the result of the study being underpowered.

The findings of studies exploring the relationship between SA and psychotic symptoms have lacked concordance. However, these inconsistencies may be related to methodological issues. Similarly to research exploring cognitive and affective factors in SA in psychosis, these studies have used small samples and have not report information on power. In addition, participants may not have been representative of the population of people with psychosis. For example, Mazeh et al. (2009) and Penn and colleagues' (1994) studies used inpatient samples. Such participants have fewer opportunities for social interaction, which may have accounted for the low occurrence of SA (11%) in Mazeh and colleagues' study.

There were also potential problems with the validity of measures used in the above studies. For example, Penn et al. (1994) attempted to accommodate the nature of their inpatient sample by including a new scale designed to assess ward-based interactions. There was no information on whether this measure was reliable. There was also no evidence that the role play assessment used has been validated for this population.

In Mazeh and colleagues' (2009) study, the Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987) was used in the assessment of the relationship between SA and positive and negative symptoms. Romm et al. (2011) found that factor analysis did not support the subscales of the LSAS, suggesting that the overall finding of no association with psychotic symptoms may be more valid than conclusions drawn based on separating social fear and social avoidance. Furthermore, in Michail and Birchwood's (2009) study, persecutory threat perception as measured by the Details of Threat Questionnaire (DoT; Freemanet al., 2001) was not measureable by the PANSS (Kay et al., 1987), suggesting that the DoT may lack construct validity. This makes their conclusion that SA is related to perception of threat from others more questionable.

Two of the studies (Huppert & Smith, 2005; Lysaker & Hammersley, 2006) reported less ambiguous findings of an association between SA and psychotic symptoms but were not without limitations. Huppert and Smith's (2005) hypotheses were based more on epidemiological data and twin and family studies than on theoretical models, but this was appropriate for their aims. The study had a sample of 32 patients and a large number of analyses. Only 12 met criteria for SA, making the findings exploratory.

Although most measures employed have been widely used within research in this area, three supplementary questions were developed to establish the presence of delusions and hallucinations. There was no evidence of any assessment of the reliability or validity of these items. The study reported a significant relationship between SA and positive symptoms, but the number of different measures of psychotic symptoms and SA suggested significant results were reported in preference to non-significant results. Lack of correlation between interview and self-report measures called measurement validity into question. The heterogeneous nature of the sample in terms of stage of illness and comorbidity may have made results more generalisable. However, differences between subgroups were not explored, and comorbid anxiety diagnoses may have confounded the relationship between SA and psychotic symptoms.

Lysaker and Hammersley's (2006) study had a more specific focus. They found delusions were related to SA, but only in participants with a lack of cognitive flexibility. They suggested the combination of difficulties in understanding shifting social rules and maladaptive interpretations of situations leads to SA. Their results were strengthened by strong inter-rater reliability and use of established measures, although psychometric data were not reported for all tests. Groups appeared to have been comparable demographically, but, in common with other studies, two of the groups were particularly small (n = 6 and n = 11), and a number of separate analyses were performed. Therefore, there remained a high risk of both Type I and Type II error in this study and the analysis could not establish causality.

#### 1.6.2.4 Overview and appraisal of the current literature.

The studies of Birchwood et al. (2006) and Gumley et al. (2004) were the most theoretically driven and supported the application of social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987) and shame based approaches to SA in psychosis. Despite limitations in sample size, the similarity of the results suggested this area warrants further exploration. The importance of self-esteem was supported by Lysaker and colleagues' (2008) findings. The studies have suggested that one of Birchwood's (2003) proposed pathways to SA in psychosis is applicable to some people with comorbid SA and psychosis, but there has been a lack of studies exploring all three pathways and investigating whether there are differences in the correlates and features of SA based on time of onset.

There has been some evidence for the role of beliefs about self and others in the development of SA in psychosis. Voges and Addington's (2005) findings were in keeping with cognitive models of SA (e.g., Clark & Wells, 1995) and research into schemas in psychosis (Fowler et al., 2006). Further research is needed to establish similarities and differences between beliefs underlying SA in psychosis and cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997). Michail and Birchwood's (2009) findings suggested measures such as the Brief Fear of Negative Evaluation Scale (Leary, 1983a) have not adequately captured the beliefs of those with SA and psychosis. In order to test the relationship between SA and cognitions that underpin paranoia (Freeman et al., 2002), research is needed that uses measures validated in a psychosis population such as the Brief Core Schema Scales (Fowler et al., 2006).

Despite hypothesised links between paranoia and SA in psychosis, the evidence has suggested that SA is not related to psychotic symptoms (Birchwood et al., 2006; Gumley et al., 2004; Pallanti et al., 2004). However, studies may have been underpowered, and methodological limitations have made it difficult to draw conclusions.

Although Lockett and colleagues' (2012) findings pointed to a useful direction for further research, they would need to be extended in order to draw conclusions regarding the extent to which the images of individuals with SA and psychosis are similar to or different from the images reported by participants in Hackmann and colleagues' (1998) study.

As already discussed, sample size was a key limitation of all of these studies, as was the lack of measures validated in this population. Voges and Addington (2005) highlighted the importance of testing the specificity and sensitivity of SA measures in a psychosis population, and the divergence between different measures found in a number of these studies has suggested that there may be problems with measurement of SA.

#### 1.6.3 Summary of SA in psychosis.

This section has considered the nature of SA in psychosis by focusing on published research using participants with both disorders. Given the methodological issues discussed, it has been difficult to draw firm conclusions. Important considerations for future research include the relationship between SA and beliefs about self and others; whether the stigma model of SA in psychosis (Birchwood et al., 2006) can be supported by research using a larger sample; and whether SA in psychosis is related to different types of memories from SA without psychosis.

Although the literature review above focused on published studies, it seemed important to consider the recent doctoral thesis research of Lockett (2011), as the current study aims to build on her findings. Lockett's research compared socially anxious participants with and without psychosis and found that participants with psychosis scored more highly on a measure of negative beliefs about others but that there was no significant difference between the groups for negative self-schemas. The results were in keeping with findings that participants with psychosis scored more highly on a measure of paranoia. In addition, Lockett used Hackmann and colleagues' (1998) interview to compare the images experienced by both groups. Qualitative analysis identified that participants with psychosis were more likely to experience images related to physical threat from others than participants without psychosis. Negative beliefs about others, residual paranoia and threat themes within imagery suggested that participants with psychosis may have related their images to memories involving interpersonal threat, but this was not explored. Some socially anxious participants without psychosis in this study also reported images related to threat, and 10 (31.3%) participants in this group had scores indicative of a clinical level of paranoia.

Lockett's (2011) qualitative analysis also sought to explore the validity of Birchwood and colleagues' (2006) stigma model of SA in psychosis. Some participants in the SA and psychosis group reported images that reflected anxiety about being judged based on their mental health. This suggested that shame may be implicated in the development and maintenance of SA in psychosis (as suggested in the Birchwood et al., 2006 model), but not all participants spontaneously reported experiencing shame and it was not

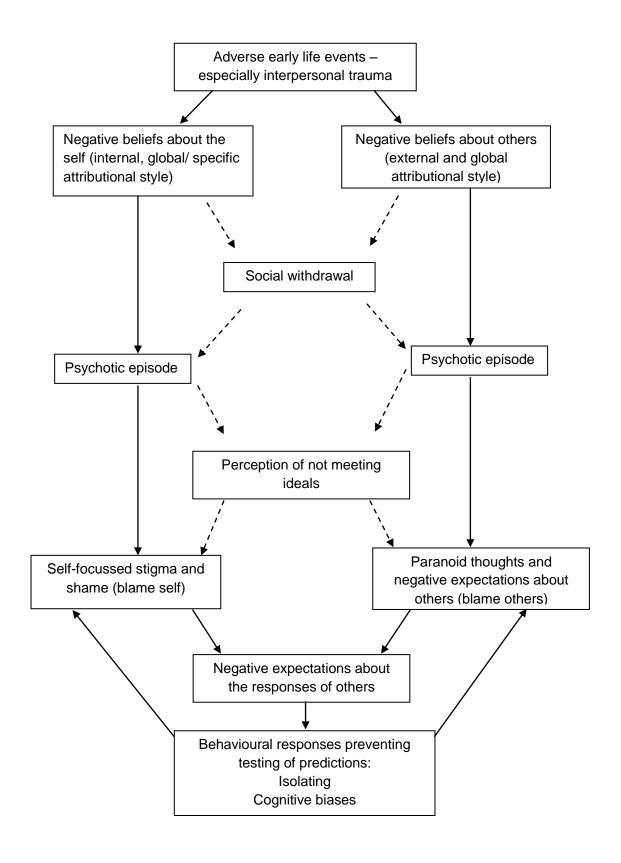
explicitly measured. In addition, Lockett suggested that the presence of themes relating to negative evaluation and fear of others indicated that paranoia and negative beliefs about others may be important aspects missing from Birchwood and colleagues' model. Given the findings in relation to participants with SA but without psychosis, paranoia may also have been a feature of SA for a subgroup of these participants. This is in keeping with Freeman and colleagues' (2005a, 2005b) hierarchy of paranoia. It therefore seems likely that paranoid beliefs at different levels of the hierarchy may be present in individuals with SA and that those with comorbid psychosis are more likely to endorse severe threat beliefs. However, 10-20% of Freeman and colleagues' (non-clinical) participants held paranoid thoughts associated with strong conviction and distress, suggesting that significant paranoia is not uncommon in individuals outside of mental health services.

On the basis of the above findings in relation to SA in participants with and without psychosis, Lockett (2011) proposed that there may be two pathways to SA in psychosis. These are underpinned by the negative beliefs that have been implicated in the development of psychosis: negative beliefs about the self may result in self-focused shame and stigma following the onset of psychosis, and negative beliefs about others may result in paranoid thoughts and negative expectations of others. She suggested that traumatic experiences may be implicated in the development of these negative beliefs. The proposed model is shown in Figure 1.6 overleaf.

Figure 1.6

Lockett's (2011) Two-Path Schema Model of the Development and

Maintenance of Social Anxiety in Psychosis



Lockett (2011) suggested that, if the two-path schema model of SA in psychosis is supported by further research, it may have direct implications for intervention approaches. These could include CBT for SA and schema therapy as well as CBT for psychosis for those clients whose difficulties relate to the 'negative others' pathway, and compassion-focused therapy (Gilbert, 2005) to target shame in those with strong negative self beliefs.

Effective treatments could have substantial implications for this population, given the prevalence of SA in psychosis, associated disability, and the fact that it has been less likely to be a focus of treatment than positive or negative symptoms (Lysaker & Hammersely, 2006). The need for further research is considered in the next section.

# 1.7 Summary of the Literature and Rationale for Further Research

Although treatments for individuals with psychosis have tended to focus on psychotic symptoms (Lysaker &Hammersely, 2006), research has suggested a considerable symptom-disability gap such that patients whose psychotic symptoms remit or reduce continue to have poor social and functional recovery (Harrison, Croudace, Mason, Glazebrook, & Medley, 1996; Johnstone, Macmillan, Frith, Benn, & Crow, 1990). SA is likely to be a considerable barrier to factors that have been shown to be associated with good functional recovery such as social support and participation in work and education (Addington, Young, & Addington, 2003; Warner, 1985). Effective treatments based on an understanding of the nature of SA in psychosis therefore have the potential for considerable impact on quality of life in this client group.

Michail and Birchwood (2009) found that socially anxious participants without psychosis scored more highly on a measure of fear of negative evaluation than those with psychosis. Findings suggested measures such as the Brief Fear of Negative Evaluation Scale (BFNE; Leary, 1983a) may not adequately capture beliefs of those with SA and psychosis. This was supported by Lockett's (2011) finding that participants with SA and psychosis who scored more highly on a measure of negative other schemas did not score more highly than participants with SA and no psychosis on the BFNE. In order to explore differences between those with and without psychosis, further research is needed using measures validated in a psychosis population alongside traditional measures of socially anxious cognitions.

Despite Birchwood's (2003) proposed pathways to SA in psychosis and Birchwood and colleagues' (2006) stigma model, there has been no research ascertaining whether traumatic experiences and shame beliefs distinguish SA in those with and without psychosis. Lockett (2011) proposed an alternative two-path model of SA in psychosis. However, the study was unable to recruit sufficient participants to achieve statistical power, and missing data reduced the sample size further for some of the measures used. Further studies are therefore required to validate cognitive aspects of this model and the role of paranoia, and research is required to test the hypothesised roles of trauma and shame which were not explored in the initial study.

Neither CBT for psychosis nor neuroleptics are effective for emotional disorders comorbid with psychosis (Birchwood, 2003). It is therefore important to develop empirically based treatments, and this first requires

further research into the nature of SA in psychosis. No research exists into whether memory rescripting can be used effectively in a psychosis population, and ascertaining whether people with SA and psychosis report similar memories to people with SA is important. In addition, if SA in this population is related to the symptoms of psychosis or to different underlying beliefs, then existing SA treatments may need to be modified, or an approach targeting residual paranoia based on CBT for psychosis may be appropriate.

The current study aims to address some of the gaps identified in the existing literature. It will compare participants with SA and psychosis with participants with SA and no psychosis in order to explore the research questions below.

#### 1.8 Research Questions

- Is SA in people with psychosis related to different cognitions from SA in people without psychosis?
- Is SA in people with psychosis related to negative schemas about self and others, and are these schemas more extreme than those endorsed by people with SA without psychosis?
- Are people with SA and psychosis more likely to endorse shame beliefs than people with SA without psychosis?
- Are there differences in whether the memories underpinning SA in those with and without psychosis are focused on self or others?
- Are the recalled events more likely to be linked to symptoms of PTSD in those with psychosis?
- How does level of paranoia impact on factors associated with SA?

Based on the literature reviewed in this introduction and driven by the above research questions, the following hypotheses were developed.

# 1.9 Hypotheses

- Participants in the social anxiety and psychosis (SAp) group will have significantly higher scores than participants in the social anxiety (SA) group on a measure of shame.
- Participants in both groups will endorse negative cognitions related to social situations, but participants in the SAp group will have significantly higher scores on a measure of negative self and negative other schemas.
- 3. There will be differences between the two groups in the memories linked to images experienced when socially anxious. Specifically, memories reported by the SA group will be more likely to be focused on own performance, whereas participants in the SAp group will report more memories focused on a threatening other or others.
- Participants in the SAp group will be more likely than participants in the SA group to report memories that are linked to symptoms of PTSD.
- 5. Participants in both groups will have high scores on a measure of paranoia, but participants in the SAp group will have significantly higher scores than participants in the SA group. Level of paranoia will have a significant effect on factors associated with SA.

#### 2 Method

### 2.1 Design

The study employed a quantitative cross-sectional design involving comparison between two groups of participants. To address the research questions, the study compared socially anxious participants with no history of psychosis (SA group) with participants who are socially anxious and have a diagnosis of psychosis (SAp group). Self-report measures of shame, socially anxious cognitions, schemas and paranoia were administered and *t*-tests were used to compare data on these measures between the groups. ANCOVAs were also conducted in order to control for confounding variables. Additional research questions were addressed using exploratory analyses of data derived from a semi-structured interview which elicited images and memories experienced in social situations together with a self-report measure of trauma symptoms. Chi-squared analysis was used to compare memory content between the groups. Logistic regression and ANCOVA were planned to compare the groups on PTSD diagnosis and overall level of trauma symptoms respectively whilst controlling for depression. Exploratory analyses were also conducted comparing participants with and without clinical levels of paranoia.

### 2.2 Participants

#### 2.2.1 Sample size.

The sample size for the study was calculated using G\*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) and checked against Cohen (1988) in order to recruit a sample with sufficient power given the expected effect sizes. As no previous research exists comparing shame in socially anxious

participants with and without psychosis, the number of participants required to test hypothesis 1 was based on a medium effect size of 0.3 (based on Cohen 1988), α error probability of .05 and power of .8. The sample size required for a 2-group ANCOVA was 45 per group.

With regards to hypothesis 2, initial research comparing SAp and SA groups (Lockett, 2011) found an effect size of 0.31 (negative self) and 0.51 (negative other). Using a 2-group ANCOVA, a sample size of 45 per group would be required to detect a significant difference assuming an effect size of 0.3.

To date there has been no research published comparing memories underpinning SA in people with and without psychosis. However, Lockett (2011) explored images reported by socially anxious participants and found those with psychosis experienced more images related to physical threat. The sample size for this hypothesis was based on Lockett's effect size of 0.38. Given  $\alpha$  error probability of .05, power of .8, and 5 degrees of freedom, the total required sample size for a chi-squared analysis is 89.

Hypotheses 4 and 5 are exploratory, as it was not known what proportion of participants would report associations between traumatic experiences and memories and SA or how many participants would score above the clinical cut-off for paranoia. Therefore, this study aimed to recruit 90 participants (45 per group), in line with calculations for hypotheses 1, 2 and 3.

## 2.2.2 Social anxiety psychosis (SAp) inclusion criteria.

Participants were clients from the Norfolk Early Intervention Service (NEIS) aged over 16 and scoring more than one standard deviation above

the normal range on the Social Interaction Anxiety Scale (SIAS, Mattick & Clarke, 1989). This cut-off has been used within NEIS to determine eligibility for an ongoing exploratory trial of CBT for social anxiety in early psychosis and has been employed with other research with this client group (Lockett 2011; Lockett et al., 2012). NEIS comprises the Central Norfolk Early Intervention Team (CNEIT) and Early Intervention teams in Great Yarmouth and Waveney and West Norfolk. This study formed part of an ongoing research programme within CNEIT, where all clients are routinely screened for SA. The researcher liaised with psychologists in the West Norfolk and Great Yarmouth and Waveney teams and attended some team meetings to facilitate additional recruitment.

NEIS accepts referrals for clients aged 14-35 who have been experiencing at least one positive psychotic symptom for at least 2 weeks at a level that has caused them significant distress or functional impairment. This client group was targeted in order to contribute to the ongoing research into the nature of and interventions for SA following FEP (Lockett et al. 2012; Reilly, Wymbs, Painter, & Fowler, 2006; Turner, Hoppitt et al., 2011; Turner, White, Lower, Gega, & Fowler, 2011). In addition, Birchwood and colleagues hypothesised that perception of social threat may be particularly heightened following a FEP as this is the period during which diagnostic stigma and striving for social acceptance are most salient (Birchwood, 2003; Birchwood et al., 2006).

During the recruitment period, Norfolk and Waveney Mental Health
NHS Foundation Trust merged with Suffolk Mental Health Partnership NHS
Trust to become Norfolk and Suffolk NHS Foundation Trust (NSFT). As

recruitment was falling short of the number needed to reach statistical power, the study was extended to the Suffolk Early Intervention Psychosis Service (SEIPS). These participants were required to meet the same inclusion criteria.

## 2.2.3 Social anxiety (SA) inclusion criteria.

Participants were those scoring more than 1 standard deviation above the normal range on the SIAS who had never had a diagnosis of psychosis. In order to match the age range to the SAp group, participants aged 16 to 35 years were recruited.

#### 2.2.4 Exclusion criteria.

The following exclusion criteria were employed:

- · insufficient fluency in English;
- · diagnosed learning disability; and
- significant neurological disease.

The aim was to reduce the likelihood that reported symptoms were related to an organic cause and to ensure that participants were able to understand the self-report measures and engage in the interview with appropriate explanation and support. Criteria were assessed and implemented through liaison with clinicians and initial participant questions.

#### 2.2.5 Recruitment.

#### 2.2.5.1 SAp group.

For all potential participants, initial contact regarding the research was made by staff working within NEIS or Suffolk Early Intervention Service (SEIS). The study recruited 30 participants into the SAp group using purposive sampling. Table 2.1 shows a breakdown of recruitment sources.

Some participants were identified by Assistant Psychologists as part of routine clinical assessment or assessment for other research projects. In these cases, consent was sought to use recently collected data on the screening measure (SIAS, Mattick & Clarke, 1989) and any other applicable measures for the current study. All remaining data were collected by the researcher. Further participants were identified through clinician reports of SA which were confirmed by the researcher using the SIAS.

### 2.2.5.2 SA group.

Thirty-five participants were recruited into the SA group through the Norfolk Wellbeing Service teams and via advertisement at UEA. Table 2.1 overleaf shows a breakdown of recruitment sources. Participants in services were recruited using purposive sampling based on clinicians identifying the presence of SA in clients or service data indicating the presence of SA in potential participants. All potential participants were given an information sheet by clinicians and only contacted by the researcher if they had given verbal consent to this contact. Some clinicians chose to administer the SIAS prior to referral into the study to ensure eligibility. In these cases, consent was sought from the participant to use this data for the current study. All further data were collected by the researcher.

At UEA, posters were displayed around campus and in the counselling service advertising the study and providing contact details for the researcher. Permission was sought via course directors to directly email students within Norwich Medical School with an invitation to participate in the study. The study was also advertised via the Faculty of Medicine and Health Sciences website and Research Participant System. All advertising invited

potential participants to contact the researcher directly. As such, a convenience sampling method was adopted in that participants were those meeting the inclusion criteria who chose to make contact with the researcher.

All data were collected by the researcher.

Table 2.1

Recruitment Sources for the Social Anxiety and Psychosis (SAp) and Social

Anxiety (SA) Groups

	SAp (N = 30)	SA (N = 35)
Norfolk Early Intervention Service	24 (80.0%)	
Central Norfolk	20 (66.7%)	
Great Yarmouth and Waveney	4 (13.3%)	
West Norfolk	0 (0.0%)	
Suffolk Early Intervention Psychosis Service	6 (20.0%)	
University of East Anglia		26 (74.3%)
Norfolk Wellbeing Service		9 (25.7%)
City Locality		2 (5.7%)
North Locality		4 (11.4%)
South Locality		0 (0.0%)
West Locality		0 (0.0%)
Great Yarmouth and Waveney		3 (8.6%)

As can be seen in Table 2.1, participants in the SAp group were recruited from services, whereas 74.3% of participants in the SA group were non-clinical.

#### 2.3 Measures

In addition to the collection of demographic data regarding age, gender, ethnicity, number of years in education, and whether participants had ever had treatment for anxiety, the following self-report measures were used and administered in the order below:

# 2.3.1 The Social Interaction Anxiety Scale (SIAS, Mattick & Clarke, 1989).

The SIAS was used to assess the presence of SA and eligibility for the current study. It is a 20-item scale using a 5-point Likert response format assessing anxiety in response to social interactions. Although it is not a diagnostic tool, items were designed to correspond to DSM-III-R descriptions of Generalised Social Phobia (American Psychiatric Association, 1987). Items include, 'I have difficulty making eye-contact with others', and 'I am tense mixing in a group'. The SIAS takes approximately 3 minutes to complete. It gives a single score ranging from 0 to 80 with a maximum of four points for each item.

Mattick and Clarke (1989) reported internal consistency for the SIAS of at least .88 across three groups of clinical participants and two groups of non-clinical participants (undergraduates and a community sample), and 3 month test-retest reliability of .93. Construct validity was explored using correlational analyses and through pre and post testing of participants involved in treatment outcome research. They suggested that a correlation of .74 with the Social Avoidance and Distress Scale (SAD, Watson & Friend, 1969) and a significant reduction is mean SIAS scores following active treatment suggested construct validity (Mattick & Clarke, 1989).

Mattick and Clarke (1989) also found that participants with social phobia had significantly higher scores on the SIAS than participants with agoraphobia, simple phobia and non-clinical control groups, suggesting discriminant validity. In the current study, the SIAS demonstrated internal consistency of Cronbach's alpha .80 (SAp group) and .84 (SA group).

#### 2.3.2 Cognitions and schemas.

In order to explore differences between cognitive aspects of SA in those with and without psychosis (hypothesis 2), the current study employed a measure of traditional socially anxious cognitions (The Brief Fear of Negative Evaluations Scale, Leary, 1983a) alongside a measure validated in a population with psychosis (The Brief Core Schema Scales, Fowler et al., 2006).

# 2.3.2.1 The Brief Core Schema Scales (BCSS, Fowler et al., 2006).

The BCSS comprises four subscales (negative self, positive self, negative other, positive other) which each contain six possible beliefs.

Respondents indicate whether they hold each belief. If 'yes' is selected, respondents indicate the extent to which they hold the belief on a 4-point Likert scale, resulting in a score between 0 and 24 for each subscale. It was designed to assess the extreme positive and negative evaluations of self and others observed to be typical of people with psychosis (Fowler et al., 2006). The current study used the negative self and negative other subscales to explore differences in negative self and negative other schemas between the groups. Example items include, 'I am weak' (negative self) and 'Other people

are hostile' (negative others). The BCSS takes approximately 2 minutes to complete.

Fowler et al. (2006) reported good or acceptable internal consistency in clinical samples for all subscales (.78-.88). For the subscales used in the current study, the alpha coefficients were .84 (negative self) and .87 (negative other) in a clinical sample. Three-week test-retest reliability in a non-clinical student sample was .84 (negative self) and .70 (negative other). Principal components analysis of all items indicated a four component solution corresponding to the subscales, suggesting a robust factor structure (Fowler et al., 2006). Correlations with other measures suggested that the BCSS assesses a distinct construct: discriminant validity was indicated with correlations between the negative self and other scales and the depression scale of the Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995) of .63 and .29 respectively and correlations with the Rosenberg Self-Esteem Scale (Rosenberg, 1965) of .53 and .23 (Fowler et al., 2006). In the current study, the BCSS demonstrated internal consistency of Cronbach's alpha .83 (SAp group) and .84 (SA group) for the negative self subscale, and .94 (SAp group) and .84 (SA group) for the negative other subscale.

# 2.3.2.2 The Brief Fear of Negative Evaluations Scale (BFNE, Leary, 1983a).

The BFNE contains 12 items related to the extent to which individuals expect to be negatively evaluated by others. Responses are on a 5-point Likert scale and example items include, 'I am afraid others will not approve of me' and, 'I often worry that I will say or do the wrong things'. It takes approximately 3 minutes to complete and results in a single score between

12 and 60. In the current study, the BFNE was used to assess negative cognitions related to SA. It was included for the comparison of the groups on a measure that has been widely used to assess socially anxious cognitions alongside a measure designed to assess beliefs associated with psychosis (BCSS; Fowler et al., 2006) in order to explore the range of thoughts and beliefs in both groups.

Reliability and validity have been demonstrated in non-clinical samples. Leary (1983a) demonstrated internal consistency of alpha .90 and 4-week test-retest reliability of .75. Correlations of .19 - .35 with the anxiety and avoidance subscales of the SAD (Watson & Friend, 1969) and with the Interaction Anxiousness Scale (Leary, 1983a) suggested that the BFNE measures a distinct construct. In the current study, the BFNE demonstrated internal consistency of Cronbach's alpha .76 (SAp group) and .69 (SA group).

# 2.3.3 The Other as Shamer Scale (OAS, Goss, Gilbert, & Allan 1994).

The OAS (Appendix D) was designed as a measure of external shame and is a modification of The Internalised Shame Scale (ISS, Cook, 1993). It comprises 18 self-report items on a 5-point Likert scale relating to perceptions of how others judge the self. Example items include, 'Other people put me down a lot' and, 'People see me as unimportant compared to others'. The OAS takes approximately 3 minutes to complete and gives a total score between 0 and 72.

The OAS was used by Birchwood and colleagues (2006) to evaluate the application of social rank theory (Gilbert, 1989, 1992; Price & Sloman,

1987) to SA in psychosis. They found that first episode psychosis participants who experienced SA scored more highly than those without SA, suggesting that the OAS is an appropriate measure for this population. It has also been used to explore social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987) in relation to SA, shame and related cognitive and emotional factors in clinical and non-clinical populations (Gilbert, 2000; Gilbert & Miles, 2000). There is currently no research comparing scores on this measure in participants with and without psychosis. In the current study, the OAS was used to explore differences in levels of shame between the groups (hypothesis 1).

The ISS has demonstrated high internal consistency (.94) and test-retest reliability of .94 (Goss, Gilbert, & Allan, 1994). Birchwood et al. (2006) found Cronbach's alpha of .90 for the OAS in their psychosis sample. In a group of participants with depression, Gilbert (2000) found a moderate correlation (0.52) between the OAS and the BFNE (Leary, 1983a), suggesting the OAS measures a related but distinct construct. Significant correlations of .65 and .81 with the shame subscales of the Test of Self-Conscious Affect (Tagney, Wagner, & Gramzow, 1992) and the Personal Feelings Questionnaire 2 (Harder & Zalma, 1990) respectively suggested convergent validity. In the current study, the OAS demonstrated internal consistency of Cronbach's alpha .93 (SAp group) and .90 (SA group).

# 2.3.4 Green et al. Paranoid Thoughts Scale (GPTS, Green et al.,2008).

The GPTS incorporates two 16 item 5-point Likert scales assessing ideas of persecution and social reference. These ideas have been found to

present on a continuum in the general population, and the GPTS was designed to assess both clinical and subclinical levels of paranoia across clinical and non-clinical groups (Green et al., 2008). It takes approximately 3 minutes to complete and yields subscale score between 16 and 80 or a total score between 32 and 160. Scores from 4 to 20 assessing conviction, preoccupation, and distress can also be calculated within each subscale.

In the current study, total GPTS scores were used to compare level of paranoia between the groups and the number of participants with scores indicating a clinical level of paranoia (hypothesis 5). Clinical level of paranoia was defined as a total score of 68 or greater (personal communication from C. Green, as cited in Lockett, 2011), and exploratory analyses were conducted by splitting the sample into participants with and without paranoia. Example GPTS items include, 'People have been dropping hints for me' (social reference) and, 'People have intended me harm' (persecution).

Green et al. (2008) demonstrated total and subscale internal consistency of .68-.95. Test-retest reliability was .81-.88 over 2 weeks. Total GPTS score correlations with the Paranoia Scale (Fenigstein & Vanable, 1992) were .81 and .71 in clinical and non-clinical groups respectively, whereas correlations with the scores on the Peters et al. Delusions Inventory (Peters et al., 1999) for the same groups were .43 and .39, suggesting concurrent and discriminant validity. In the current study, the GPTS demonstrated internal consistency (total scale scores) of Cronbach's alpha .97 (SAp group) and .94 (SA group).

#### 2.3.5 Brief Symptom Inventory (BSI, Derogatis, 1975).

The BSI consists of 53 items measuring nine dimensions of psychological symptoms and three distress indices. It takes approximately 8 minutes to complete and raw scores on the subscales are used to calculate a mean score which is converted into a *t*-score based on the participant's reference group (inpatient/outpatient/non-patient; male/female).

In the current study, the depression subscale was used to assess level of depression as a potential confounding variable in the comparison of shame, cognitions, schemas and trauma symptoms between the groups (hypotheses 1, 2 and 4). The subscale consists of six items rated on a 5-point Likert scale. Respondents are required to indicate how much they have been distressed by each item over the past 7 days. For example, 'Feeling no interest in things'.

For the purposes of controlling for actual levels of depression, all participants' depression scores were converted to a *t*-score using the male and female non-patient norms provided by Derogatis (1993). This was consistent with previous use of the measure for research purposes (e.g., Erickson, 2003; Nelson & Wampler, 2002).

Derogatis (1975, 1993) reported test-retest reliability for the different subscales of the BSI of .68 - .91 and internal consistency for the depression subscale of .85. Subscale correlations with relevant scales from the Minnesota Multiphasic Personality Inventory-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) averaged above .50, suggesting satisfactory construct validity. Items for the subscales were selected based on factor analysis of the SCL-R-90 (Derogatis, 1975, 1977), of which the BSI is a short

version. BSI subscales were able to correctly classify participants in a FEP population according to whether they had low or high scores for general symptoms on the Positive and Negative Syndrome Scale (PANSS, Kay, Fiszbein, & Opler 1987) in 72.5% of cases (Preston & Harrison, 2003). In the current study, the depression subscale demonstrated internal consistency of Cronbach's alpha .91 (SAp group) and .83 (SA group).

#### 2.3.6 Memories and trauma symptoms.

Hypotheses 3 and 4 involved the exploration of memories underpinning any images experienced whilst socially anxious and whether these memories were linked to trauma symptoms. The semi-structured interview used to explore memories is an amalgamation of two interviews developed by Hackmann and colleagues to explore images (Hackmann et al., 1998) and memories (Hackmann et al., 2000) underpinning SA. The imagery interview was piloted and adapted (with permission from the first author) for previous research (Lockett et al., 2012). For the current study, the researcher also included the additional memory interview components.

These questions do not elicit quantitative data on the focus of any memories elicited. Therefore, for the purpose of exploring hypothesis 3, the rating scale developed by Hackmann et al. (1998) to assess the self/other focus of images in the original interview was adapted to apply to memories and added as Scale 5 in order to assess the extent to which participants' memories were focused on themselves or on others.

The final interview was piloted by the researcher and feedback obtained from one patient with a diagnosis of psychosis and comorbid SA prior to commencing the study. The interview takes approximately 30

minutes, with some variation depending on whether participants experience relevant images and can identify a related memory. See Appendix E for the final interview and rating scales.

The interview asks participants whether they experience images when socially anxious – for example, having an impression of how they think they appear to other people or an impression of how others may be reacting to them even if they are not looking at them. Participants who describe an image are asked to recall their first recollection of having the thoughts, sensations, emotions and/or experiences reflected in the image and are asked whether there is a particular memory that seems to be closely related to that image. They are asked to describe the images and memories elicited in detail, and are also shown visual analogue scales and asked to rate their level of anxiety, the perspective of the image and of the memory (more focused on self or others), how distorted the image is compared with real life, and similarities between the elicited memory and the image experienced in current social situations. As such, the interview elicits quantitative data from the rating scales and qualitative data from participants' descriptions.

In the current study, in order to explore differences between the groups in whether the memories elicited were focused on own performance or a threatening other or others (hypothesis 3), the self/other focus of memories was assessed on a 7-point scale. The scale ranges from -3 (completely focused on others/another person) to +3 (completely focused on myself as though looking from outside).

There is no psychometric data available for the interview. However, the imagery interview was found to effectively elicit the images of participants

with psychosis in a pilot study (Lockett et al., 2012) and was then used to compare the images of participants with and without psychosis (Lockett, 2011). The amalgamated interview has been used in previous research with socially anxious participants (Hackmann et al., 2000; Wild et al., 2008). Consistency between participants was maximised by all interviews being completed by the researcher. Participants' responses are summarised and checked at regular intervals throughout the interview. Audio recordings of the interviews were made. Due to time constraints, interviews were not rated by a second researcher. However, the rating of interest to the current study is that of the self/other focus of participants' memories. These ratings were made by the participants.

In order to explore differences between the groups in the presence of trauma symptoms related to the memory elicited in the interview (hypothesis 4), participants who reported a memory were asked to complete the Self-Rating Scale for PTSD (SRS-PTSD, Carlier, Lamberts, Van Uchelen, & Gersons, 1998) in relation to the event in that memory. The SRS-PTSD consists of 17 items on a 3-point rating scale and was developed from the Structured Interview for PTSD (SI-PTSD, Davidson, Smith, & Kudler, 1989) to provide a briefer measure of PTSD in a self-report format. The SI-PTSD was developed according to DSM-III criteria and was adapted for the SRS-PTSD to assess symptoms according to DSM-III-R criteria. Scoring has been adapted to meet DSM-IV criteria by including physiological arousal within the reexperiencing symptom cluster rather than the hyperactivation cluster (Carlier et al., 1998).

The SRS-PTSD takes approximately 10 minutes to complete and yields scores on three symptom clusters. Diagnosis of PTSD requires the presence of at least one reexperiencing, three avoidance, and two hyperarousal symptoms. Questions relate to the effects of a specific event over the past 4 weeks. Example items include, 'I repeatedly dreamed about the event' (reexperiencing), 'I did my best or forced myself not to think about the event' (avoidance), and, 'Ever since the event, I have felt less at ease or less safe' (hyperarousal). In addition, a total symptom score (0-17) was calculated in order to compare the groups on subclinical trauma symptoms.

Carlier et al. (1998) demonstrated internal consistency of .96 (total scale) and .88-.93 for the SRS-PTSD subscales. Factor analysis supported a three-factor solution corresponding to the subscales (Carlier et al., 1998). When compared to the SI-PTSD, the SRS-PTSD demonstrated sensitivity of 86% and specificity of 80%. In the current study, the SRS-PTSD demonstrated internal consistency of Cronbach's alpha .92 (SAp group) and .82 (SA group).

A number of the measures (SIAS, BCSS, BFNE, GPTS, BSI and the imagery components of the semi-structured interview) have already been used within CNEIT's ongoing research programme. It was intended that the choice of these measures would reduce burden of assessment and allow comparison with previous research within the team (e.g., Lockett, 2011).

#### 2.4 Ethical Considerations

The study was reviewed and approved by the Norfolk Research Ethics

Committee who also conducted a non-NHS site specific assessment,

granting a favourable opinion on the proposed recruitment from the

University of East Anglia. Research Governance approval was granted by the Research and Development departments for Norfolk & Waveney Mental Health NHS Foundation Trust and NHS Norfolk and NHS Great Yarmouth & Waveney. Following the Trusts' merger, research governance approval to extend recruitment for the SAp group into Suffolk was granted by Research and Development for Norfolk and Suffolk NHS Foundation Trust. See Appendices F and G for confirmation of these approvals.

#### 2.4.1 Informed consent.

Participants were given an information sheet (PIS) to consider at least 72 hours before consent was sought (Appendices H, I and J). The PIS gave information on the aims of the study and explained what would be involved and that participation would not affect current or subsequent care. It informed participants that they could withdraw from the study at any point, without giving a reason. Confidentiality was explained and relevant contact numbers provided. The consent form (Appendix K) obtained consent to record interviews. Informed consent was taken by the researcher. For Suffolk participants, information sheets and consent forms were updated with the new Trust logo (Appendices L and M).

#### 2.4.2 Risk.

The main risk was seen to be that of distress, particularly where SA is underpinned by trauma. For this reason, it was decided that all interviews would be conducted by the researcher. Where self-report data was collected by Assistant Psychologists, they were trained in psychological assessment as part of their current job role and closely supervised by qualified Clinical Psychologists. The researcher is experienced in psychological assessments

and interviews. In the event of distress, the researcher terminated the interview, discussed the source of distress and offered support. If necessary, participants were signposted to their care co-ordinator. For participants not within services, a similar procedure was adopted, and they were signposted to their GP or the university counselling service. In two cases, the interview was paused when the researcher observed that the participant appeared upset. Both participants chose to continue with the interview when the source of their distress had been explored. Difficulties and risks were discussed with the researcher's clinical supervisor.

During the course of the research, 13 participants indicated on the BSI that they had been distressed 'quite a bit' or 'extremely' by thoughts of ending their life. In these cases, this was discussed further to establish whether there were any associated plans or intentions. Where participants clearly stated that they had no intention of acting on these thoughts, appropriate signposting was offered and the conversation recorded and subsequently discussed with the researcher's clinical supervisor. Three participants in the SAp group either described having considered plans for ending their life or thought that they might act on their suicidal thoughts in the future. All of these participants gave consent for the researcher to discuss this with their care co-ordinator. No participants described immediate plans to harm themselves and all participants in the SA group stated that they had no intention of acting on any thoughts of ending their life. Should discussions have identified significant risk or if participants had not consented to discussion of possible risks with their care co-ordinator, the procedures outlined below would have been adopted.

Only participants with completed risk assessments were offered home interviews. The researcher was in contact with a clinician from CNEIT before and after appointments, in compliance with the Trust's lone working policy.

Assistant Psychologists collecting self-report data within CNEIT utilised their buddy system to ensure researcher safety for home visits. This involved contacting an identified team member before and after an appointment.

### 2.4.3 Data storage and confidentiality.

Consent forms were stored separately from research data and linked only through code numbers. Contact information was only given to the researcher with prior consent from the participant. For those not in services, initiation of contact with the researcher was by the participant.

Participants were given the option of having assessment information shared with their service. Information was only shared without consent if the assessment revealed a serious risk. This was made clear to participants in the information sheet and at the start of the assessment. Had any such risks become apparent, a documented plan was in place to inform the participant's care team, the crisis resolution and home treatment team (CRHT), their GP, or the police, as appropriate. For those not in services, the researcher would seek consent to contact the participant's GP or another appropriate contact or would have sought advice from CRHT or the emergency services. Risks were discussed with the researcher's clinical supervisor. Further action was not required for any participant not in services.

Research data were held securely. Documents were stored in locked filing cabinets within Norfolk and Suffolk NHS Foundation Trust (NSFT) premises. Recordings were saved onto a secure NHS hard drive and an

encrypted memory stick stored securely on NSFT premises. No participant identifiable details were recorded on the SPSS database used to analyse the results of the study. In accordance with ethical approvals, participant consent forms were stored for 12 months before being destroyed. Non-identifiable research data will be retained for 5 years, in accordance with NHS protocols and the requirement that research data is archived and accessible for critical review (Department of Health, 2005).

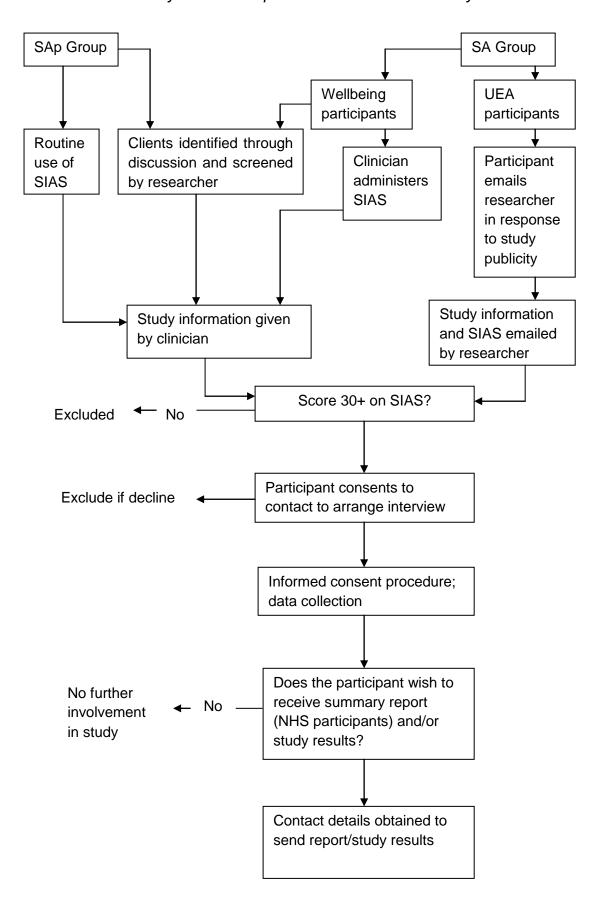
## 2.5 Procedure

#### 2.5.1 Recruitment.

Telephone contact with potential participants was made using a pay as you go SIM card. This was not used for any other purpose and was destroyed upon study completion. All participants were given the researcher's email address on the study information sheet should they wish to make contact regarding the research at a later point. Figure 2.1 illustrates the recruitment pathways and study involvement for all participants.

Figure 2.1

Recruitment Pathways and Participant Involvement in the Study



## 2.5.1.1 SAp group.

Potential participants were identified through routine use of the SIAS and discussion with clinicians who were made aware of the research study. Those clients with a score of at least 30 on the SIAS and those without a recent SIAS score who were identified by clinicians as feeling anxious in social situations were informed of the study by a clinician from within their team. Care co-ordinators were consulted regarding the appropriateness of the potential participant for the research, as documented in the research protocol. Potential participants were given an information sheet by a clinician. Those who expressed an interest in the research were asked for consent to be contacted by the researcher. Those identified as appropriate for the study as part of clinical or research assessments by an Assistant Psychologist gave permission to incorporate the research measures within the existing assessment process and consent was sought for the researcher to attend to conduct the semi-structured interview and any remaining self-report measures. At least 72 hours elapsed between participants receiving the information sheet and a subsequent meeting. On meeting with the researcher, participants had a further opportunity to ask questions prior to consent being taken.

## 2.5.1.2 SA group.

## 2.5.1.2.1 Clinical population.

The researcher met with clinical leads of the Wellbeing teams in Norfolk to inform them of the study and seek permission to discuss with clinicians. The Wellbeing service incorporates the Improving Access to Psychological Therapies (IAPT) service and Linkworker teams. Time was

spent building relationships with service leads and clinical teams to aid recruitment. The researcher attended team meetings and provided clinicians with study information. Contact with teams and monitoring of recruitment was maintained throughout the study. Further time was given to maximising recruitment from those teams that provided additional opportunities for cooperation. The researcher held an additional honorary contract to work within the clinical team of the North Norfolk Wellbeing service. This involved regular attendance at triage meetings to aid identification of suitable participants. In addition, following approval, the service lead was able to provide an anonymised database of past and current referrals to the service with diagnostic codes. This was used to identify numbers of potential participants by allocated clinician. Clinicians were then contacted individually by the researcher to discuss whether these clients were on their existing caseloads and would be suitable for the research.

Clinicians in the City Locality Wellbeing Service identified a SA group as a possible source for recruitment. Arrangements were made for the group facilitators to discuss the research with two consecutive group cohorts and obtain consent from group members for the researcher to attend to discuss the research further and answer questions. Group members were then given time to consider the study information and invited to either contact the researcher directly or give consent to the group facilitators at a subsequent meeting to pass on their contact details.

Potential participants identified by clinicians were given the study information sheet by the clinician and asked for consent to be contacted by the researcher. The researcher then made telephone contact and answered

any questions prior to the potential participant deciding whether they wished to arrange an appointment. All clinical participants were given the choice of meeting in an NSFT clinic room, GP surgery, a private room at UEA, or their home (subject to risk assessment).

## 2.5.1.2.2 Non-clinical population.

Participants from UEA had either received an email about the study or responded to advertisement of the research or information obtained via the counselling service. The email to students in Norwich Medical School included the study information sheet and was responded to by only two students (less than 1%). This may have been because permission to send the email was obtained after other forms of advertising had been in place for a number of weeks. Potential participants responding to advertisement of the research were sent an email answering any questions with an attached information sheet. The SIAS was also attached to the email and the option given for potential participants to complete this electronically to ensure they met study criteria or to delay completion until they met with the researcher. Respondents identified as not meeting criteria based on age were signposted to their GP and services within the university should they require support. Twenty-two of the remaining potential participants (84.6%) chose to complete the SIAS electronically, and four participants (15.4%) chose to complete the screening measure together with the researcher as part of the interview process.

If no response was received to the researcher's reply to the potential participant's initial contact, a follow-up email was sent following a gap of at least 7 days. This offered to answer any further questions or to ensure that

the recipient received no further contact and all emails were deleted if they had chosen not to participate. If appropriate, arrangements were made by email to conduct an interview at UEA. The option of a telephone call was also offered. Table 2.2 below shows the outcome of all initial responses to UEA recruitment methods in relation to eligibility and participation in the study.

Table 2.2

Outcome of Initial Responses (n = 52) to UEA Recruitment

	N	%
Consented into study	26	50.0
Declined	20	38.5
Ineligible	6	11.6
Age > 35 years	4	7.8
SIAS score < 30	2	3.8

Note. SIAS = Social Interaction Anxiety Scale (Mattick & Clarke, 1989).

Informed consent was obtained at the start of the meeting. Collection of all data and obtaining consent were the responsibility of the researcher.

## 2.5.2 Data collection.

All data were collected between October 2011 and April 2012. After obtaining informed consent, the interviewer remained with participants whilst they completed the self-report measures in order to answer questions and provide support but maintained a low-key presence using reading material to avoid scrutinising the participant. Some participants preferred to work through each measure with the researcher – in these cases, the researcher

read the questions as printed and provided additional explanations where required. The SRS-PTSD was completed after the semi-structured interview. All other measures were completed prior to the interview to avoid the interview experience affecting how the questions were answered. In all cases where consent was provided (n = 62, 95.4%), the semi-structured interview was audio recorded and responses were noted beneath each question on the interview schedule. Three participants declined to have their interviews recorded. In these cases, more detailed notes were made of participants' responses.

The length of time required for data collection from each participant varied depending on the relevance of the semi-structured interview to their experiences. The maximum time required was around 90 minutes to obtain consent, answer questions, complete all measures and debrief.

Following data collection, participants were given the opportunity to discuss the purpose of each measure and the interview in relation to the aims of the research. Any additional questions about the study were answered. All participants were given the option of supplying their contact details in order to receive a summary of the study findings upon completion. These details were stored securely with their consent form and separately from their research data. Participants recruited through NHS services also had the option to receive a summary report of the assessment. With their consent, this was also sent to their care co-ordinator. See Appendix N for an example of an anonymised report.

## 2.6 Plan of Analysis

Questionnaire responses for each participant were checked during the interview session to minimise the level of missing data. Missing questionnaire responses were replaced using prorating which involved substituting the missing value with the participant's mean response on that measure or subscale. This was seen as an appropriate method given that total scores rather than scores for individual items were used in the analyses and prorating has been seen as more reliable when the proportion of missing values is small (Tabachnick & Fidell, 2007). With regards to the semi-structured interview and the SRS-PTSD, missing responses or questions that were not applicable (e.g., if the participant did not report a memory) will be excluded from the analyses.

All data will be analysed using Statistical Package for Social Sciences for Windows, version 18.0 (SPSS, 2010). Descriptive statistics will be calculated for both groups and each variable. Data distributions will also be examined for normality. Skewed data will initially be treated by applying transformations to the relevant variable. In the event that this does not result in normally distributed data, appropriate non-parametric tests will be used.

Internal consistency for each self-report measure was calculated and demographics and SIAS scores of both groups will be compared for significant differences using independent samples *t*-tests. The following analyses will be employed:

2.6.1 Hypothesis 1: Participants in the SAp group will have significantly higher scores than participants in the SA group on a measure of shame.

An independent samples *t*-test will be conducted to compare total OAS scores between participants with and without psychosis. Should a significant difference between the groups be detected, an ANCOVA will be employed in order to control for depression and trauma symptoms. This will involve entering BSI depression subscale *t*-scores and number of SRS-PTSD symptoms as covariates.

2.6.2 Hypothesis 2: Participants in both groups will endorse negative cognitions related to social situations, but participants in the SAp group will have significantly higher scores on a measure of negative self and negative other schemas.

Independent samples *t*-tests will be conducted to compare total BFNE and BCSS negative self and negative other scores between participants with and without psychosis. Where significant differences between the groups are found, ANCOVAs will be used to compare both groups' total scores whilst controlling for depression and trauma symptoms. BSI depression subscale *t*-scores and number of SRS-PTSD symptoms will be entered as covariates.

2.6.3 Hypothesis 3: There will be differences between the two groups in the memories linked to images experienced when socially anxious. Specifically, memories reported by the SA group will be more likely to be focused on own performance, whereas participants in the SAp group will report more memories focused on a threatening other or others.

This will be an exploratory analysis comparing the focus of the memories of those participants who report that any images experienced when socially anxious are linked to a specific remembered event. The scores for self/other focus of memories elicited using the semi-structured interview will be compared between the groups using Pearson's chi-squared analysis.

2.6.4 Hypothesis 4: Participants in the SAp group will be more likely than participants in the SA group to report memories that are linked to symptoms of PTSD.

This will be an exploratory analysis of responses to the SRS-PTSD completed by those participants who report a memory in the semi-structured interview. Pearson's chi-squared analysis will be used to compare the groups on the presence/absence of PTSD according to the SRS-PTSD. Should this be significant, it will be followed by conducting a logistic regression analysis in order to control for the effect of depression. An independent samples *t*-test will be used to compare the groups on total number of symptoms on the SRS-PTSD to assess differences in subclinical symptoms. If a significant difference between the groups is found, an ANCOVA will be conducted to control for the effect of depression. In the logistic regression and ANCOVA,

depression will be controlled for by entering BSI depression subscale *t*-scores as a covariate.

2.6.5 Hypothesis 5: Participants in both groups will have high scores on a measure of paranoia, but participants in the SAp group will have significantly higher scores than participants in the SA group. Level of paranoia will have a significant effect on factors associated with SA.

Descriptive data relating to total GPTS scores will be explored in order to compare the mean GPTS score for each group to normative data (Green et al., 2008) and to ascertain the number of participants in each group with a score indicative of a clinical level of paranoia (a score of 68 or greater; personal communication from C. Green, as cited in Lockett, 2011). An independent samples *t*-test will then be conducted to compare the total scores of participants with and without psychosis. Additional exploratory analyses will be conducted to compare participants with and without clinical levels of paranoia. Scores on the OAS, BFNE, BCSS negative self and negative other subscales, and total number of SRS-PTSD symptoms will be compared using independent samples *t*-tests. The focus of memories reported by participants with and without paranoia will be compared using Pearson's chi-squared analysis.

## 3 Results

#### 3.1 Overview

This chapter begins by presenting descriptive details of the sample and outlining the data screening process. Descriptive statistics are presented for each of the variables explored by the study hypotheses and the treatment of data violating the assumptions of parametric tests is described. The results of statistical analyses for each hypothesis are then presented, followed by the rationale for and results of subsidiary analyses. The chapter concludes with a summary of the results.

# 3.2 Description of the Sample

A total of 65 participants were recruited into the study. Demographic details, SIAS scores and previous treatment for anxiety for participants in the two groups are detailed in Table 3.1 overleaf. The number of participants fell short of the 90 required based on the sample size calculation. In addition to regularly meeting with clinical teams, the researcher attended triage sessions with the Wellbeing service and discussed potential suitability of clients on the case loads of individual clinicians in CNEIT and Wellbeing services. The researcher also liaised with Assistant Psychologists conducting routine assessments to identify participants with a score of 30 or above on the SIAS. Extending recruitment into the Suffolk Early Intervention in Psychosis Service increased the number of participants in the SAp group. However, despite these efforts, recruitment remained challenging.

Table 3.1

Descriptive Details of the Social Anxiety and Psychosis (SAp) and Social

Anxiety (SA) Groups

	SAp (n = 30)	SA (n = 35)
Mean age (SD) in years	24.6 (5.07)	24.2 (6.03)
Gender n (%)		
Male	21 (70.0)	20 (57.1)
Female	9 (30.0)	15 (42.9)
Ethnicity n (%)		
White British	25 (83.3)	28 (80.0)
White Other	4 (13.3)	3 (8.6)
Asian	1 (3.3)	3 (8.6)
Black African	0 (0)	1 (2.9)
Mean education ( <i>SD</i> ) in	13.5 (2.4)	14.9 (2.5)
years		
Mean SIAS score (SD)	46.5 (10.65)	50.7 (11.29)
Treatment for anxiety <i>n</i>		
(%)		
Yes	12 (40)	20 (57.1)
No	18 (60)	15 (42.9)

Note. SIAS = Social Interaction Anxiety Scale (Mattick & Clarke, 1989).

The mean age of participants was reflective of the age range for clients in EI services (16-35 years). The similarity in mean age between the groups suggested that a significant number of the SA group recruited from the University of East Anglia were mature students. The high ratio of males

to females in the SAp group was representative of a psychosis population. Previous research involving this client group has tended to recruit a greater number of males than females (e.g., Lockett, 2011; Voges & Addington, 2005). Pearson's chi-squared analysis (using Yates' continuity correction for 2 x 2 tables) was conducted to test for gender differences in treatment history. There was no significant difference between male and female participants in relation to previous treatment for anxiety ( $\chi^2 = 0.50$ , p > .05). The high proportion of participants identifying themselves as White British was indicative of the limited ethnic diversity in Norfolk. Participants in both groups had a mean SIAS score more than 2 standard deviations above the mean for an undergraduate sample and a community sample (Mattick & Clarke, 1998), suggesting a significant level of SA.

*T*-tests were conducted to test for group differences in age, education and SIAS scores. Pearson's chi-squared analysis was used to test for group differences in gender and treatment history (using Yates' continuity correction for 2 x 2 tables). There were no significant differences between the groups in SIAS scores (t = -1.56, p > .05), age (t = 0.27, p > .05), treatment history ( $\chi^2 = 0.26$ , p > .05) and gender composition of the samples ( $\chi^2 = 0.42$ , p > .05). The SA group had a significantly greater number of years in education (t = -2.22, p = .03), although participants in both groups had a mean time in education indicative of at least 2 years education after the age of 16 years. Overall, the groups appeared to be well-matched. Descriptive data in relation to the study hypotheses will now be described.

## 3.3 Descriptive Data Analysis

All variables were screened for missing data and to ensure they met the assumptions for the planned statistical tests prior to analysis. Data screening was conducted using SPSS version 18.0.

## 3.3.1 Data screening.

As a result of measures employed to minimise missing data (see section 2.6) only one participant missed an item on a questionnaire. This single missing value from the SIAS (Mattick & Clarke, 1989) was replaced with the participant's mean score on this measure. There were no missing responses to the semi-structured interview questions, but participants who did not report images and/or memories were not asked the subsequent questions and participants who did not report a memory did not complete the SRS-PTSD (Carlier et al., 1998). These items were coded as 'not applicable' and excluded from the analyses. The number of participants completing each question or measure is shown within the descriptive data for each hypothesis.

#### 3.3.2 Distribution of variables.

Continuous variables were screened for normality by conducting Kolmogorov-Smirnov tests and plotting histograms of the distribution of variables for each group. In the event of significant Kolmogorov-Smirnov tests, data transformations were first applied. Where this resulted in normally distributed data, the transformed scores were used in the analyses. Where transformations were unsuccessful, non-parametric tests were used. Where non-parametric alternatives to the planned analyses were unavailable, this was taken into account when interpreting the results. For categorical data,

Yates' continuity correction is reported in the results of analyses where 2 x 2 frequency tables were analysed.

Appendix O provides normality test results tables for the continuous variables analysed. Appendix P shows histograms of the data distributions for skewed variables. Scores on the Other as Shamer Scale (OAS; Goss, Gilbert, & Allan, 1994), Brief Fear of Negative Evaluations Scale (BFNE; Leary, 1983b), Green et al. Paranoid Thoughts Scale (GPTS; Green et al., 2008), and Self-Rating Scale for PTSD (SRS-PTSD; Carlier et al., 1998) were normally distributed and appropriate for parametric tests. Both the negative self and negative other dimensions of the Brief Core Schema Scales (BCSS; Fowler et al., 2006) were positively skewed in the SA group. Square root, log and reciprocal transformations were applied. All transformations resulted in the negative self data for the SAp group becoming skewed, suggesting that non-parametric tests would be more appropriate. Square root transformation was successful in creating normality in the negative other data.

Brief Symptom Inventory (BSI; Derogatis, 1975) depression *t*-scores were negatively skewed in the SAp group. These scores were reflected and log and inverse transformations were applied. The transformed scores were then rereflected and Kolmogorov-Smirnov tests applied. Transformations were unsuccessful in creating normality, which suggested that this data may not be appropriate for analysis using parametric tests. This is considered further in interpreting the findings of multivariate analyses. Normality test results tables and histograms for transformed scores are provided in Appendix Q.

## 3.4 Hypothesis Testing

Descriptive data relating to hypotheses 1 and 2 are shown in Table 3.2 below.

Table 3.2

Means  $(\bar{X})$ , Standard Deviations (SD), and Numbers per Group (n) for OAS,

BFNE and BCSS Scores in the Social Anxiety and Psychosis (SAp) and

Social Anxiety (SA) Groups

Measure	Group	$\overline{X}$	SD	n
OAS	SAp	44.2	15.55	30
	SA	35.6	13.25	35
FNEB	SAp	45.2	10.05	30
	SA	47.5	8.83	35
BCSS negative self	SAp	9.2	5.93	30
	SA	6.0	5.30	35
BCSS negative other	SAp	9.8	7.63	30
	SA	6.2	5.00	35

*Note.* OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983a), BCSS = Brief Core Schema Scales (Fowler et al., 2006).

Where ANCOVAs were conducted in testing hypotheses 1 and 2, the analysis plan was to control for both depression and trauma symptoms. The study aimed to compare the groups on trauma symptoms that were specifically related to memories linked to SA. As such, PTSD symptoms were only assessed via completion of the SRS-PTSD if a participant's responses to the semi-structured interview indicated that the images they

experienced when socially anxious were related to a specific memory. As only 26 participants reported such a memory, a decision was made not to control for trauma symptoms, as such analyses would have limited power to detect an association. Therefore, only BSI depression subscale *t*-scores were entered as a covariate when conducting ANCOVAs. As discussed above, depression *t*-scores were negatively skewed. Where depression is entered as a covariate, the analysis should be considered subsidiary to the *t*-test and interpreted with caution. This chapter will now consider the results of statistical analyses in relation to each of the study hypotheses.

3.4.1 Hypothesis 1: Participants in the SAp group will have significantly higher scores than participants in the SA group on a measure of shame.

The SAp group had a higher mean score on the OAS than the SA group. An independent samples t-test was conducted to test for a significant difference between the groups. Levene's test for equality of variances was not significant, indicating that data variances were equal between the groups. There was a significant difference in shame scores between the groups, t(63) = 2.40, p = .02, r = .29, therefore the analysis plan was followed to conduct an ANCOVA with group (SAp, SA) as the independent variable and OAS scores as the dependent variable. Depression t-scores were entered as a covariate.

The covariate, depression, was significantly related to OAS shame scores such that higher levels of depression were associated with higher levels of shame, F(1, 62) = 14.98, p < .01, r = .44. There was no significant

effect of group on OAS scores after controlling for the effect of depression, F(1, 62) = 3.59, p > .05; r = .23.

## 3.4.1.1 Summary of results for hypothesis 1.

In support of hypothesis 1, participants in the SAp group had significantly higher scores than participants in the SA group on a measure of shame. This difference did not remain significant when depression was entered into the analysis. However, in the latter analysis, the effect of group on OAS shame scores did represent a medium effect size (r = .23) and was approaching significance (p = .06), suggesting that participants with psychosis may have experienced higher levels of shame. Given that the study did not achieve the estimated sample size required for statistical power, this may have impacted on the results.

3.4.2 Hypothesis 2: Participants in both groups will endorse negative cognitions related to social situations, but participants in the SAp group will have significantly higher scores on a measure of negative self and negative other schemas.

In order to test this hypothesis, the groups were compared in relation to differences in scores on the BFNE (reflecting negative cognitions associated with anxiety in social situations) and the negative self and negative other subscales of the BCSS (reflecting schematic beliefs).

# 3.4.2.1 Negative cognitions related to social situations: fear of negative evaluation.

An independent samples *t*-test was conducted to test for a significant difference between the groups in BFNE scores. Levene's test for equality of variances was not significant, indicating that data variances were equal

between the groups. There was no significant difference in fear of negative evaluation scores between the groups, t(63) = -1.02, p > .05, r = .13. This suggested that participants with and without psychosis did not differ in their level of endorsement of negative cognitions related to social situations, providing support for the first part of the hypothesis. Results of the second part of the hypothesis in relation to negative self and other schemas will now be described.

# 3.4.2.2 Negative self schemas.

As transformations were unsuccessful in creating normally distributed data, a Mann-Whitney U test was conducted to test for a significant difference between the groups in BCSS negative self scores. This indicated that the SAp group had significantly higher scores for negative self schemas than the SA group, U = 360.50, p = .03, r = .27.

In order to conduct the planned ANCOVA with depression *t*-scores as a covariate, square root transformations were applied to the variables as this was the transformation that was closest to being effective in creating normality in the negative self data – the only significant Kilmogorov-Smirnov test was then for negative self in the SAp group with an alpha value of .048. Levene's test was not significant, suggesting equal variances between the groups.

The covariate, depression, was significantly related to BCSS negative self scores such that higher levels of depression were associated with higher negative self scores, F(1, 62) = 5.52, p = .02, r = .28. There was no significant effect of group on negative self scores after controlling for the effect of depression, F(1, 62) = 2.26, p > .05; r = .19. The results of the

analysis of BCSS negative other scores will now be considered in order to complete the testing of hypothesis 2.

## 3.4.2.3 Negative other schemas.

An independent samples t-test was conducted to test for a significant difference between the groups in BCSS negative other scores. The square root transformed scores were used as these were normally distributed. Levene's test for equality of variances was not significant, indicating that data variances were equal between the groups. There was no significant difference in negative other scores between the groups, t(63) = 1.63, p > .05, r = .20.

# 3.4.2.4 Summary of results for hypothesis 2.

In support of hypothesis 2, there was no significant difference between the groups in the level of endorsement of negative cognitions related to social situations. Also supporting the hypothesis, participants in the SAp group had significantly higher scores on a measure of negative self schemas, suggesting that participants in this group had a higher level of negative beliefs about themselves. However, this difference did not remain significant when depression was entered into the analysis. Given the skewed nature of the negative self and depression data and the lower than expected sample size, this finding should be interpreted with caution. However, it may suggest that negative self schemas were related to depression in psychosis rather than psychosis itself. The role of depression is explored further in subsidiary analyses and appraised in the Discussion chapter.

Contrary to the hypothesis, there was no significant difference between the groups in negative other schemas. This suggested that negative beliefs about other people were not more extreme in socially anxious participants with psychosis compared to socially anxious participants without psychosis.

3.4.3 Hypothesis 3: There will be differences between the two groups in the memories linked to images experienced when socially anxious. Specifically, memories reported by the SA group will be more likely to be focused on own performance, whereas participants in the SAp group will report more memories focused on a threatening other or others.

## 3.4.3.1 Descriptive data.

Table 3.3 overleaf details the number of participants who reported experiencing images when socially anxious. This shows that the number of participants who were able to describe an image that they had experienced when feeling anxious in a recent social situation was 23 (76.7%) in the SAp group and 30 (85.7%) in the SA group. Only participants who were able to describe an image went on to answer the subsequent interview questions regarding memories associated with their images.

Table 3.3

Number of Participants Experiencing Images when Socially Anxious in the Social Anxiety and Psychosis (SAp) and Social Anxiety (SA) Groups

	Described visual image?	Non-visual image/ impression only	Has images but unable to give example	Total reporting experience of an image/impression (%)	n
SAp	20	3	1	24 (80.0)	30
SA	27	3	0	30 (85.7)	35
Total	47	6	1	54 (83.1)	65

Table 3.4 below shows the number of participants in each group who reported that there was a specific memory that seemed to be closely linked to the image that they experienced when socially anxious.

Table 3.4

Number of Participants Reporting a Specific Memory Linked to an Image Experienced when Socially Anxious in the Social Anxiety and Psychosis (SAp) and Social Anxiety (SA) Groups

	Memory (%)	No memory (%)	n
SAp	16 (69.6)	7 (30.4)	23
SA	10 (33.3)	20 (66.7)	30
Total	26 (49.1)	27 (50.9)	53

Pearson's chi-squared analysis was used to see if there were significant differences between the groups for whether a memory was

reported. Participants in the SAp group were significantly more likely to report a specific memory linked to their image,  $\chi^2(1) = 5.47$ , p = .02. Based on the odds ratio, participants in the SAp group were 4.57 times more likely to report a memory, indicating that images experienced when socially anxious may have been more highly associated with memories of specific past events for participants with psychosis than for participants without psychosis. The data in relation to the focus of these memories will now be considered.

# 3.4.3.2 Memory focus.

The semi-structured interview asked participants to rate the focus of their memory on a 7-point scale ranging from -3 (completely focused on others/another person) to +3 (completely focused on myself as though looking from outside). Due to the relatively small number of participants reporting memories and in order to increase the number of responses in each category, the ratings were grouped into 'other-focused' (scores of -1 to -3), 'equally self and other focused' (scores of 0) and 'self-focused' (scores of 1 to 3). However, the resulting contingency table had four cells with an expected frequency below 5, violating the assumptions of Pearson's chisquared analysis. This contingency table is shown in Table 3.5 below.

Table 3.5

Focus of Memories Reported by Participants Responding to the SemiStructured Interview in the Social Anxiety and Psychosis (SAp) and Social
Anxiety (SA) Groups

	Other-focused (%)	Equally self and other focused (%)	Self-focused (%)	n
SAp	6 (37.5)	2 (12.5)	8 (50.0)	16
SA	5 (50.0)	1 (10.0)	4 (40.0)	10
Total	11 (42.3)	3 (11.5)	12 (46.2)	26

It was not possible to analyse this small amount of data statistically, and 25% of cells continued to have an expected frequency below 5 when only self and other-focused memories were compared (excluding memories reported as equally focused on self and others). However, the descriptive data did not suggest a difference between the groups in the focus of reported memories and the trend was in the opposite direction to that predicted by the hypothesis – i.e. participants with psychosis reported slightly more self-focused memories and participants without psychosis reported slightly more other-focused memories. A larger sample would be required to appropriately test the hypothesis, but the current data did not allow rejection of the null hypothesis that there would be no difference between socially anxious participants with and without psychosis in whether memories underpinning SA were focused on a threatening other or others.

## 3.4.3.3 Summary of results for hypothesis 3.

The number of participants who reported a memory linked to images experienced when socially anxious was lower than expected given previous

research by Hackmann and colleagues (2000) which found that 100% of participants experienced images when anxious in social situations and 96% felt that their image was linked to a particular memory. As a result of the lower than expected number of memories elicited in the interview, it was not possible to analyse the memory focus data statistically. However, participants in the SAp group were significantly more likely than participants in the SA group to report a memory linked to an image experienced when socially anxious.

3.4.4 Hypothesis 4: Participants in the SAp group will be more likely than participants in the SA group to report memories that are linked to symptoms of PTSD.

# 3.4.4.1 Descriptive data.

Only those participants who reported a memory as part of the semi-structured interview completed the SRS-PTSD. Table 3.6 overleaf details the number of participants in each group with clinically significant scores on each symptom dimension of the SRS-PTSD (defined as one or more reexperiencing symptoms; three or more avoidance symptoms; and two or more hyperactivation symptoms, in accordance with diagnostic criteria; Carlier et al., 1998) and the numbers meeting criteria for PTSD.

Table 3.6

Number of Participants with Clinically Significant Symptoms on Each

Dimension of the SRS-PTSD and Numbers Meeting Diagnostic Criteria for

PTSD in the Social Anxiety and Psychosis (SAp) and Social Anxiety (SA)

Groups

	Re n (%)	Av n (%)	Hy n (%)	PTSD diagnosis n (%)	No PTSD diagnosis n (%)
<b>SAp</b> $(n = 16)$	15 (93.8)	10 (62.5)	10 (62.5)	7 (43.8)	9 (56.3)
SA ( <i>n</i> = 10)	7 (70.0)	4 (40.0)	5 (50.0)	3 (30.0)	7 (70.0)
Total ( <i>n</i> = 26)	22 (84.6)	14 (53.8)	15 (57.7)	10 (38.5)	16 (61.5)

*Note.* Re = Reexperiencing symptoms; Av = Avoidance symptoms; Hy = Hyperactivation symptoms.

These data suggested that the majority of participants who reported memories experienced clinically significant symptoms related to at least one of the PTSD symptom dimensions. Therefore, total number of reported symptoms may more accurately capture the range of trauma responses experienced by participants than presence/absence of PTSD diagnosis.

Table 3.7 overleaf details the mean total number of symptoms and standard deviations for participants in each group on the SRS-PTSD. Data for the total number of symptoms were normally distributed (Appendix O).

Table 3.7

Mean  $(\bar{X})$  Total Number of Trauma Symptoms Reported and Standard

Deviations (SD) on the SRS-PTSD in the Social Anxiety and Psychosis

(SAp) and Social Anxiety (SA) Groups

	$\overline{X}$	SD	n	
SAp	8.7	4.76	16	_
SA	4.8	3.12	10	
Total	7.2	4.56	26	

# 3.4.4.2 Statistical analysis: PTSD diagnosis.

Given the size of the sample, it was not appropriate to conduct the planned logistic regression analysis to explore the effect of group on PTSD diagnosis whilst controlling for the effect of depression. Pearson's chi-squared analysis was used to see if there were significant differences between the groups in the number of participants meeting criteria for PTSD based on symptoms linked to the memory reported in the semi-structured interview. However, as one cell (25%) had an expected frequency of below 5, this result should be interpreted with caution. There was no significant difference between the groups in PTSD diagnosis,  $\chi^2(1) = 0.82$ , p > .05.

Additional Pearson's chi-squared analyses were conducted to assess whether there were differences between the groups on any of the symptoms dimensions of the SRS-PTSD. There were no significant differences between participants with and without psychosis in the numbers with clinical levels of reexperiencing,  $\chi^2(1) = 1.15$ , p > .05; avoidance,  $\chi^2(1) = 0.51$ , p > .05; or hyperactivation symptoms,  $\chi^2(1) = 0.05$ , p > .05. However, these analyses

also involved contingency tables containing cells with expected frequencies below 5, increasing the likelihood of failing to detect a significant difference. In order to fully evaluate hypothesis 4, the results of analyses of total number of PTSD symptoms data will now be considered.

# 3.4.4.3 Statistical analysis: number of PTSD symptoms.

The SAp group had a higher mean total symptom score on the SRS-PTSD than the SA group. An independent samples t-test was conducted to test for a significant difference between the groups. Levene's test for equality of variances was not significant, indicating that data variances were equal between the groups. There was a significant difference in total symptom scores between the groups, t(24) = 2.87, p = .03, r = .51. Therefore the analysis plan was followed to conduct an ANCOVA with group (SAp, SA) as the independent variable and total SRS-PTSD symptoms scores as the dependent variable. Depression t-scores were entered as a covariate.

The covariate, depression, was significantly related to total symptom scores such that higher levels of depression were associated with a greater number of symptoms, F(1, 23) = 12.29, p < .01, r = .58. There was no significant effect of group on total symptom scores after controlling for the effect of depression, F(1, 23) = 0.43, p > .05; r = .13. This suggested that there was no difference between participants with and without psychosis in number of PTSD symptoms after controlling for depression.

## 3.4.4.4 Summary of results for hypothesis 4.

The categorical PTSD diagnosis data do not support the hypothesis that participants in the SAp group would be more likely than participants in the SA group to report memories that are linked to symptoms of PTSD.

However, the fact that the sample size is small and that the low expected frequency counts in the contingency table violate the assumptions of Pearson's chi-squared analysis increases the likelihood of failing to detect a significant effect (Field, 2005). The descriptive data suggested a trend for participants in the SAp group to be more likely to meet criteria for PTSD. These data also suggested that the majority of participants who reported a memory experienced significant symptoms on at least one dimension of the SRS-PTSD, with a trend for participants with psychosis to be more likely to experience symptoms on all dimensions. These trends would need to be supported by further research with a larger sample in order to draw conclusions in relation to psychosis, SA and PTSD.

In support of hypothesis 4, participants in the SAp group reported a significantly greater number of individual PTSD symptoms connected with the memory described in the semi-structured interview. The effect of group on number of PTSD symptoms represented a large effect size (r = .51). This suggested that the images experienced by socially anxious participants with psychosis were more likely to be related to memories associated with trauma symptoms than the images experienced by socially anxious participants without psychosis. However, this difference did not remain significant when depression was entered into the analysis. Interpretation of this finding will be considered in more detail in the Discussion chapter.

3.4.5 Hypothesis 5: Participants in both groups will have high scores on a measure of paranoia, but participants in the SAp group will have significantly higher scores than participants in the SA group. Level of paranoia will have a significant effect on factors associated with SA.

# 3.4.5.1 Descriptive data and data screening.

Participants in the SAp group had a higher mean total score on the GPTS than participants in the SA group. Participants in both groups had a mean score more than 1 standard deviation above that of a non-clinical reference group (Green et al., 2008). Table 3.8 overleaf provides the descriptive and normative data relating to GPTS scores and the number of participants in each group who scored at or above the clinical cut-off for paranoia. The high number of participants in both groups who scored above this cut-off for paranoia supported the rationale for the analysis plan to conduct exploratory analyses comparing participants with and without clinical levels of paranoia on factors associated with SA.

Table 3.8

Means  $(\bar{X})$  and Standard Deviations (SD) for GPTS Scores in the Social Anxiety and Psychosis (SAp), Social Anxiety (SA) and Non-Clinical Reference Groups and Number of Participants Scoring at or Above the Clinical Cut-Off for Paranoia

	$\overline{X}$	SD	Number with score ≥ 68 (%)
SAp ( <i>n</i> = 30)	88.6	35.47	21 (70.0)
SA ( <i>n</i> = 35)	69.2	24.37	19 (54.3)
Non-clinical <sup>a</sup> ( <i>N</i> = 353)	48.8	18.70	

<sup>&</sup>lt;sup>a</sup>Normative data from non-clinical development sample detailed in Green et al. (2008).

Data on each of the variables central to the other hypotheses in the study were compared by splitting the sample, regardless of group (SAp and SA) into participants scoring below 68 on the GPTS (SA and no paranoia; SAn group) and participants with a score of 68 or greater (SA and paranoia; SAPA group) who would be considered to have a clinical level of paranoia (personal communication from C. Green, as cited in Lockett, 2011). Tables 3.9 and 3.10 overleaf provide the descriptive data for these variables.

Continuous variables were screened for normality by conducting Kolmogorov-Smirnov tests and plotting histograms of the distribution of variables for each group. The only variables that were not normally distributed were BSI *t*-scores (SAPA group) and BCSS negative self scores (SAn group) and BCSS negative other scores (SAPA group). Square root transformations were successful in creating normality in the BCSS negative self and negative other data. Transformations were unsuccessful in creating

normality in the BSI data. See Appendix R for normality test results tables and histograms of skewed and transformed variables.

Table 3.9

Means  $(\bar{X})$ , Standard Deviations (SD), and Numbers per Group (n) for OAS,

BFNE, BCSS, and SRS-PTSD Scores for Participants with Social Anxiety

and Paranoia (SAPA) and Participants with Social Anxiety and No Paranoia

(SAn)

Measure	Group	$\overline{X}$	SD	n
OAS	SAPA	46.5	12.62	40
	SAn	28.6	11.21	25
FNEB	SAPA	48.2	8.69	40
	SAn	43.6	10.00	25
BCSS negative self	SAPA	9.4	5.51	40
	SAn	4.5	4.96	25
BCSS negative other	SAPA	9.8	7.04	40
	SAn	4.9	4.38	25
SRS-PTSD total symptoms	SAPA	8.9	4.24	16
	SAn	3.3	2.25	8

Note. OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983a), BCSS = Brief Core Schema Scales (Fowler et al., 2006), SRS-PTSD = Self-Rating Scale for PTSD (Carlier, Lamberts, Van Uchelen, & Gersons, 1998).

Participants with clinical levels of paranoia had higher mean scores on all self-report measures compared to participants without clinical levels of paranoia, although the large standard deviations suggested considerable within-group variation. The descriptive data in Table 3.10 overleaf also

suggested that participants with clinical levels of paranoia were more likely to report memories in the semi-structured interview that were focused on other people rather than on themselves. The differences observed in the descriptive data for both the self-report measures and the focus of memories are presented in the data analyses detailed below.

Table 3.10

Focus of Memories Reported in the Semi-Structured Interview by

Participants with Social Anxiety and Paranoia (SAPA) and Participants with

Social Anxiety and No Paranoia (SAn)

	Other-focused (%)	Equally self and other focused (%)	Self-focused (%)	n	
SAPA	10 (55.5)	1 (5.5)	7 (38.9)	18	
SAn	1 (12.5)	2 (25.0)	5 (62.5)	8	
Total	11 (42.3)	3 (11.5)	12 (46.2)	26	

## 3.4.5.2 Statistical analysis.

## 3.4.5.2.1 Level of paranoia.

An independent samples t-test was conducted to test for a significant difference between the SAp and SA groups in level of paranoia. Levene's test for equality of variances was significant, indicating that the variances in the two groups were significantly different. Therefore, the significance value was taken from the 'equal variances not assumed' row. There was a significant difference in total GPTS scores between the groups, t(63) = 2.53, p = .02, r = .30. This indicated that participants with psychosis experienced higher levels of paranoid beliefs than participants without psychosis. To

explore hypothesis 5 fully, further analyses were conducted to compare participants with and without clinical levels of paranoia on factors associated with SA. Table 3.11 below shows the results of Levene's test for equality of variances, independent *t*-test scores, significance level and effect size for these analyses, which are considered below.

Table 3.11

Levene's Test Score (F), Independent T-Test Score (t), Significance Level (p), and Effect Size (r) for Between-Groups Comparisons of Measures

Shame, Cognitions and Schema

Measure	F	t	p	r
OAS	0.41	-5.81	.00*	.29
BFNE	1.21	-1.97	.053	.24
BCSS negative self <sup>a</sup>	1.36	-3.91	.00*	.44
BCSS negative other <sup>a</sup>	0.23	-2.83	.01*	.36

Note. OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983a), BCSS = Brief Core Schema Scales (Fowler et al., 2006).

## 3.4.5.2.2 Shame, cognitions, and schemas.

Based on the hypothesis that paranoia would have a significant effect on factors associated with SA, independent samples *t*-tests were conducted to test for significant differences between participants above and below the clinical cut-off for paranoia on the GPTS. Differences were explored in relation to measures of shame, fear of negative evaluation, and negative self and other schemas. Participants with clinical levels of paranoia had

<sup>&</sup>lt;sup>a</sup>Square root transformed scores used in the analysis.

<sup>\*</sup>Significant at the  $p \le 0.05$  level.

significantly higher mean scores on OAS shame, BCSS negative self schemas and BCSS negative other schemas. There was no significant difference between the groups in BFNE scores. Analyses of differences between the SAPA and SAn groups in relation to memories and trauma symptoms will now be considered.

# 3.4.5.2.3 Memory focus and PTSD symptoms.

In the semi-structured interview, 18 (50%) of the participants in the SAPA group and 8 (47.1%) of the participants in the SAn group who experienced images when socially anxious reported a specific memory linked to their image. Based on these sample sizes, it was not possible to conduct statistical analysis of the differences between the groups in the focus of the memories reported. The descriptive data (Table 3.10) suggested a trend for participants with clinical levels of paranoia to report more memories focused on a threatening other or others.

In order to test for a significant difference between the SAPA and SAn groups in total number of PTSD symptoms linked to memories reported in the semi-structured interview, an independent samples t-test was conducted. Levene's test was not significant, suggesting equal variances between the groups. Participants in the SAPA group reported a significantly greater number of symptoms on the SRS-PTSD than participants in the SAn group, t(63) = -3.56, p = .00, r = .59. This indicated that participants with SA and paranoia were more likely to report symptoms associated with PTSD than participants with SA and no paranoia.

## 3.4.5.3 Summary of results for hypothesis 5.

In support of hypothesis 5, participants in both the SAp and SA groups had mean scores on the GPTS that were more than 1 standard deviation above the mean score of a non-clinical reference group. More than half of the participants in both groups scored within the clinical range for paranoia. However, as predicted (hypothesis 5), participants in the SAp group had significantly higher scores on the GPTS than participants in the SA group. Overall, these findings suggested that SA in both participants with and without psychosis may have been associated with paranoia but that paranoid beliefs may be held more strongly or experienced more frequently in SA in psychosis than in SA without psychosis.

In support of the hypothesis, participants with clinical levels of paranoia identified from both the SAp and SA groups had significantly higher levels of shame, negative self and other schemas and PTSD symptoms than participants without clinical levels of paranoia. Differences in fear of negative evaluation also approached but did not reach significance. A larger sample would be required to explore differences in the focus of memories linked to images experienced when socially anxious, but the descriptive data suggested that paranoia may be associated with memories focused on a threatening other or others. Overall, the findings in relation to this hypothesis suggested that the presence of paranoia may relate to a more complex presentation of SA associated with higher levels of dysfunctional beliefs and related to traumatic experiences. As such, paranoia may be a more useful distinction than psychosis in defining subtypes of SA. On this basis, further analyses in relation to paranoia were conducted and are described below.

Subsidiary analyses were also conducted in relation to group differences in depression scores.

## 3.5 Subsidiary Analyses

The results in this chapter indicated that scores on a measure of depression were associated with shame, negative self schemas, and PTSD symptoms. Therefore, additional analyses of differences between the SAp and SA groups in depression scores were conducted. In addition, there were a greater number of significant differences and larger effect sizes when comparing the SAPA and SAn groups rather than the original SAp and SA groups. As a result, additional analyses were performed to explore differences between participants with a clinical level of paranoia who did and did not have psychosis. This split resulted in groups with small numbers of participants, and the resulting analyses are therefore exploratory in nature.

#### 3.5.1 Depression.

## 3.5.1.1 Descriptive data.

Participants in the SAp group had higher mean BSI depression *t*-scores than participants in the SA group. However, participants in both groups had mean scores in the high range (based on percentile ranks associated with the *t*-distribution), with a number of participants obtaining the maximum possible *t*-score (80), suggesting that participants in both groups experienced significant depression. This accounted for the skewed nature of the depression data and suggested there may be a ceiling effect with this measure, with participants in both groups being highly comorbid for depression. When the sample was split into participants with and without clinical levels of paranoia, the mean score for the SAn group was in the high

average rather than the high range with only two (8.0%) participants in this group obtaining the maximum t-score. Table 3.12 below provides the descriptive data relating to depression and the number of participants in each group with a score at least 2 standard deviations above the mean for the normative sample (t-score  $\geq$  70, Derogatis, 1975).

Table 3.12

Means  $(\bar{X})$ , Standard Deviations (SD), and Number of Participants Obtaining a T-Score  $\geq$  70 for BSI Depression in the Social Anxiety and Psychosis (SAp) and Social Anxiety (SA) Groups and for Participants with Social Anxiety and Paranoia (SAPA) and Participants with Social Anxiety and No Paranoia (SAn)

	$\overline{X}$	SD	Number with <i>t</i> - score ≥ 70 (%)
<b>SAp</b> $(n = 30)$	72.0	8.76	21 (70.0)
<b>SA</b> ( <i>n</i> = 35)	68.5	9.66	18 (51.4)
<b>SAPA</b> ( <i>n</i> = 40)	73.6	9.31	31 (77.5)
SAn ( <i>n</i> = 25)	64.5	9.66	8 (32.0)

#### 3.5.1.2 Statistical analysis.

As the data did not meet the assumptions of parametric tests, Mann-Whitney *U*-tests were conducted to test for significant differences in depression scores between the SAp and SA groups and the SAPA and SAn groups. Table 3.13 overleaf shows the results of these analyses. There was no significant difference between participants with and without psychosis in level of depression, but participants with clinical levels of paranoia had

significantly higher mean BSI depression *t*-scores than participants without clinical levels of paranoia. This suggested that paranoia rather than psychosis was associated with higher levels of depression.

Table 3.13

Median, Range (Minimum-Maximum), Mann-Whitney U Statistic (U),

Significance Level (p), and Effect Size (r) for Between-Groups Comparisons
of BSI Depression T-Scores

Group	Median	Range	U	p	r
SAp	74.0	29 (51-80)	410.50	.13	.19
SA	70.0	36 (44-80)			
SAPA	76.5	29 (51-80)	217.00	.00*	.48
SAn	67.0	36 (44-80)			

<sup>\*</sup>Significant at the  $p \le 0.05$  level.

The second set of subsidiary analyses aimed to further explore the relationship between paranoia and factors associated with SA by comparing participants in the SAPA group who did and did not have psychosis. These analyses are considered in the section that follows.

# 3.5.2 Comparison of participants with and without psychosis in the SAPA group.

## 3.5.2.1 Descriptive data.

Data relating to shame, fear of negative evaluation, negative self and other schemas and memories were explored by splitting the SAPA group into participants with psychosis (PAp group) and without psychosis (PA group).

Tables 3.14 and 3.15 provide the descriptive data for these variables.

Continuous variables were screened for normality by conducting Kolmogorov-Smirnov tests and plotting histograms of the distribution of variables for each group. The only variable that was not normally distributed was BCSS negative other scores (PA group). Square root transformations were successful in creating normality in this data. See Appendix S for normality test results tables and histograms of skewed and transformed variables.

Table 3.14

Means  $(\bar{X})$ , Standard Deviations (SD), and Numbers per Group (n) for OAS,

BFNE, and BCSS Scores for Participants with Paranoia and Psychosis (PAp)

and Participants with Paranoia and No Psychosis (PA)

Measure	Group	М	SD	n	
OAS	PAp	49.9	13.22	21	
	PA	42.7	11.09	19	
FNEB	PAp	48.5	8.13	21	
	PA	47.9	9.17	19	
BCSS negative self	PAp	10.2	5.54	21	
	PA	8.4	5.46	19	
BCSS negative other	PAp	11.1	7.90	21	
	PA	8.2	5.62	19	

Note. OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983a), BCSS = Brief Core Schema Scales (Fowler et al., 2006).

Table 3.14 shows that the mean differences between paranoid participants with and without psychosis on self-report measures of factors

associated with SA were smaller than the differences between the SAp and SA groups and the SAPA and SAn groups. However, the sample sizes were also smaller.

As only four participants in the PA group reported a memory, group differences in memory focus could not be analysed statistically. Only those reporting a memory completed the SRS-PTSD, therefore group differences in trauma symptoms were also not explored. However, the numbers of participants in each group who reported memories (Table 3.15) was suggestive of a difference between the PAp and PA groups. The differences observed in the descriptive data in this section were analysed for statistical significance and are presented below.

Table 3.15

Number of Participants Reporting Memories Linked to Images Experienced when Socially Anxious in the Semi-Structured Interview Split by Participants with Paranoia and Psychosis (PAp) and Participants with Paranoia and No Psychosis (PA)

	Memory (%)	No memory (%)	n <sup>a</sup>
PAp	14 (73.7)	5 (26.3)	19
PA	4 (23.5)	13 (76.5)	17
Total	18 (50.0)	18 (50.0)	36

<sup>&</sup>lt;sup>a</sup>Only participants who described an image in the semi-structured interview were asked if they had a linked memory.

#### 3.5.2.2 Statistical analysis.

The current study was designed to compare SA in participants with and without psychosis. However, the results presented suggested that the

differences between participants with and without paranoia may be of greater significance. In order to test these distinctions further, independent samples *t*-tests were conducted to test for differences between paranoid participants with and without psychosis on measures of shame, fear of negative evaluation and negative self and other schemas. Table 3.16 below shows the results of Levene's test for equality of variances, independent *t*-test scores, significance level and effect size for these analyses. There were no significant differences between the groups on any of the measures.

Table 3.16

Levene's Test Score (F), Independent T-Test Score (t), Significance Level (p), and Effect Size (r) for Between-Groups Comparisons on Measures

Shame, Cognitions and Schema

Measure	F	t	р	r
OAS	1.37	1.84	.07	.29
BFNE	0.50	0.23	.82	.04
BCSS negative self	0.13	1.07	.29	.17
BCSS negative other <sup>a</sup>	1.67	0.93	.36	.15

Note. OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983a), BCSS = Brief Core Schema Scales (Fowler et al., 2006).

Pearson's chi-squared analysis (using Yates' continuity correction for 2 x 2 tables) was conducted to test for a significant difference between the groups in whether they reported a memory (versus no memory) linked to images experienced when socially anxious. Paranoid participants with psychosis were significantly more likely to report a specific memory than

<sup>&</sup>lt;sup>a</sup>Square root transformed scores used in the analysis.

paranoid participants without psychosis,  $\chi^2(1) = 7.13$ , p = .01. Based on the odds ratio, participants in the PAp group were 9.1 times more likely to report a memory. This was indicative of psychosis being associated with identification of specific traumatic or unpleasant memories in relation to SA amongst paranoid participants. It was in keeping with the data reported in the findings for hypothesis 3 that participants in the SAp group were significantly more likely to report a memory linked to images experienced when socially anxious than participants in the SA group.

## 3.5.3 Summary of subsidiary analyses.

Despite the effect of depression on the analyses of shame, negative self schemas and PTSD symptoms in the SAp and SA groups, there was no significant difference in level of depression in participants with and without psychosis. However, participants with clinical levels of paranoia had significantly higher levels of depression than participants without paranoia. This suggested that SA comorbid with paranoia is associated with high levels of depression.

Paranoid participants with and without psychosis did not differ significantly on measures of shame, fear of negative evaluations or negative self and other schemas. Paranoid participants with psychosis were significantly more likely than paranoid participants without psychosis to report a memory linked to images experienced when socially anxious. However, there were insufficient data to explore differences in memory focus or related trauma symptoms.

## 3.6 Summary of Results

The main hypotheses of the study explored differences between socially anxious participants with and without psychosis. Participants with psychosis had significantly higher scores related to shame, negative self schemas and PTSD symptoms. However, these differences did not remain significant when depression was entered into the analysis. Subsidiary analyses suggested that depression was associated with paranoia as participants with clinical levels of paranoia had significantly higher levels of depression than non-paranoid participants. There were no significant differences between the groups on measures of fear of negative evaluation or negative other schemas.

Participants with psychosis were significantly more likely to report a specific memory linked to images experienced when socially anxious. However, fewer participants than expected reported a memory, and memory focus data could not be analysed statistically. Descriptive data suggested that participants with psychosis were not more likely to report memories focused on a threatening other or others.

Participants with psychosis had significantly higher paranoia scores than participants without psychosis. However, interestingly, more than half the participants in both the SAp and SA groups scored above the clinical cut-off for paranoia. When the sample was split into participants with and without clinical levels of paranoia, there were significant differences in levels of shame, negative self and other schemas and number of PTSD symptoms, such that paranoid participants scored more highly on all these measures. Descriptive data based on a limited number of participants suggested that

paranoia may be associated with memories focused on a threatening other or others.

Subsidiary analyses comparing paranoid participants with and without psychosis found no significant differences on measures of shame, fear of negative evaluation or negative self and other schemas. However, paranoid participants with psychosis were significantly more likely to report a specific memory linked to images experienced when socially anxious than paranoid participants without psychosis. The implications of the above findings will be considered in the Discussion chapter that follows.

#### 4 Discussion

## 4.1 Overview of Study Findings in Relation to Aims and Research Questions

The current study aimed to explore the nature of SA in psychosis through a comparison with SA in participants without psychosis. In order to build on existing psychological theories, the study focused on factors central to cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) and of psychosis (Garety et al., 2001; Morrison, 2001): cognitions, schemas, paranoia, shame, memories, and trauma. The research aimed to consider the nature of these factors in SA in psychosis in order to build on the work of Lockett (2011) and potentially add to the empirical basis for future developments in interventions for SA in psychosis. The study hypotheses were developed from research questions arising from a review of the existing literature and considered whether SA in people with psychosis is associated with different cognitions, more extreme negative self and other schemas, and higher prevalence of shame beliefs compared to SA in people without psychosis. Additional research questions related to whether SA in psychosis is associated with memories that are more likely to be focused on others and linked to trauma symptoms compared to SA in people without psychosis and whether paranoia impacts on factors associated with SA.

The findings of the study suggested that participants with psychosis experienced higher levels of shame and negative self-schemas than participants without psychosis but that the groups did not differ in levels of fear of negative evaluation or negative other-schemas. Fewer than expected participants reported specific memories related to images elicited in the

semi-structured interview. However, the data did not appear to indicate an association between psychosis and memories focused on a threatening other or others as participants with psychosis reported slightly more self-focused memories and participants without psychosis reported slightly more other-focused memories.

Participants with psychosis reporting significantly more PTSD symptoms than participants without psychosis, although the difference in the number of participants meeting diagnostic criteria for PTSD was not significant. Overall, the findings suggested that SA in psychosis was more highly associated with memories linked to trauma symptoms than SA in participants without psychosis.

The study findings suggested that SA was associated with paranoid thoughts for participants in both groups, but that participants with psychosis experienced significantly higher levels of paranoia than participants without psychosis. A clinical level of paranoia was found to be associated with higher levels of shame, negative self and other schemas and PTSD symptoms. It was also associated with higher levels of depression, which may have accounted for associations between depression, shame, negative self-schemas and PTSD symptoms.

This chapter will now consider these findings in relation to existing research and evaluate the strengths and weaknesses of the study design. It will then consider the theoretical and clinical implications of the findings, offer suggestions for future research, and end with an overall conclusion.

#### 4.2 Research Findings in Relation to Previous Literature

4.2.1 Hypothesis 1: Participants in the SAp group will have significantly higher scores than participants in the SA group on a measure of shame.

In support of the hypothesis, participants in the SAp group had significantly higher scores for shame than participants in the SA group. This may have indicated that participants with psychosis experienced stigma stress, which has been found to be associated with increased SA and shame in people with mental illnesses (Rüsch et al., 2009). The findings were in keeping with Birchwood and colleagues' (2006) stigma model of SA in psychosis and added empirical support to the hypothesised role of shame in Lockett's (2011) two-path schema model. However, there was no significant difference between the shame scores of the two groups when depression was entered as a covariate. Level of depression was significantly associated with shame. This could be seen to indicate that it was higher levels of depression in participants with psychosis that led to shame beliefs. However, previous findings have suggested that shame is associated with a range of disorders, including both depression and SA (Allan et al., 1994; Gilbert, 1998, 2000), and it is possible that shame was the causal factor.

Gilbert (1992) suggested that experiences that trigger feelings of loss, humiliation and entrapment or defeat are related to both shame and depression. A psychotic episode can be considered as such an experience, resulting in post-psychotic emotional dysfunction (Birchwood, 2003). In this context, psychotic experiences are likely to trigger a perceived loss of social status and anticipation of rejection. Within social rank theory (Gilbert, 1989,

1992; Price & Sloman, 1987), such perceptions have been associated with SA and safety behaviours aimed at defending against negative evaluation (Gilbert, 2000). As such, a shame-based appraisal of psychosis is likely to result in both SA and depression, meaning that depression was more likely a consequence of shame beliefs in participants with psychosis rather than a confounding variable.

4.2.2 Hypothesis 2: Participants in both groups will endorse negative cognitions related to social situations, but participants in the SAp group will have significantly higher scores on a measure of negative self and negative other schemas.

In support of the hypothesis, participants in both groups had a mean score on a measure of fear of negative evaluation that was more than 1 standard deviation higher than the mean score for a non-clinical group (Leary, 1983a), and there was no significant difference between the two groups. This differed from Lockett's (2011) finding that participants without psychosis had significantly higher scores for fear of negative evaluation than participants with psychosis. However, both the current study and Lockett's research used relatively small sample sizes, and the mean score for the non-psychosis group in the current study was higher than the mean for the psychosis group (although not significantly so), whereas the psychosis group tended to score more highly on other measures. Taken together, the findings suggested that traditional SA measures do not tap into the complexity of the beliefs underlying SA in psychosis. This supported the findings of Michail and Birchwood (2009) that there was little difference between socially anxious

participants with and without psychosis when traditional measures of SA were the focus of the research.

The hypothesis that participants with psychosis would score more highly than participants without psychosis for negative self and other schemas was partially supported. Participants in the SAp group had higher mean scores for negative self and negative other schemas, but only the difference in negative self schemas was significantly higher. As shame has been found to be related to a perception of the self as undesirable (Gilbert, 2001; Lindsay-Hartz et al., 1995), the finding that SA in psychosis was related to higher levels of both shame and negative self-schemas (but not to higher levels of sensitivity to criticism from others) may be seen as concordant with social rank theory (Gilbert, 1989, 1992; Price & Sloman, 1987) and personality research (e.g., Ogilvie, 1987). However, it contrasted with Lockett's (2011) finding that participants with psychosis had significantly higher levels of negative other schemas but did not significantly differ from participants without psychosis on negative self schemas. In both studies, the trend was for participants with psychosis to score more highly on negative self and other beliefs, and future research with a larger sample or combining the data for the two studies may provide a clearer picture.

Compared to normative data, participants in the SAp group had higher scores than non-clinical samples for fear of negative evaluation and negative self and other schemas (Fowler et al., 2006; Leary 1983b). This added support to Lockett's (2011) two-path schema model of SA in psychosis which suggested that SA may develop either in response to negative self-evaluation, shame and stigma or negative other-evaluation and paranoia. A

perception of not meeting ideals and expecting negative judgement from others as a result was implicated in both pathways, suggesting that the fear of negative evaluation is applicable to SA in psychosis as well as typical SA. However, interestingly, the current findings suggested that the negative-other pathway may also have be applicable to participants without psychosis. This is considered further in relation to hypothesis 5 and is concordant with Wells and Clark's (1997) suggestion that schemas linked to childhood experiences may be related to SA in a subgroup of non-psychotic individuals whose SA emerges at an early age. The findings suggested that schematic beliefs may need to be more explicit within Birchwood and colleagues' (2006) stigma model. Although negative self and other beliefs may implicitly be associated with internalisation of stigma and the resulting negative automatic thoughts and shame beliefs, schemas were not included in the model.

Differences between the groups in negative self-schemas were no longer significant when depression was entered as a covariate. Similarly to the findings in relation to hypothesis 1, it seemed likely that depression could be interpreted as a confounding variable in the exploration of any factors relating to SA in psychosis as a result of the overlap between different affective constructs within emotional dysfunction resulting from psychosis. Birchwood (2003) highlighted the difficulty in distinguishing between symptoms of post-psychotic depression, SA and PTSD, and this is considered further in relation to hypothesis 4 (section 4.2.4) and in discussion of the study's theoretical implications (section 4.4).

4.2.3 Hypothesis 3: There will be differences between the two groups in the memories linked to images experienced when socially anxious. Specifically, memories reported by the SA group will be more likely to be focused on own performance, whereas participants in the SAp group will report more memories focused on a threatening other or others.

There were insufficient data to conduct statistical analyses to investigate this hypothesis. This is because fewer participants than expected reported specific memories related to images elicited in the semi-structured interview. The descriptive data did not appear to support the hypothesis, as participants with psychosis reported slightly more self-focused memories and participants without psychosis reported slightly more other-focused memories. Future research with a larger sample would be required to explore this further. Nevertheless, participants with psychosis were significantly more likely to report the presence of any memory linked to their image, which may have suggested the greater importance of early experiences for these participants. It was also concordant with Morrison and colleagues' (2002) finding that participants with psychosis commonly experienced images related to memories associated with psychotic symptoms. There may have been an overlap between such images and images associated with SA for these participants. Parallels have also been drawn between the reexperiencing symptoms of PTSD and psychotic symptoms (Butler et al., 1996), which may have accounted for the higher levels of unpleasant memories reported by participants in the SAp group. This finding suggested support for the role of adverse early life events in Lockett's (2011) schema

model. When considered alongside the finding of high rates of PTSD symptoms associated with the memories reported by participants in the SAp group, the results were in keeping with findings of the high prevalence of traumatic events and symptoms of PTSD in people with psychosis (Jackson, Knott, Skeate, & Birchwood, 2004; McGorry et al., 1991; Tarrier, Khan, Cater, & Picken, 2007).

Given that participants with SA and psychosis in Lockett's (2011) study reported more images containing themes of threat compared to participants with SA and no psychosis, it might have been expected that the memories underpinning those images would be more likely to be focused on threatening others than on own performance. However, the current data suggested that the content of images experienced when socially anxious may not correspond to the focus of associated memories. Further analysis of memory content as well as focus may lead to a clearer understanding of the relationship between memories and images in SA and SA in psychosis.

4.2.4 Hypothesis 4: Participants in the SAp group will be more likely than participants in the SA group to report memories that are linked to symptoms of PTSD.

This hypothesis was supported by the total number of PTSD symptoms reported by the SAp group, but not by the PTSD diagnosis data. Although a greater percentage of participants with psychosis met criteria for PTSD compared to participants without psychosis, this difference was not statistically significant. However, an insufficient number of participants reported a memory and completed the SRS-PTSD for an appropriately powered Pearson's chi-squared analysis, and it was not possible to conduct

logistic regression. Future research based on a larger sample is required to adequately explore differences in PTSD diagnosis.

It was possible to conduct statistical analysis of the PTSD symptoms data. The finding that participants with psychosis had a greater number of PTSD symptoms than participants without psychosis suggested that, at the least, SA in psychosis may be associated with higher levels of distress in relation to subclinical trauma symptoms. A mean number of PTSD symptoms in this group of 8.7 suggested that individuals with psychosis who reported memories linked to their SA were significantly affected by trauma related symptoms. This gave empirical support to the hypothesised role of interpersonal trauma in Lockett's (2011) schema model of SA in psychosis. It was also in keeping with Morrison and colleagues' (2002) finding that images in psychosis were commonly related to traumatic memories.

The significant association between psychosis and trauma symptoms did not remain when depression was entered as a covariate. The experience of trauma may be associated with threats to psychological wellbeing and the shattering of beliefs about the self, others, and the world (Jackson & Birchwood, 2006; Shaner & Eth, 1989). Therefore, the appraisal of psychosis as shameful, inescapable, and a threat to self-concept and social status is likely to trigger symptoms of PTSD as well as depression and SA, and this does not invalidate the finding that participants with psychosis were more likely to experience trauma symptoms (Birchwood, 2003; Birchwood et al., 2000; Cosoff & Hafner, 1998; McGorry et al., 1991; Shaner & Eth, 1989).

4.2.5 Hypothesis 5: Participants in both groups will have high scores on a measure of paranoia, but participants in the SAp group will have significantly higher scores than participants in the SA group. Level of paranoia will have a significant effect on factors associated with SA.

In support of the hypothesis, participants in both groups had mean scores for paranoia that were more than 1 standard deviation higher than a non-clinical sample (Green et al., 2008), and participants in the SAp group had significantly higher scores than participants in the SA group. The mean score for paranoia in both groups was higher than that reported by Lockett (2011). The findings supported the negative-other pathway of Lockett's schema model and added weight to the suggestion that Birchwood and colleagues' (2006) stigma model required revision to explicitly incorporate paranoia (Lockett, 2011). However, the fact that the mean score for the SA group was above the clinical cut-off for paranoia and that 54.3% of participants in this group could have been considered 'paranoid' suggested that this negative-other pathway may not have been specific to participants with psychosis. This added to the rationale for exploring the data in relation to all previous hypotheses by splitting the sample based on presence/absence of clinical levels of paranoia.

As hypothesised, when participants were grouped by presence/absence of paranoia rather than psychosis, there were significant differences in factors related to SA. Paranoid participants had significantly higher levels of shame, negative self and other schemas and PTSD symptoms. There were insufficient data to statistically analyse differences in

the focus of memories linked to images experienced when socially anxious, but the descriptive data tentatively suggested paranoia may be associated with memories focused on a threatening other or others. This could be compared to Morrison and colleagues' (2002) finding that images and memories in psychosis frequently contained themes of threat and persecution. In addition, the reexperiencing symptoms of PTSD are often accompanied by paranoia (Butler et al., 1996), and this was supported by the study findings of associations between paranoia and PTSD symptoms. The results suggested that the differences between participants with and without psychosis may have been related to the higher levels of paranoia in this group and that the hypothesis that SA in psychosis would be related to otherfocused, traumatic memories would be better applied to participants with paranoia. This is in keeping with research and theories which have suggested a relationship between persecutory delusions, adverse early events and negative schematic beliefs (e.g., Freeman et al., 1998, 2002; Trower & Chadwick, 1995). As a result of these findings, additional analyses were conducted to compare paranoid participants with and without psychosis. Implications for models of SA and SA in psychosis are considered below.

#### 4.2.6 Additional findings.

Based on the above findings when the sample was split into participants with and without paranoia and as a result of the association between depression and shame, negative self schemas and PTSD symptoms, a number of subsidiary analyses were conducted.

#### 4.2.6.1 Depression.

Participants in both groups had mean depression *t*-scores in the high range with 22.9% (SA group) and 33.3% (SAp group) obtaining the maximum possible *t*-score. This accounted for the difficulties achieving a normal distribution of the depression data, even when transformations were applied. Participants with psychosis had a higher mean depression score than participants without psychosis, and this affected the significance of the difference between the groups in levels of shame, negative self schemas and PTSD symptoms. However, the difference between the depression scores of the two groups was not significant.

When the sample was split based on paranoia rather than psychosis, the mean depression *t*-score for the non-paranoid group was in the high-average range and participants with SA and paranoia had a significantly higher level of depression than participants with SA who were not paranoid. Only two (8%) participants in the non-paranoid group obtained the maximum *t*-score, suggesting that paranoia was associated with depression. This indicated that the relationship between depression and shame, negative self-schemas and PTSD symptoms observed in the primary analyses may have been confounded by the higher levels of paranoia in participants with SA and psychosis. This is in keeping with Freeman and colleagues' (2002) cognitive model of persecutory delusions. They suggested that adverse or traumatic experiences lead to the formation of negative self and other schemas which are closely associated with premorbid anxiety and depression. Anxiety and depression in turn influence the formation of persecutory delusions, the content of which may reinforce emotional dysfunction. Delusions associated

with powerful persecutors and beliefs about persecution being deserved have particularly been associated with depression, which is further reinforced by negative secondary appraisals of the delusional experience (Chadwick & Birchwood, 1994; Freeman et al., 2002; Trower & Chadwick, 1995). As such, paranoia, depression, anxiety, trauma and negative self and other beliefs form multiple interlinked maintenance cycles in complex cases. This was supported by the fact that paranoid participants scored significantly higher for both negative self and negative other beliefs, whereas psychosis alone only differentiated the groups on negative self beliefs. It also suggested that models of SA in psychosis may need to account for comorbid depression.

As paranoia and depression were a feature of SA for the majority of participants, regardless of whether they had a diagnosis of psychosis, continuum models may more adequately capture the nature of both psychotic and non-psychotic symptoms. As a classification, 'psychosis' did not differentiate participants in the current study, but a higher level of paranoia did differentiate those participants who were more depressed, had more extreme dysfunctional beliefs and had a greater number of traumarelated symptoms. A diagnostic approach may overlook many of the maintenance cycles contributing to an individual's social disability and distress in complex cases without a diagnosis of psychosis. This is considered further below.

4.2.6.2 Comparison of paranoid participants with and without psychosis.

Participants with clinical levels of paranoia (SAPA group) were split into those with and without psychosis and compared on measures of shame,

fear of negative evaluation, and negative self and other schemas. There were no significant differences between the groups on any of these measures, suggesting that paranoia had a greater influence on the nature of SA than psychosis. This is in keeping with continuum theories of psychosis (e.g., Strauss, 1969) and Freeman and colleagues' (2005a, 2005b) hierarchy of paranoia which suggested that symptoms such as delusions occur on a continuum with normal processes and more common social-evaluative concerns and implied that a categorical distinction between participants based on diagnosis may not capture the range of experiences associated with SA. It also called into question the validity of models of SA in psychosis as not all participants with psychosis experienced clinical levels of paranoia, but some participants without psychosis experienced both paranoia and high levels of associated emotional dysfunction and negative schematic beliefs. There were insufficient data to test for significant differences between paranoid participants with and without psychosis in relation to the focus of memories and associated trauma symptoms. This was partly a result of the fact that only four participants without psychosis reported a memory linked to images experienced when socially anxious. The difference in whether a memory was reported in the interview was significant such that paranoid participants with psychosis were more likely to report a specific memory than paranoid participants without psychosis. This is the only factor within the scope of the study on which psychosis rather than paranoia differentiated the groups. Although this was based on a small sample, the odds ratio was high, with participants with psychosis being 9.1 times more likely to report a memory. This may relate to overlap between socially anxious images and

images associated with hallucinations in psychosis. Morrison and colleagues (2002) found that 74.3% of participants with psychosis identified images associated with their psychotic symptoms, and 70.8% of these participants related these images to previous events. Overall, the number of participants who reported memories (50% of paranoid participants and 49.1% of all participants) was lower than previous research. Hackmann and colleagues (2000) found that 96% of their participants reported a memory linked to an image experienced when socially anxious. However, their participants were a small post-treatment sample with a greater proportion of females and a higher mean age than participants in the current study. There was also no assessment of depression in Hackmann and colleagues' study, and this has been associated with the recall of general rather than specific memories (e.g., Mackinger, Pachinger, Leibetseder, & Fartacek, 2000). Comorbid depression in the current study may thus have made it more difficult for participants to recollect specific memories. This chapter will now consider strengths and weaknesses of the study design which may affect interpretation of the findings discussed above.

## 4.3 Strengths and Weaknesses of the Study Design

There are a number of factors which strengthened the validity of the study findings. There were also a number of weaknesses which suggested some findings needed to be interpreted with caution. These factors are considered below to allow for a balanced evaluation of the results.

#### 4.3.1 Strengths of the study.

The current study advanced existing research into SA in psychosis and addressed some of the suggestions indicated by previous studies.

Specifically, Lockett (2011) was unable to age-match participants with and without psychosis in her research. The current study recruited age-matched samples with similar gender and ethnicity distributions and similar levels of SA. Although the current study was also unable to achieve statistical power, it may be possible to combine the data from the two studies as part of ongoing research. This could lead to a sample size sufficient for appropriately powered analyses where the two studies have used the same measures. The current findings added to the data reported by Lockett in relation to cognitions, paranoia and schemas and provided the first test of the entire two-path schema model by incorporating analyses of shame, memories and trauma symptoms. The inclusion of shame bridged the gap between the research of Lockett and Birchwood and colleagues' (2006) stigma model of SA in psychosis. As such, the study was theoretically driven and incorporated aspects of cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) and more recent models of SA in psychosis (Birchwood et al., 2006; Lockett, 2011).

#### 4.3.2 Weaknesses of the study.

#### 4.3.2.1 Sample size.

Although measures were employed to maximise recruitment (see section 2.5.1.2.3), the number of participants in both groups was below that indicated by the sample size calculations needed for statistical power (45 per group). Recruitment numbers were similar to previous studies of SA in psychosis which have failed to achieve the sample size required for appropriately powered analyses (e.g., Lockett, 2011; Michail & Birchwood, 2009). Given that individuals with SA are likely to find it difficult to meet

people in a novel situation, the recruitment shortfall was perhaps not surprising.

The sample size for analyses of memory focus and PTSD symptoms was further reduced as a result of the low numbers of participants who reported a memory in the semi-structured interview. These analyses were intended to be exploratory as there was no previous research to indicate how many participants with SA and psychosis would report a memory. However, based on Hackmann and colleagues' (2000) study, the overall number was expected to be higher. Although this was not a specific question in the interview, a number of participants gave responses indicating that they had experienced a series of difficult events which they related to their SA, but they did not link one specific memory to the image they experienced. This suggested that there may have been participants who would have endorsed symptoms associated with PTSD but who did not complete the SRS-PTSD. It may have been more appropriate to assess the presence of any trauma symptoms rather than only those specifically related to memories elicited as part of the interview. However, the aim of the research was to explore traumatic memories in relation to experiences of anxiety in social situations.

Overall, the lower than planned sample sizes for all hypotheses necessitated caution in interpreting the findings. Insufficiently powered analyses increase the likelihood of failing to detect a significant difference between groups (Tabachnick & Fidell, 2007). However, the fact that a number of significant differences were detected in spite of the sample size suggested that the current study provided a valid pilot or exploration from

which further research could be developed. This is considered in more detail in the suggestions for future research below.

#### 4.3.2.2 Characteristics of the sample.

A large proportion of the SA group (74.3%) was recruited from the University of East Anglia. This was the result of lower than expected recruitment via Wellbeing services and a higher than expected response rate to University advertising. As a result, participants in this group may not have been representative of the population of people with SA. In particular, the nature of SA in students able to participate in a degree course may have been different from the nature of SA in people within mental health services. SA in students may also be related to factors specific to the experience of attending university. All participants were recruited between October and April, and those students who participated near the start of the academic year may have experienced an increase in symptoms, particularly if they were in their first year of study. Other students may also have been affected by examinations or academic presentations. Although a number of participants in the SAp group were also students, these situational and timerelated factors were more prevalent in the SA group. However, all participants met criteria for the study based on their level of SA (a score of at least 30 on the Social Interaction Anxiety Scale, Mattick & Clarke, 1989), and there were relatively few differences between the demographic characteristics of the groups. Not surprisingly, participants in the SA group had a significantly higher mean number of years in education, but the educational level of the SAp group was also relatively high (13.5 years).

The mean SIAS score for the SAp group was lower (but not significantly lower) than the mean score for the SA group. This was surprising given that anecdotal reports and previous research (Lockett, 2011) have suggested that individuals with SA and psychosis tend to score more highly on this measure. This may reflect the fact that many participants were recruited following routine screening with the SIAS rather than through targeting of individuals who were being treated for SA. A level of SA following psychosis is common (Pallanti et al., 2004), and it may have been that those with more extreme SA and associated impairment were less likely to consent into the study. The extent to which these participants were representative of the population of individuals with SA and psychosis was not known.

Participants in both groups were predominantly White British. Whilst the sample was reflective of the level of ethnic diversity in Norfolk, it is possible that individuals from different backgrounds or living in more ethnically diverse areas may have different experiences related to SA. Birchwood and colleagues (2006) reported differences in levels of SA in participants with psychosis from different ethnic backgrounds, and it is important to consider the lack of ethnic variation in the current sample when applying the findings more broadly.

Future research may benefit from comparing participants with and without psychosis who are matched for education as well as age as this was the only demographic factor on which the groups differed significantly in the current study. Consideration could be given to matching overall level of functioning both through SA scores and using more comparable recruitment sources. Recruiting from a wider geographical area may increase the ethnic

diversity of participants. It could also be beneficial to compare the characteristics of recruited EI participants to service level demographics or available data (with consent) relating to SA scores for participants who do not consent to the research. This may allow evaluation of the extent to which study participants are representative of FEP clients with comorbid SA.

#### 4.3.2.3 Characteristics of the data.

It was not possible to successfully transform all skewed variables. In the case of the negative self data, transformation to correct positive skew in the SA group resulted in negative skew in the SAp group. This may have reflected the purpose of the measure to capture extremes of beliefs associated with psychosis (Fowler et al., 2006) and the lower prevalence of these beliefs in participants without psychosis. Appropriate non-parametric analysis was applied to test for a significant difference between the groups in negative self schemas. However, a parametric analysis was required to explore differences between the groups when depression was entered as a covariate. The finding that depression but not psychosis was associated with negative self-schemas should therefore be interpreted with caution. This is particularly the case given that the depression data was also skewed.

Negative skew in the depression data reflected the high scores on this measure and the number obtaining the maximum possible *t*-score. This may have suggested that the BSI depression subscale was not the most appropriate measure of depression as there may have been a ceiling effect – i.e. it may have failed to detect small differences in level of depression amongst participants with very high scores. Where depression was entered as a covariate, the findings should be interpreted cautiously as the data did

not meet parametric assumptions. However, univariate analyses of differences between groups were conducted using non-parametric tests, and the findings of associations between depression, paranoia, negative schemas and PTSD symptoms were compatible with theories of emotional dysfunction in psychosis and the cognitive model of persecutory delusions (Birchwood, 2003; Birchwoodet al., 2000; Cosoff & Hafner, 1998; Freeman et al., 2002; McGorry et al., 1991; Shaner & Eth, 1989). The theoretical implications of the current study findings will now be considered in the section below.

## 4.4 Theoretical Implications

The results of the current research provided some support for existing hypothetical models of SA in psychosis that were developed from the findings of studies with small samples and which required further testing (Birchwood et al., 2006; Lockett, 2011). Birchwood and colleagues' (2006) stigma model suggested a central role for shame beliefs which interact with a fear of negative evaluation that arises from the expectation of judgement based on mental health. The model drew on Clark and Wells' (1995) cognitive model of SA in relation to fear of negative evaluation and the role of self-focused attention whilst also incorporating social rank and shame based conceptualisations of SA (Gilbert, 2002; Gilbert & Trower, 2001). The implication was that catastrophic shaming beliefs are specific to SA in psychosis and focus on fear of the individual's mental health status being discovered. The current study findings supported the role of shame in SA in psychosis. However, in contrast to Birchwood and colleagues' findings, differences in shame between socially anxious participants with and without

psychosis did not remain significant when controlling for depression.

Although Birchwood and colleagues found that FEP participants with SA had significantly higher levels of depression than FEP participants without SA, differences between the groups in levels of shame were significant even when depression was entered into the analysis. There were a number of differences between this study and the current research which may explain this difference. Birchwood and colleagues explored SA in psychosis by comparing participants to a group with psychosis but no SA, whereas the current research compared SA in psychosis to SA that was not comorbid with psychosis. Shame has previously been found to be linked to SA in the non-psychotic population (Gilbert, 2000), and participants in the SA group had a higher mean score on the Other as Shamer Scale than a non-clinical sample (Goss et al., 1994). The key to the current study was the hypothesis that shame beliefs would be more extreme in participants who also had psychosis. As such, the medium effect size for the univariate comparison of shame between the two groups (r = .29; d = 0.60) was smaller than the effect size reported by Birchwood and colleagues (d = 1.20). A larger effect size is more likely to remain significant when covariates are added to the analysis.

The two studies also employed different means of assessing depression. Birchwood and colleagues (2006) used the Calgary Depression Scale for Schizophrenia (CDSS; Addington, Addington, & Maticka-Tyndale, 1993). This is an observer rated measure designed specifically to assess depression in schizophrenia and may thus have been tapping into a subtly different construct from the depression subscale of the BSI. Data reported on the means and standard deviations for the CDSS data suggested that

participants had a wide range of scores but that there were few scores close to the upper limit of the measure. This was concordant with the fact that clinician rated measures tend to yield lower scores than self-report measures (e.g., Prusoff, Klerman, & Paykel, 1972), suggesting that differences in measurement rather than differences in depression or its association with shame may have accounted for the divergent findings of Birchwood and colleagues and the current study. In addition, as Birchwood and colleagues' participants' mean PANSS scores suggested that the majority had positive symptoms of 'minimal' severity (Kay et al., 1988), the CDSS may have been less applicable to their current emotional state. Participants' PANSS scores also showed that most were not presenting with clinical levels of suspiciousness, and this may have accounted for the finding that suspiciousness/persecution was not related to SA. However, this dimension of the PANSS may be less sensitive to the full range of paranoid beliefs held by participants than the GPTS which was designed to capture both ideas of persecution and social reference at subclinical and clinical levels (Green et al., 2008). The relationship between persecutory beliefs and shame was not explored.

As a result of the findings discussed above, Birchwood and colleagues (2006) did not include depression or paranoia/persecutory beliefs in their model of SA in psychosis. However, they did report a correlation of .58 between depression and SIAS scores, and suggested that post-psychotic depression may overlap with SA. This is in keeping with previous research conducted by Birchwood and colleagues (e.g., Birchwood, 2003; Birchwood et al., 2000) into emotional disorders in psychosis.

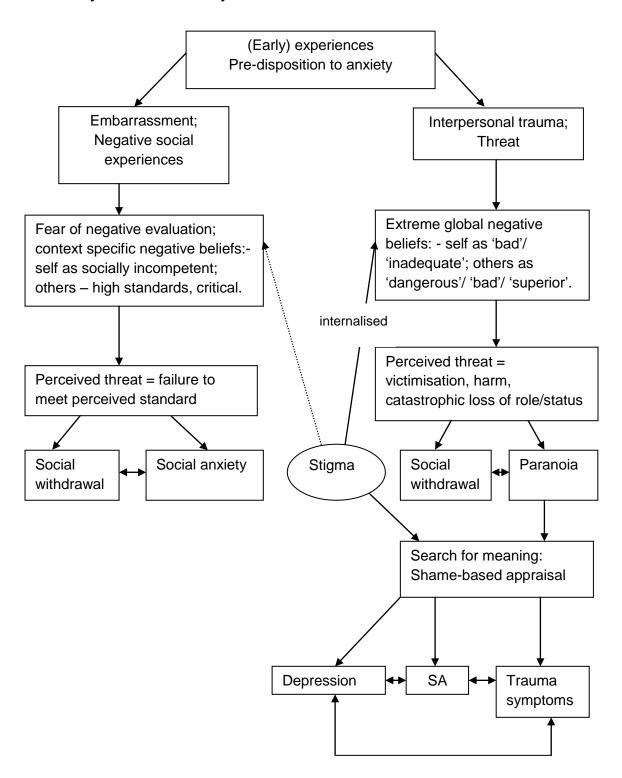
The findings of the current study suggested that a model of SA in psychosis required the inclusion of both depression and paranoia in order to fully capture the factors not included in models developed based on participants without psychosis (Clark & Wells, 1995; Rapee & Heimberg, 1997). There was some support for Lockett's (2011) proposed two-path schema model and her suggestion that paranoia was an important element missing from the stigma based model (Birchwood et al., 2006). However, the current study suggested that the conceptualisation of separate pathways based on stigma/shame and paranoia may not have been the most clinically useful distinction. Levels of shame were significantly higher in participants with clinical levels of paranoia, suggesting a single pathway to the development of SA in the context of paranoia. This may differentiate SA as an aspect of complex emotional dysfunction from a 'pure' anxiety state that may be adequately formulated within existing cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997). The current findings also suggested that SA in the context of paranoia was associated with higher levels of trauma and more extreme negative self and other beliefs. Descriptive data suggested that traumatic experiences, paranoia and emotional dysfunction may also be linked via images associated with memories focused on a threatening other or others. As such, two pathways are proposed to account for the development of both types of SA.

## 4.4.1 Pathways to the development of social anxiety.

The hypothesised pathways are presented in Figure 4.1.

Figure 4.1

Pathways to Social Anxiety



In common with Lockett's (2011) schema model, both types of SA are conceptualised as developing from previous experiences. However, SA comorbid with paranoia is suggested to result from experiences of interpersonal trauma and threat, whereas 'typical' SA may relate to experiences of embarrassment and negative social interactions. These latter experiences are less likely to be associated with trauma symptoms but may lead to the development of context specific negative beliefs that are activated in social situations and may be reinforced by stigma experienced in interactions with others. In these cases, the perceived threat is thus the failure to meet a perceived standard in the context of predicted negative evaluation from others. This is in keeping with cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997) and is likely to be associated with negative, observer perspective self-images similar to those described by subgroups of participants with and without psychosis in Lockett's study.

The negative self and other beliefs that develop as a result of traumatic experiences are hypothesised to be more extreme and global, as observed in the schema scores of participants with SA and paranoia. In the context of trauma and extreme negative schemas, paranoid beliefs develop with the perceived threat being victimisation and harm. Individuals who, as a result of their early experiences, already believe themselves to be 'bad' or 'inadequate' and others to be either 'dangerous' and 'bad' or 'superior' and 'punishing' are more likely to internalise stigma in the context of mental illness and/or to expect a catastrophic loss of social status (Haghighat, 2001). As such, the search for meaning in relation to paranoid beliefs, unusual experiences or ambiguous social situations is likely to lead to a

shame-based appraisal. Such an appraisal may contribute to emotional dysfunction in the form of overlapping symptoms of depression, SA and trauma. In contrast to Birchwood and colleagues' (2006) model, shame may arise from the combined influences of interpersonal trauma and associated schemas as well as experiences of stigma, and the content of shame beliefs may not relate solely to mental health status. This is in keeping with Lockett's (2011) findings that a relatively small number of participants reported images with explicit themes related to their diagnosis. This pathway to paranoid SA draws on cognitive models of the positive symptoms of psychosis and of persecutory delusions (Freeman et al., 2002; Garety et al., 2001; Morrison, 2001) as well as theories of shame (e.g., Gilbert, 2000). It is likely to be associated with threat based images and memories. Such images were reported by participants with and without psychosis in Lockett's research, supporting a distinction based on paranoia rather than on a diagnosis of psychosis.

Both pathways also imply an original pre-disposition to anxiety which is inherent to SA and has also been implicated in the development of paranoia (Freeman et al., 2002). Although the findings of the current study suggested that paranoid SA is more common in individuals with psychosis, this was not a clear distinction. Non-paranoid individuals who have already developed SA but who have a high level of genetic vulnerability to developing psychosis may go on to have unusual experiences. Similarly, a significant number of participants without psychosis were found to have clinical levels of paranoia. These may be the people who respond less well to current psychological interventions for SA. As such, a conceptualisation of

SA based on paranoia may have clinical implications for individuals with and without psychosis. These implications are considered below.

## 4.5 Clinical Implications

The proposed pathways to SA require further testing in order to validate their clinical utility. However, based on the current findings, treatments could usefully be modified based on a thorough assessment of paranoid beliefs. Whilst such beliefs may be routinely assessed in working with clients with psychosis, they may be missed in formulating SA as a primary diagnosis. This may be particularly the case where clients are reluctant to disclose paranoid ideation as a result of their appraisal of their beliefs and awareness of likely societal reactions. It is possible that awareness of the cultural unacceptability of persecutory thoughts is what differentiates paranoid participants with and without diagnoses of psychosis (Morrison, 2001).

The assessment of paranoia, trauma and shame will require the development of a strong therapeutic relationship. The establishment of such a relationship is also imperative prior to any intervention aimed at challenging beliefs associated with paranoia, shame, and schemas arising from interpersonal trauma. The early stages of therapy may necessitate the expression of openness to the client's perspective and validation of distress rather than direct challenge of paranoid beliefs (Fowler et al., 1995). Drawing on methods adopted in CBT for psychosis may prove useful regardless of diagnosis where SA is part of emotional dysfunction associated with paranoia. However, current service models for treating anxiety disorders may

warrant adapting to allow for longer periods of treatment and more flexible ways of working.

Thorough assessment of paranoid SA may also reveal symptoms of PTSD and traumatic memories underpinning negative images experienced when socially anxious. In some cases PTSD may need to be treated before SA can be addressed.

The current findings suggested that some individuals with psychosis present with SA that is concordant with cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997). Therefore, it should not be automatically assumed that existing CBT interventions for SA are inappropriate. Preliminary findings have suggested that an assisted self-help intervention guided by a formulation based on the Clark and Wells (1995) model of SA was effective in reducing SIAS scores of socially anxious participants in an El service (Turner, White et al., 2011). Although the mean pre and post intervention scores suggested that many participants continued to have clinical levels of SA, a mean reduction of 16.75 points on the SIAS is likely to have a significant impact on quality of life. Where SA is part of general emotional dysfunction, as conceptualised in the paranoia and shame based pathway, the behavioural components of CBT for SA may increase hope and break cycles of inactivity associated with depression. Ongoing assessment and developing a longitudinal formulation may help to identify individuals who require additional or more sophisticated interventions. A cognitive behavioural approach combining components of CBT for SA with additional interventions targeting social disability in more complex early psychosis cases has been the focus of a current trial in EI services. The findings of

such studies may help inform interventions in other mental health settings.

Further suggestions for ongoing research will be considered below.

## 4.6 Suggestions for Future Research

The current findings could be strengthened by further research with a larger sample. The study could also be improved through the recruitment of a more representative SA sample rather than a predominantly student group of participants. In order to obtain sufficient data in relation to memories and trauma symptoms, future research may need to be based on a sample size calculation that assumes around 50% of participants will report memories related to their SA. However, it may be more clinically useful to extend the current research by conducting a qualitative analysis of memories described by participants in the semi-structured interview. Memory themes could be explored in relation to both psychosis and paranoia in order to investigate whether the hypothesis, suggested by the descriptive memory focus data, that paranoia is associated with threat-based memories can be substantiated. The research could also be extended by exploring trauma symptoms in relation to multiple or ongoing traumatic experiences that may not be associated with a specific memory. If traumatic memories were found to be related to SA in the context of paranoia, then future research could explore whether memory rescripting (Wild et al., 2007, 2008) could be adapted and applied to these more complex cases.

The proposed pathways to SA require further testing in participants with and without psychosis to validate the suggestion that two types of SA could be distinguished based on paranoia. Comparison of paranoid participants with and without psychosis in terms of level of functioning would

also be a worthwhile direction for future research. The fact that a predominantly student sample (the SA group) had high levels of paranoia suggested that some individuals with persecutory beliefs were able to engage in structured activity, whereas paranoia in psychosis has been associated with high levels of distress and hospitalisation (Castle, Phelan, Wessely, & Murray, 1994; Freeman et al., 2002). Differentiations between high and low functioning paranoid participants may lead to the development of interventions to aid coping strategies and facilitate social recovery in more socially disabled individuals.

## 4.7 Conclusion

This study has evaluated psychological theory and research in relation to SA, psychosis and SA in psychosis and considered cognitive models developed in these areas (Birchwood et al., 2006; Clark & Wells, 1995; Garety et al., 2001; Lockett, 2011; Morrison, 2001; Rapee & Heimberg, 1997). It also considered specific factors in these models that research has suggested may be implicated in the development of SA in psychosis: shame and the relationship between images, memories and traumatic experiences. Based on the existing research, hypotheses were developed with the aim of developing understanding of SA in psychosis through comparison with SA that was not comorbid with psychosis.

The sample size of the current study necessitated some caution in interpretation of the findings. However, results suggested that SA in psychosis was associated with higher levels of shame, negative self schemas and PTSD symptoms compared to 'typical' SA. Additional analyses suggested that these differences were greater when participants were split

into those with and without clinical levels of paranoia. Although participants with psychosis had significantly higher levels of paranoia than participants without psychosis, persecutory beliefs were also common in the non-psychosis group. The combination of SA and paranoia was associated with higher levels of shame, negative self and other schemas, depression and PTSD symptoms. Descriptive data also suggested that SA in the context of paranoia was more likely to be associated with memories focused on a threatening other or others.

The results of the study supported research into emotional dysfunction in psychosis which has suggested that SA, depression and trauma symptoms may be overlapping constructs resulting from early experiences, dysfunctional beliefs and appraisals of the meaning of psychosis (Birchwood, 2003; Birchwood et al., 2000; Cosoff & Hafner, 1998; McGorry et al., 1991; Shaner & Eth, 1989). Results also supported the role of shame in SA in psychosis, as proposed by Birchwood and colleagues' (2006) stigma processing model and strengthened the proposed role of paranoia and traumatic experiences hypothesised by Lockett's (2011) schema based model. However, the findings also suggested that, contrary to Lockett's two pathways, shame and paranoia may be part of a single pathway to the development of SA in the context of complex emotional dysfunction. This pathway may be applied to a greater proportion of socially anxious individuals with psychosis than those without psychosis. However, there was considerable crossover between the groups, and some individuals without a diagnosis of psychosis may present with SA that could be more appropriately represented by the paranoia pathway. An alternative pathway to SA in the

absence of paranoia was also proposed, drawing on existing cognitive models of SA (Clark & Wells, 1995; Rapee & Heimberg, 1997). Some individuals with psychosis may present with this 'pure' SA that is likely to occur relatively independently of the psychotic episode.

Further research could aide exploration of the validity of the proposed pathways to SA. However, the current findings suggested that thorough assessment of paranoia, trauma and schematic beliefs may benefit all clinicians working with SA, regardless of comorbidity with psychosis. Existing CBT models and protocols for treating SA may improve the quality of life of individuals with both types of SA. Formulating complexities associated with paranoia, trauma, shame and negative schemas may help clinicians to make sense of difficulties establishing a therapeutic alliance and the need for additional interventions drawing on methods from CBT for psychosis and CBT for PTSD. In some cases, the challenge may be for existing service models to adapt to the needs of complex clients. Assertive outreach approaches to engagement and flexibility in length of psychological interventions has been common practice in EI services. Further research may be required to justify such an approach in other services.

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# 6 List of Appendices

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#### Appendix A

Literature Search Strategy and Results: Psychological Models of Social Anxiety Disorder

Articles citing psychological models of social anxiety disorder were identified using the electronic database Web of Knowledge. Key terms used were "model\* of social anxiety" OR "model\* of social phobia". Additional limits were then applied. Selected results were articles, reviews or editorials published in English between 2007 and 2012 in the subject areas of psychology, psychiatry, and behavioural sciences. This yielded 58 articles. A further nine articles were excluded because they applied specifically to SA in children. The resulting 49 articles were searched for citations of psychological models of SA. References to Clark and Wells' (1995) cognitive model of social phobia (cited by 42 articles) and Rapee and Heimberg's (1997) cognitive-behavioural model of social phobia (cited by 36 articles) far exceeded citations of other models. A total of 14 other models were referred to with between one and seven citations each.

#### Appendix B

# Literature Search Strategy and Results: Social Anxiety in Psychosis

An initial search was performed using the electronic database Web of Science. Key terms used were "social anxiety" OR "social phobia" AND psychosis OR schizophrenia. Additional limits were then applied. Inclusion criteria were articles published in English in subject areas relating to psychology, psychiatry, rehabilitation, behavioural sciences, and health policy and services. Reviews, proceedings papers, meeting abstracts and editorial material were excluded. This reduced the results to 183 articles. Additional searches were performed using the databases Academic Search Elite (EbscoH), Medline, PsychINFO, and Science Direct using the same key terms. This resulted in an additional 41 results.

Inclusion criteria were studies in English involving participants with psychosis where levels of SA formed part of the analysis and where this was the main or one of the main study features. Book chapters, treatment trials, reviews, meta-analyses, posters, unpublished theses, psychometric evaluations of measures and studies that only established prevalence of social anxiety in psychosis were excluded. Reference lists of key papers were checked for additional studies.

Appendix C

Main Findings and Characteristics of Reviewed Studies of Social Anxiety in Psychosis

Author(s)	Aim	Sample	Measures	Main findings
Birchwood et al. (2006)	To compare participants with FEP with and without SA.	Participants with FEP split into an SA group (n = 23) and a no SA group (n = 56)	SIAS, FNE, PANSS, IS, CDSS, PBIQ, OAS, SCS, PAS.	Participants with SA experienced greater shame and entrapment attached to their diagnosis. SA was not associated with psychotic symptoms.
Gumley, O'Grady, Power, & Schwannauer (2004)	To compare participants with psychosis with and without SA.	Participants at risk of relapse. 19 participants with SA matched for gender and diagnosis with 19 non-SA participants.	PANSS, PBIQ, RSES, BSI.	Participants with SA had higher levels of self-blame, entrapment and shame and lower self-esteem. There were no differences in psychotic symptoms.
Huppert & Smith (2005)	To explore the interaction of subtypes of anxiety with psychotic symptoms.	32 outpatients with schizophrenia or schizoaffective disorder.	SIAS, SPS, ADIS-IV, BDI, DASS, IHS, PANSS, SAPS, SANS, researcher generated questions assessing psychotic symptoms, QOLI.	SA was related to positive symptoms, bizarre behaviour, social quality of life and suspiciousness/paranoia. Self-reported SA was related to PANSS depression.

Appendix C

Main Findings and Characteristics of Reviewed Studies of Social Anxiety in Psychosis (continued)

Author(s)	Aim	Sample	Measures	Main findings
Lockett et al. (2012)	To pilot a measure to explore imagery experienced by participants with psychosis and SA.	7 participants in an EI service with comorbid SA.	A semi-structured interview exploring imagery (Hackmann et al., 1998).	Participants experienced both typical SA images images seen from an observer perspective and images that appear more threatening, may be related to residual paranoia, and tended to be seen from a field perspective.
Lysaker & Hammersley (2006)	To explore how SA and self-esteem influence one another in schizophrenia over a 6 month period.	39 outpatients with schizophrenia or schizoaffective disorder.	LSAS, MSEI, PANSS.	Baseline self-esteem was correlated with SA at 6 months, independent of SA at baseline. SA at baseline did not predict self-esteem at 6 months when baseline self-esteem was controlled for.
Lysaker, Ringer, & Davis (2008)	To establish the prevalence of social phobia in schizophrenia and its relationship to psychotic symptoms.	116 inpatients with schizophrenia.	SCID-P, PANSS, LSAS.	There was a trend for patients with social phobia to have higher total PANSS scores. Social fear was correlated with positive symptoms. Social avoidance scores were higher among participants with higher negative symptom scores.

Appendix C

Main Findings and Characteristics of Reviewed Studies of Social Anxiety in Psychosis (continued)

Author(s)	Aim	Sample	Measures	Main findings
Mazeh et al. (2009)	To establish the prevalence of social phobia in schizophrenia and its relationship to psychotic symptoms.	116 inpatients with schizophrenia.	SCID-P, PANSS, LSAS.	There was a trend for patients with social phobia to have higher total PANSS scores. Social fear was correlated with positive symptoms. Social avoidance scores were higher among participants with higher negative symptom scores.
Michail & Birchwood (2009)	To compare SA in participants with and without FEP and explore relationship between SA and psychotic symptoms.	80 FEP participants, of whom 20 met criteria for SA; 31age-matched participants with SA and no psychosis.	SCAN, SIAS, SPS, B-FNE, PANSS, DoT, CDSS.	There were no differences in severity of SA or depression. Those without psychosis had greater fears of negative evaluation. SA in psychosis was not correlated with psychotic symptoms, but was related to perceived threat from others.

Appendix C

Main Findings and Characteristics of Reviewed Studies of Social Anxiety in Psychosis (continued)

Author(s)	Aim	Sample	Measures	Main findings
Pallanti, Quercioli, & Hollander (2004)	To compare SA in participants with and without schizophrenia and explore correlates of SA in schizophrenia.	80 outpatients with schizophrenia, of whom 29 had comorbid SA; 27 comparison participants with SA.	SCID, LSAS, SAPS, SANS, SAS-II, SF- 36.	SA scores did not differ between groups. SA was not related to negative or positive symptoms.
Penn, Hope, Spaulding, & Kucera (1994)	To investigate the relationship between SA and psychotic symptoms and determine the best means of measuring SA in schizophrenia.	38 inpatients with schizophrenia or schizoaffective disorder.	PANSS, role play assessment using SUDS and behavioural ratings, B-FNE, FQ, researcher designed 'Ward Fear Scale', adapted Stroop task (Mattia, Heimberg, & Hope, 1993).	Behaviours related to SA were associated with negative symptoms. Self-reported SA was related to positive symptoms

Appendix C

Main Findings and Characteristics of Reviewed Studies of Social Anxiety in Psychosis (continued)

Author(s)	Aim	Sample	Measures	Main findings
Voges & Addington (2005)	To examine the relationship between SA and social functioning in FEP and explore associated beliefs.	60 FEP participants FEP, of whom 29 met criteria for SA.	SCID-I, SPAI, SISST, QLS, SFS, PANSS, CDSS.	SA was not associated with depression or psychotic symptoms. SA was associated with greater negative self-statements and lack of SA with greater positive self-statements.

Note. ADIS-IV = Anxiety Disorders Interview Schedule for DSM-IV (Brown, Di Nardo, Lehman, & Campbell, 2001); BDI = Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961); B-FNE = Brief Fear of Negative Evaluation Scale (Leary, 1983b); BSI = Brief Symptom Inventory (Derogatis & Melisaratos, 1983); CDSS = Calgary Depression Scale for Schizophrenia (Addington, Addington, & Maticka-Tyndale, 1993); DASS = Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995); DoT = Details of Threat Questionnaire (Freeman, Garety, & Kuipers, 2001); FEP = first episode psychosis; FNE = Fear of Negative Evaluation Scale (Watson & Friend, 1969); IHS = Inventory of Hostility and Suspiciousness (Rawlings & Freeman, 1996); IS = Insight Scale (Birchwood et al., 1994); FQ = Fear Questionnaire (Marks & Mathews, 1979); LSAS = Liebowitz Social Anxiety Scale (Liebowitz, 1987); MSEI = Multidimensional Self-Esteem Inventory (O'Brien & Epstein, 1998); OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994); PANSS = Positive and Negative Syndrome Scale (Kay, Oplar, & Lindenmayer, 1987); PAS = Pre-morbid Adjustment Scale (Cannon-Spoor, Potkin, & Wyatt, 1982); PBIQ = Personal Beliefs about Illness Questionnaire (Birchwood, Mason, Macmillan, & Healey, 1993); QOLI = Lehman Quality of Life Interview (Lehman, 1988); QLS = Quality of Life Scale (Heinrichs, Hanlon, & Carpenter Jr., 1984); RSES = Rosenberg Self Esteem Scale (Rosenberg, 1965); SA = social anxiety; SAPS = Scale for the Assessment of Positive Symptoms (Andreasson, 1984a); SANS = Scale for the Assessment of Negative Symptoms (Andreasson, 1984b); SAS-II = Social Adjustment Scale II (Schooler, Hogarty, & Weissman, 1979); SCAN = Schedules for Clinical Assessment in Neuropsychiatry (Wing, Sartorius, & Ustun, 1996); SCID = Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version (First, Spitzer, Gibbon, & Williams, 1996); SCID-I = Structured Clinical Interview for DSM-IV-TR Axis I Disorders – research version (First, Gibbon, Spitzer, & Williams, 2001); SCID-P = Structured Clinical Interview for DSM-III-R – Patient Version (Spitzer, Williams, Gibbon, & First, 1990); SCS = Social Comparison Scale (Allan & Gilbert, 1995); SF-36 = Short Form Health Survey (Ware, Snow, Kosisnki, & Gandek, 1993); SFS = Social Functioning Scale (Birchwood, Smith, Cochrane, Wetton, & Copestake, 1990); SIAS = Social Interaction Anxiety Scale (Mattick & Clarke, 1998); SISST = Social Interaction Self-Statement Test (Glass, Merluzzi, Biever, & Larsen, 1982); SPAI = Social Phobia and Anxiety Inventory (Turner, Beidel, & Dancu, 1996); SPS = Social Phobia Scale (Mattick & Clarke, 1998); STAI = State Trait Anxiety Inventory (Spielberger, 1983); SUDS = Subjective Units of Discomfort Scale ( Wolpe & Lazarus, 1966); SUMD = Scale to Assess Unawareness of Illness (Amador et al., 1994); WCST = Wisconsin Card Sorting Test (Heaton, 1981).

# Appendix D: OTHER AS SHAMER SCALE (OAS)

We are interested in how people think others see them. Below is a list of statements describing feelings or experiences about how you may feel other people see you.

Read each statement carefully and circle the number to the right of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below.

# 0 = NEVER 1 = SELDOM 2 = SOMETIME 3 = FREQUENTLY 4 = ALMOST ALWAYS

1. I feel other people see me as not good enough.	0 1 2 3 4
2. I think that other people look down on me	0 1 2 3 4
3. Other people put me down a lot	0 1 2 3 4
4. I feel insecure about others opinions of me	0 1 2 3 4
5. Other people see me as not measuring up to them	0 1 2 3 4
6. Other people see me as small and insignificant	0 1 2 3 4
7. Other people see me as somehow defective as a person	0 1 2 3 4
8. People see me as unimportant compared to others	0 1 2 3 4
9. Other people look for my faults	0 1 2 3 4
<ol> <li>People see me as striving for perfection but being unable to reach my own standards</li> </ol>	0 1 2 3 4
11. I think others are able to see my defects	0 1 2 3 4
12. Others are critical or punishing when I make a mistake	0 1 2 3 4
13. People distance themselves from me when I make mistakes	0 1 2 3 4
14. Other people always remember my mistakes	0 1 2 3 4
15. Others see me as fragile	0 1 2 3 4
16. Others see me as empty and unfulfilled	0 1 2 3 4
17. Others think there is something missing in me	0 1 2 3 4
18. Other people think I have lost control over my body and feelings	0 1 2 3 4

#### **SCORING**

Add up all items

#### **DESCRIPTION**

The Other as Shamer Scale (OAS)

The OAS was adapted from Cook's (1993) Internalised Shame Scale to measure 'external shame' (Allan, Gilbert & Goss, 1994; Goss, Gilbert & Allan, 1998). The scale consists of 18 items rated on a five-point scale according to the frequency of evaluations about how others judge the self, (0 = Never to 4 = Almost always). Items include: 'I feel other people look down on me', 'other people see me as somehow defective as a person' and 'other people always remember my mistakes'. In the original study the scale showed high internal consistency with a Cronbach's alpha of .92. The scale has been shown to have a high alpha level 0.96.

#### REFERENCE

Allan, S., Gilbert, P. & Goss, K. (1994). An exploration of shame measures: II: Psychopathology. *Personality and Individual Differences*, 17, 719-722

Goss, K., Gilbert, P. & Allan, S. (1994) An exploration of shame measures: I: The 'other as shamer'scale. *Personality and Individual Differences*, 17, 713-717.

# <u>Appendix E: Imagery and memories in social anxiety amalgamated semi-structured interview</u>

YEARS IN EDUCATION:

GENDER:

AGE:

NAME:

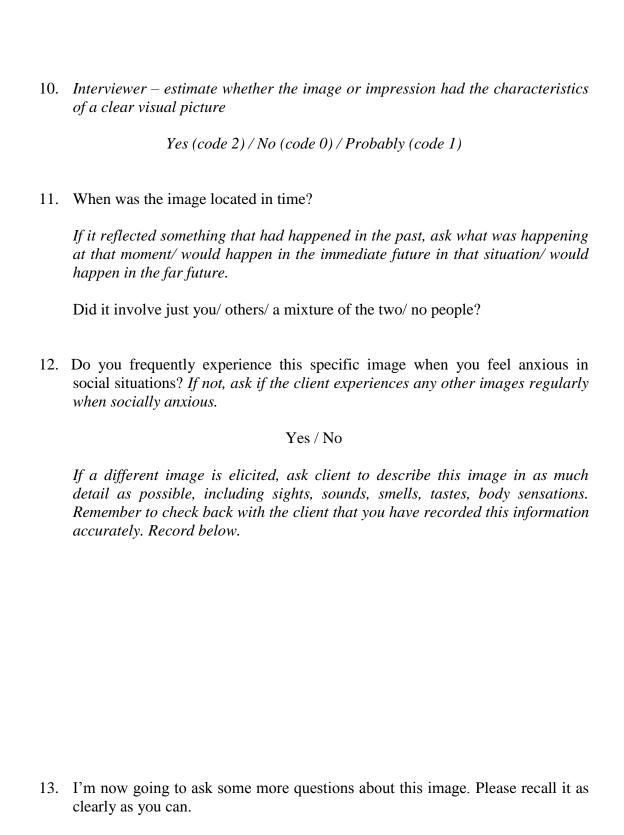
DATE:

MI	EETS CRITERIA FOR SOCIAL PHOBIA ON SIAS?: YES / NO
EV	YER HAD TREATMENT FOR AN ANXIETY PROBLEM: YES / NO
1.	Do you ever get anxious in social situations? I wonder if you could tell me about a few times recently when that happened to you?
2.	I know that when you are anxious you probably notice a variety of things going through you mind. I'm particularly interested in the little pictures or images people get when they are nervous (give lots of reassuring and prompts here). Have you ever had images like that when you are anxious either in social situations, or in anticipation of them?  Always / often / sometimes / never (coded 4, 3, 2 or 1)
3.	Can you think of a time recently when you felt particularly anxious in a social situation?
4.	How anxious were you at the worst moment? (Show 0-100mm rating Scale 1 and enter rating in box below)

5.	Did you have an image or picture going through your mind at the time?
	Yes / No
	Did you hear any sounds, such as a voice, in your mind at the time?
	Yes / No
	Were you aware of any smells?
	Yes / No
	Were you aware of any strange sensations in your body? Some people say when they are in a scary social situation they feel as if they are smaller than usual, or further away from people, or fatter than usual – were you aware of any feelings like this at the time?
	Yes / No
6.	Sometimes people get an impression of how they appear, or how others might be reacting, even if they are not looking at them. Did that happen to you?
	Yes / No
7.	Please try to clearly recall the image/ impression now, with your eyes closed (allow about 30 seconds). Have you got it now?
	Thinking about the image/ impression, is your predominant impression one of viewing the situation as if looking out through your eyes, observing the details of what is going on around you, or is the predominant impression one in which you are observing yourself, looking at yourself from an external point of you?
	Get ratings of the extent to which the field/observer perspective is being taken on scale $2-a$ 7 point scale ranging from -3 (completely field) to +3 (completely observer). 0 is seeing both perspectives equally. Enter score in box below:
8.	Can you now describe the image? What can you see? What can you hear? What can you smell? What can you feel?  If focussed on appearance probe for details of posture, clothing, facial aspects, other parts of the body, general appearance, any change in size (height/weight), voice characteristics, pronunciation, etc Account must be detailed enough for a film director to recreate the image.

Write down every detail. Summarise all the client has described, in detail, adding "Is that right?"
Are parts of the image in your mind bigger or smaller than they would be in real life? Do you or other people in your image look different to how you do in real life? Is anything distorted in its shape or appearance? Is the perspective (how far things seem from each other or how big things seem in comparison to each other) how it would be in real life? Please look at this scale (present Scale 3, 0-100mm rating scale) and tell me how much you feel the image was distorted, with 0 being "Not at all" and 100 being "Completely distorted, things appeared completely different to how they would in real life". Enter rating in box below.
How about the things you hear in the image – do they appear louder or quieter or at all distorted to how they would in real life? On this scale ( <i>present Scale 3 again</i> ), with 0 being "Not distorted at all" and 100 being "Completely distorted to how it would sound in real life", how distorted would you say the sounds in your image are? <i>Enter rating in box below</i> .
How about the smells in the image? Are they stronger or at all distorted from how you would experience them in real life? On this scale (present Scale 3), with 0 being "Completely the same as I would smell them in real life" and 100 being "Completely different to how they would smell in real life", how distorted would you say the smells in your image are? Enter rating in box below.

9.



How do you feel in the image (emotions)?

What is happening in the image?

Why is this happening?
What has led up to this event?
What is the worst thing about it?
What does it mean about you?
What does it mean about others?
What does it mean about the world?
Summarise the interpersonal meaning, asking "Is that right?" and make a written summary.

14.	What is your earliest recollection of having the thoughts/ sensations/ emotions/ experiences reflected in the image?
	Where were you in this earliest recollection?
	How old were you?
	What was happening in your life at the time?
15.	Is there a particular memory that seems to be closely linked to the image?
	Yes / No
16.	If so, do you think you could evoke it with your eyes closed, just as if it was happening now, and describe it to me?
	If necessary, prompt with the following:
	Can you see anything in the memory?
	Can you hear anything (including your own voice)?
	Any tastes or smells?
	What sensations do you have in your body?

	Summarise below, checking with client that information is accurate:
17.	Present Scale 4: 0-100% rating scale Can you please indicate on this scale, with 0% being "not at all" and 100% being "completely", how similar the actual sensory aspects of the image are compared to those in the remembered event?
	Present Scale 5: Get ratings of the extent to which the memory is focused on rs/another person or self-focused on a 7 point scale. Enter score in box below:
18.	What do you feel in the remembered event?
	What is happening in this remembered event?

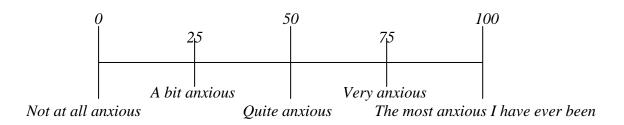
What has led up to this event?
What is the worst thing about it?
What does it mean about you?
What does it mean about others?
What does it mean about the world?
Summarise all the meanings, asking, "Is that right?" and make a written account below:

19.	Present Scale 4 again. Please indicate on this scale, with 0% being "not at all similar" and 100% being "completely the same" how similar in terms of interpersonal meaning (what we've just been talking about) the remembered event and the image are?
20.	Were you anxious in social situations before this event?
	Yes / No
21.	If "yes"  Did the event change this anxiety in any way *ie. make it better/ worse/ no different)?
22.	Did you experience anxiety at the time of the event?
	Yes / No
	If "no" Did you recall this event when your anxiety problems started?

Yes / No

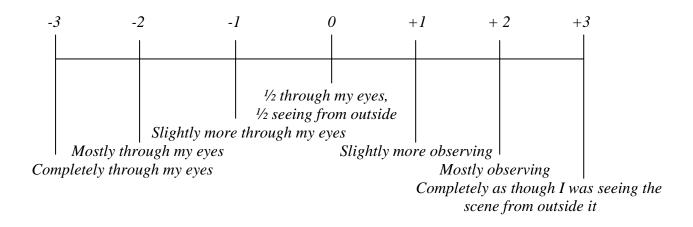
#### Scale 1 (for use with question 4)

Ask client to mark anywhere along the line to show how anxious they were



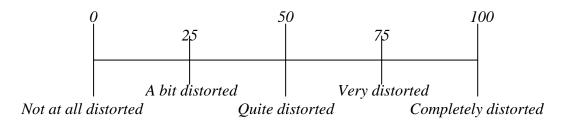
# Scale 2 (for use with question 7)

Ask client to choose a number to indicate the image perspective



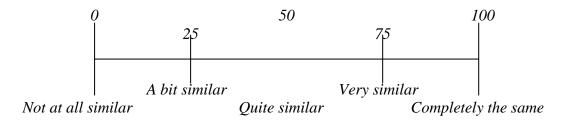
# Scale 3 (for use with question 9)

Ask client to mark anywhere along the line to show how distorted from real life the image was



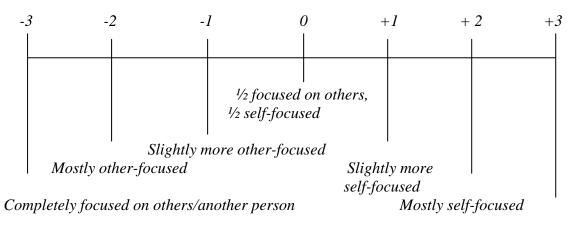
# Scale 4 (for use with questions 17 & 19)

Ask client to mark anywhere along the line to show



# Scale 5 (for use with question 17b)

Ask client to choose a number to indicate the focus of the memory



Completely focused on myself as though looking from outside



# National Research Ethics Service

NRES Committee East of England - Norfolk

Capital Park Fulbourn Cambridge CB21 5XB

Telephone: 01223 597597 Facsimile: 01223 597645

16 September 2011

Miss Sarah Cooke Trainee Clinical Psychologist Cambridgeshire & Peterborough NHS Foundation Trust Postgraduate Research Office Room 2.30, Elizabeth Fry Building Faculty of Health, UEA NR4 7TJ

Dear Miss Cooke

The Role of Shame, Schemas, Cognitions and Memories Study title:

in Social Anxiety Following Psychosis: A Comparison

with Social Anxiety without Psychosis.

**REC** reference: 11/EE/0332

The Research Ethics Committee reviewed the above application at the meeting held on 12 September 2011. Thank you for attending to discuss the study.

#### Ethical opinion

- 1. You were asked about your experience with quantitative research. You explained that much of your experience is in qualitative research but that you have also been involved in quantitative study. You added that you are receiving appropriate support from the University for this aspect of the study.
- 2. The Committee had noted that mention is made of a pilot study and asked for more information on this. You explained that you have successfully piloted the interview with a service user.
- 3. Members asked for more information on recruitment via the Wellbeing Service and whether it was necessary for the researcher to be at the triage meetings. You explained that you hoped that being at the triage meetings would help staff in working out the type of people you are looking for to take part in the study. Members suggested that you consider attending staff meetings instead.
- The Committee asked for clarification on whether the potential participants from the North Norfolk Wellbeing Service will have consented to be contacted for research. You advised that it will be the Service that contacts clients rather than you but added that Patrick Wymbs, Clinical Team Leader is looking into this.
- 5. The Committee asked what would happen if someone responded to the poster but scored less that 30 on the screening tool and so were not eligible to take part. Members wondered if it would be possible for the screening tool to be emailed so that potential participants could score themselves. You said that this would be

possible but that you did not think it would be necessary as the average score for people who experience problems is higher than 30. Members were satisfied with this explanation.

- Members asked if the level of social anxiety would need to be the same for the two groups. You confirmed that it would; both groups will have to score over 30 on the screening tool.
- 7. Members commented that they felt that the imagery interview would be challenging for both the researcher and the interviewee. You advised that the first part of the interview had been used in a previous study. Professor Fowler added that it had been used two years ago and had gone very well.
- 8. The Committee asked for more information on how the information will be analysed. You explained that various parts of the interview would be scored and given a number. This would then be analysed. You added that the qualitative information may be used in a future study and confirmed that ethical approval would be sought for this.

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

#### Ethical review of research sites

#### **NHS Sites**

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

#### Non NHS sites

I am pleased to confirm that the favourable opinion applies to the following research site, subject to site management permission being obtained prior to the start of the study at the site (see under 'Conditions of the favourable opinion below').

Research Site	Principal Investigator / Local Collaborator		
University of East Anglia	Miss Sarah Cooke		

#### Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <a href="http://www.rdforum.nhs.uk">http://www.rdforum.nhs.uk</a>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

# Other conditions specified by the REC

#### Consent Form:

There should be a point relating to confidentiality. The recommended wording is 'I understand that relevant sections of my medical notes and data collected during the study, may be looked at by individuals from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.

You are advised that a consent form template is shown on the website at http://www.nres.npsa.nhs.uk/applications/guidance/consent-guidance-and-forms/ .

It is responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Confirmation should also be provided to host organisations together with relevant documentation

#### Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Advertisement	1.0	05 July 2011
Evidence of insurance or indemnity: Letter from UEA	Letter from UEA	26 July 2011
Evidence of insurance or indemnity: Zurich Municipal Certificate		28 June 2011
Investigator CV: Miss Sarah E Cooke		27 July 2010
Academic Supervisor CV: David George Fowler		
Academic Supervisor CV: Sian Coker		
Participant Consent Form	1.0	28 June 2011
Participant Information Sheet: Social Anxiety and Psychosis group	1.0	28 June 2011
Participant Information Sheet: Social Anxiety group - Wellbeing	1.0	28 June 2011
Participant Information Sheet: Social Anxiety group - UEA	1.0	28 June 2011
Protocol	1.0	28 June 2011
Questionnaire: Self-Rating Scale for PTSD		
Questionnaire: Green et al. Paranoid Thoughts Scales	20 N N N N N N N N N N N N N N N N N N N	
Questionnaire: Brief Symptom inventory		
Questionnaire: Semi-structured interview		≥ *
Questionnaire: The Social Interaction Anxiety scale		
Questionnaire: The Other as Shamer scale		

Questionnaire: The Brief Fear of Negative Evaluations Scale	8.
Questionnaire: The Brief Core Schema Scales	1
REC application: Submission code 82149/235229/1/137 and SSI 82149/236870/7/27/116728/219690	
Referees or other scientific critique report: Letter from Dr Sian Coker	27 July 2011

#### Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

#### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

#### After ethical review

#### Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- · Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

#### <u>Feedback</u>

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

11/EE/0332

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

Michael Sheldon MA, PhD

Chair

Email: lynda.mccormack@eoe.nhs.uk

Enclosures:

List of names and professions of members who were present at the

meeting and those who submitted written comments "After ethical review – guidance for researchers"

Site approval form (SF1)

Copy to:

Tracy Moulton,

Research, Enterprise and Engagement Office

The Registry

University of East Anglia

Norwich NR4 7TJ

Ms Bonnie Teague Research Manager

Norfolk and Waveney Mental Health NHS Foundation Trust

Hellesdon Hospital Drayton High Road

Norwich NR6 5BE

# NRES Committee East of England - Norfolk

# Attendance at Committee meeting on 12 September 2011

# **Committee Members:**

Name	Profession	Present	Notes
Reverend Bill Bazely	Senior Hospital Chaplain	No	Apologies given
Mr Ron Driver	Lecturer/Statistician	Yes	
Ms Leanne Groves	Psychological Therapist/Occupational Therapist	Yes	
Mrs Janette Guymer	NHS Administrator	Yes	
Dr Linda Harvey	Research Scientist	Yes	
Dr Gillian Hawkes	Research Associate	No	Apologies given
Mrs Pamela Keeley	East Anglian Eye Bank Nurse Manager	Yes	
Dr Elizabeth Lund	Research Scientist	Yes	
Michael Sheldon MA, PhD	Retired Clinical Psychologist	Yes	
Dr Robert Stone	General Practitioner	Yes	

# Also in attendance:

Name	Position (or reason for attending)
Mrs Lynda McCormack	REC Co-ordinator



# National Research Ethics Service

NRES Committee East of England - Norfolk

Victoria House Capital Park Fulbourn Cambridge CB21 5XB

Telephone: 01223 597685 Facsimile: 01223 597645

27 September 2011

Miss Sarah Cooke
Trainee Clinical Psychologist
Cambridgeshire & Peterborough NHS Foundation Trust
Postgraduate Research Office
Room 2.30, Elizabeth Fry Building
Faculty of Health, University of East Anglia
NR4 7TJ

Dear Miss Cooke

Full title of study:

The Role of Shame, Schemas, Cognitions and Memories

in Social Anxiety Following Psychosis: A Comparison

with Social Anxiety without Psychosis.

**REC** reference number:

11/EE/0332

Thank you for your email of 26<sup>th</sup> September 2011. I can confirm the REC has received the documents listed below as evidence of compliance with the approval conditions detailed in our letter dated 12 September 2011. Please note these documents are for information only and have not been reviewed by the committee.

#### Documents received

The documents received were as follows:

Document	Version	Date
Participant Consent Form	2.0	26 September 2011

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

11/EE/0332

Please quote this number on all correspondence

Yours sincerely

Miss Nicky Storey

**Committee Co-ordinator** 

E-mail: Nicky.Storey@eoe.nhs.uk

Copy to:

Tracy Moulton,

Research, Enterprise and Engagement Office

The Registry

University of East Anglia

Norwich NR4 7TJ

Ms Bonnie Teague Research Manager Norfolk and Waveney Mental Health NHS Foundation Trust Hellesdon Hospital Drayton High Road Norwich NR6 5BE

# Norfolk and Waveney **NHS**Mental Health

**NHS Foundation Trust** 

**Research and Development Dept** 

Hellesdon Hospital Drayton High Road Norwich NR65BE

Telephone 01603 421552

E mail: RDofficemailbox@nwmhp.nhs.uk

Sarah Cooke, Postgraduate Research Office, Room 2.30, Elizabeth Fry Building Faculty of Health, University of East Anglia, NR4 7TJ

5th October 2011

Dear Miss Cooke,

Re: The role of shame, schemas, cognitions and memories in social anxiety following psychosis: A comparison with social anxiety without psychosis 2011MH49

Thank you for submitting the above project for local research governance approval. I am pleased to inform you that your project has been given full approval and you may begin your research at the following site:

Norfolk & Waveney Mental Health NHS Foundation Trust

I have enclosed two copies of the Standard Terms and Conditions of Approval. Please sign both copies returning one copy to the Research and Development office, at the above address, and keeping the other in your study file. Failure to return the standard terms and conditions may affect the conditions of approval. Under the agreed Standard Terms and Conditions of Approval you must inform the R&D department of any proposed changes to this study and submit annual progress reports to the R&D department.

Any researcher(s) whose substantive employer is not the Norfolk & Waveney Mental Health NHS Foundation Trust must have a Letter of Access or Honorary Research contract before coming on site to conduct their research in this project. Please note that you cannot take part in this study until you have this documentation. If a Letter of Access / Honorary Research Contract has not been issued – please contact us immediately.

If you have any queries regarding this or any other project, please contact, Tom Rhodes, Research Governance Administrator, at the above address.

The reference number for this study is: 2011MH49, and this should be quoted on all correspondence.

Yours sincerely,

Lul Ho

Acting Medical Director







Ref: 201MH49

Miss Sarah Cooke

Trainee Clinical Psychologist Room 2.30, Elizabeth Fry Building University of East Anglia Norwich NR4 7TJ **Research & Development** 

NHS Norfolk Lakeside 400 Old Chapel Way Broadland Business Park Thorpe St Andrew Norwich NR7 0WG

> Tel: 01603 257283 Fax: 01603 257292

E-mail: <a href="mailto:paul.mills@norfolk.nhs.uk">paul.mills@norfolk.nhs.uk</a> www.norfolk.nhs.uk/research

26 September 2011

Dear Miss Cooke,

Re: 2011MH49. The Role of Shame, Schemas, Cognitions and Memories in Social Anxiety

Following Psychosis: A Comparison with Social Anxiety without Psychosis.

REC Number: 11/EE/0332

Chief Investigator: Miss Sarah Cooke, University of East Anglia

Sponsor: University of East Anglia

Further to your submission of the above project to the R&D office at NHS Norfolk your project has now been reviewed and all the mandatory research governance checks have been satisfied. I am therefore pleased to inform you on behalf of **NHS Norfolk** that NHS permission (R&D approval) was granted on **26**<sup>th</sup> **September 2011** for your study to take place at the following sites:

GP Practices in NHS Norfolk

Please note that NHS Permission is granted on the basis of the information supplied in the application form, protocol and supporting documentation, if anything subsequently comes to light that would cast doubts upon, or alter in any material way, any information contained in the original application, or a later amendment application there may be implications for continued NHS Permission.

Please note the following points:

- Approval is given on the understanding that the UEA Medical Centre may display a poster about the study, and that GP practices may provide a room for assessments.
- Please note the GP practice has the final decision as to whether a room can be provided for assessments if needed.
- It is understood that all personal identifiable data will be stored at the University of East Anglia, and none will be stored at the chief investigator's home address

You may now begin your study at the above sites.



Chair: Sheila Childerhouse Chief Executive: Andrew Morgan

Visit our website: www.norfolk.nhs.uk

Permission is granted on the understanding that the study is conducted in accordance with the Research Governance Framework. I have enclosed two copies of the Standard Terms and Conditions of Approval. Please sign and return one copy to the R&D office at the above address. Failure to return the standard terms and conditions may result in NHS permission being revoked.

Please note, under the agreed standard terms and conditions you must inform the R&D Office at NHS Norfolk of any proposed changes to this study, whether minor or substantial, and to keep the Committee updated on progress. Please note also, if you wish to extend approval to any sites other than those listed above you must apply for this through the relevant R&D office.

If you have any queries regarding this or any other project please contact Paul Mills, R&D Officer, at the above address. Please note, the reference number for this study is **2011MH49** and this should be quoted on all correspondence.

The following documents were reviewed:

# <u>Letter of Favourable Opinion from NRES Committee East of England – Norfolk, dated 16<sup>th</sup> September 2011</u>

- Protocol, Version 1.0, 28<sup>th</sup> June 2011
- Advertisement, Version 1.0, 5<sup>th</sup> July 2011
- Participant Information Sheet Social Anxiety & Psychosis Group, Version 1.0, 28<sup>th</sup> June 2011
- Participant Information Sheet Wellbeing, Version 1.0, 28<sup>th</sup> June 2011
- Participant Information Sheet Social Anxiety Group, Version 1.0, 28<sup>th</sup> June 2011
- Questionnaire Self-Rating Scale for PTSD
- Questionnaire Green et al Paranoid Thoughts Scale
- Questionnaire Brief Symptom Inventory
- Questionnaire Semi-Structured Interview
- Questionnaire The Social Interaction Anxiety Scale
- Questionnaire The Other as Shamer Scale
- Questionnaire The Brief Fear of Negative Evaluation Scale
- Questionnaire The Brief Core Schema Scale
- Evidence of Peer Review Letter from Sian Coker, 27<sup>th</sup> July 2011
- Investigator CV Sarah Cooke
- Investigator CV David Fowler
- Investigator CV Sian Coker
- Letter fom Sponsor, 26<sup>th</sup> July 2011
- Evidence of Insurance/Indemnity, 28<sup>th</sup> June 2011

### Other Documents

- Fully Signed R&D Form, Lock Code 82149/235238/14/153
- Signed SSI Form, Lock Code 82149/235875/6/601/116727/219409
- Participant Consent Form, Version 2, 26<sup>th</sup> September 2011\*

\* It is noted that the Participant Consent Form has been updated as a condition of REC approval. Please send any REC acknowledgement of this update to the NHS Norfolk R&D Office

Yours sincerely known to Manual

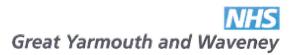
Dr Jenny Harries

Joint Director of Public Health

NHS Norfolk & Norfolk County Council

cc: Professor David Fowler, University of East Anglia, Academic Supervisor Sue Steel, University of East Anglia, Sponsor Representative

File



Ref: 201MH49

Miss Sarah Cooke

Trainee Clinical Psychologist Room 2.30, Elizabeth Fry Building University of East Anglia Norwich NR4 7TJ **Research & Development** 

NHS Norfolk Lakeside 400 Old Chapel Way Broadland Business Park Thorpe St Andrew Norwich NR7 0WG

Tel: 01603 257283

Fax: 01603 257292

E-mail: <a href="mailto:paul.mills@norfolk.nhs.uk">paul.mills@norfolk.nhs.uk</a>
www.norfolk.nhs.uk/research

26 September 2011

Dear Miss Cooke,

Re: 2011MH49. The Role of Shame, Schemas, Cognitions and Memories in Social Anxiety

Following Psychosis: A Comparison with Social Anxiety without Psychosis.

REC Number: 11/EE/0332

Chief Investigator: Miss Sarah Cooke, University of East Anglia

Sponsor: University of East Anglia

Further to your submission of the above project to the R&D office at NHS Norfolk your project has now been reviewed and all the mandatory research governance checks have been satisfied. I am therefore pleased to inform you on behalf of **NHS Great Yarmouth & Waveney** that NHS permission (R&D approval) was granted on **26**<sup>th</sup> **September 2011** for your study to take place at the following sites:

GP Practices in NHS Great Yarmouth & Waveney

Please note that NHS Permission is granted on the basis of the information supplied in the application form, protocol and supporting documentation, if anything subsequently comes to light that would cast doubts upon, or alter in any material way, any information contained in the original application, or a later amendment application there may be implications for continued NHS Permission.

Please note the following points:

- Approval is given on the understanding that GP practices may provide a room for assessments.
- Please note the GP practice has the final decision as to whether a room can be provided for assessments if needed.
- It is understood that all personal identifiable data will be stored at the University of East Anglia, and none will be stored at the chief investigator's home address

You may now begin your study at the above sites.

Permission is granted on the understanding that the study is conducted in accordance with the Research Governance Framework. I have enclosed two copies of the Standard Terms and Conditions of Approval. Please sign and return one copy to the R&D office at the above address. Failure to return the standard terms and conditions may result in NHS permission being revoked.

Please note, under the agreed standard terms and conditions you must inform the R&D Office at NHS Norfolk of any proposed changes to this study, whether minor or substantial, and to keep the Committee updated on progress. Please note also, if you wish to extend approval to any sites other than those listed above you must apply for this through the relevant R&D office.

If you have any queries regarding this or any other project please contact Paul Mills, R&D Officer, at the above address. Please note, the reference number for this study is **2011MH49** and this should be quoted on all correspondence.

The following documents were reviewed:

# <u>Letter of Favourable Opinion from NRES Committee East of England – Norfolk, dated 16<sup>th</sup> September 2011</u>

- Protocol, Version 1.0, 28<sup>th</sup> June 2011
- Advertisement, Version 1.0, 5<sup>th</sup> July 2011
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- Letter fom Sponsor, 26<sup>th</sup> July 2011
- Evidence of Insurance/Indemnity, 28<sup>th</sup> June 2011

### Other Documents

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- Signed SSI Form, Lock Code 82149/235875/6/601/116727/219409
- Participant Consent Form, Version 2, 26<sup>th</sup> September 2011\*

Yours sincerely

Dr Augustine Pereira

Consultant in Public Health Medicine, and Research & Development Lead NHS Great Yarmouth & Waveney

cc: Professor David Fowler, University of East Anglia, Academic Supervisor Sue Steel, University of East Anglia, Sponsor Representative File

Enc

<sup>\*</sup> It is noted that the Participant Consent Form has been updated as a condition of REC approval. Please send any REC acknowledgement of this update to the NHS Norfolk R&D Office



**NHS Foundation Trust** 

Research and Development The Knowledge Centre Hellesdon Hospital Drayton High Road Norwich NR6 5BE

Tel: 01602 421255

Email: RDOfficemailbox@nwmhp.nhs.uk

Sarah Cooke, Postgraduate Research Office, Room 2.30, Elizabeth Fry Building Faculty of Health, University of East Anglia, NR4 7TJ

1st January 2012

Research Project: The role of shame, schemas, cognitions and memories in social anxiety following psychosis: A comparison with social anxiety without psychosis 2011MH49

Dear Sarah.

Discussions have been taking place for several months to agree the bringing together of Norfolk and Waveney Mental Health NHS Foundation Trust and Suffolk Mental Health Partnership NHS Trust. This merger has now been agreed by all of the regulators and by the Department of Health. As from 1st January 2012 the two organisations became a single legal entity, known as Norfolk and Suffolk NHS Foundation Trust. Officially the headquarters are located at Hellesdon Hospital in Norwich, although there will still be staff at the offices at Suffolk House in Ipswich.

You can be assured that the merger will not make any difference to the existing research contract/agreement/approval that you have with us and the terms, conditions and specification remain unchanged. The Department of Health Order authorising the transfer of assets and liabilities of Suffolk Mental Health Partnership NHS Trust and Norfolk and Waveney Mental Health NHS Foundation Trust was explicit on this point:

### Provision for continuity in exercise of functions

- 1.—(1) Anything done by or in relation to, and any application made by, or any direction, authorisation or notice given to or by, the old trust shall be deemed to have been done by or in relation to or made by or given to or by the
- (2) Any instrument made by the old trust continues in force in relation to the new trust until it is varied or revoked by the new trust.
- (3) Any form supplied by the old trust, or any form supplied by the Secretary of State in relation to the old trust, continues to be a valid form in relation to the new trust until it is cancelled or withdrawn by the Secretary of State or the new trust, as if any reference contained in that form to the old trust were a reference to the new trust.

In light of this we consider it unnecessary to novate our existing contract/agreement/approval.

Yours sincerely,

Dr Bonnie Teague,

Research Manager, Norfolk and Suffolk NHS Foundation Trust

eagule

Chair: Maggie Wheeler Chief Executive: Aidan Thomas

Trust Headquarters: Hellesdon Hospital, Drayton High Road, Norwich, NR6 5BE

Tel: 01603 421421 Fax: 01603 421440 www.nsft.nhs.uk







#### Information about the Research

# An Investigation of the Nature of Social Anxiety in People with and without a Diagnosis of Psychosis.

*Primary Researcher:* Sarah Cooke, Trainee Clinical Psychologist, University of East Anglia (UEA).

Primary Supervisor: Dr Sian Coker, Clinical Psychologist and Research Tutor, UEA. Clinical Supervisor: Professor David Fowler, Professor of Psychiatry, UEA. Collaborator: Dr Ruth Turner, Clinical Psychologist, Central Norfolk Early Intervention Team (CNEIT).

I would like to invite you to take part in a research study. Before you decide I would like you to understand why the research is being done and what it would involve for you. The researcher will go through the information sheet with you and answer any questions you have. You can also ask questions by telephone and discuss the research with your care co-ordinator before you decide whether to meet with the researcher. Please take the time to read this information sheet carefully. Talk to others about the study if you wish.

Part 1 tells you the purpose of this study and what will happen to you if you take part.

Part 2 gives you more detailed information about the conduct of the study.

Please ask me if there is anything that is not clear or if you would like more information.

#### What is the purpose of the study?

- I am carrying out the study for assessment as part of my doctorate in Clinical Psychology.
- I am interested in people with and without experience of psychosis who feel anxious in social situations.
- I am particularly interested in the thoughts, memories and previous experiences of people with social anxiety.

#### Why have I been invited?

Clients within the Norfolk Early Intervention Service who experience social anxiety will be invited to take part.

#### Do I have to take part?

It is up to you to decide to join the study. I will describe the study and go through this information sheet. If you agree to take part, I will then ask you to sign a consent form. You will be given a copy of this information sheet and the signed consent form to keep. You are free to withdraw at any time, without giving a reason. The research is not linked to your treatment. If you decide not to take part or you wish to withdraw from the study, it will not affect any current or future care you may receive from any health service.

### What will happen to me if I take part?

If you choose to take part, I will arrange a meeting at a time that is convenient for you. The meeting will last for approximately 90 minutes. There will be an interview and some questionnaires. With your permission, I would like to audio record the interview so that I can write down later the things that we have said. You will be able to request a summary of the finished report. This will be completed by July 2012. You will not be required to be involved in the research process after the interview has taken place.

When I have met with enough participants, I will analyse the questionnaires and the interviews to compare the responses of people with and without psychosis. I will then write this up as a thesis to be marked at the University of East Anglia. Your name will not be used in the thesis.

#### What will I have to do?

We will agree a time and a location for a meeting and I will ask you some questions about when you feel anxious in social situations. You will not be asked to talk about anything you do not wish to talk about. You will then be asked to complete some questionnaires.

#### What are the possible risks and benefits of taking part?

I cannot promise that you will benefit directly from the study, but your experiences may help improve understanding of social anxiety and could contribute to the development of psychological treatment to help people overcome social anxiety. The interview will involve questions about a topic that may cause you to think about things that have been difficult. If you feel uncomfortable or upset at any stage, the interview can be stopped and you can withdraw from the study if you wish. You do not have to give a reason for this.

If you find the interview distressing, we will stop and can discuss this. If you think that you would benefit from discussing the issues raised with someone who is not linked to this research, then I would advise you to speak to your care co-ordinator. If you wish, I can provide you and your care co-ordinator with a short report of the things we have talked about to help you think about what support you might need in the future.

### What happens when the research study stops?

Summary reports will be given to the NHS services involved in the research. Participants in the research will also have summaries if requested. You can have a copy of the summary report to keep if you wish. You will need to provide your contact details in order to receive this. You will not be required to do anything else, but you will be directed to sources of support if you need it.

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### Will my taking part in the study be kept confidential?

Yes. I will follow ethical and legal practice and all information about you will be handled in confidence as detailed above and in Part 2.

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#### Part 2

# What will happen if I don't want to carry on with the study?

You can choose to withdraw from the study at any point prior to the report being submitted for assessment in July 2012. If you choose to withdraw, your data will be destroyed and any information you have given me will not be used in the research.

#### What if there is a problem?

If you have a concern about any aspect of the study, you can contact me at <a href="mailto:sarah.cooke@uea.ac.uk">sarah.cooke@uea.ac.uk</a> or through your care co-ordinator, and I can arrange to telephone you. I will do my best to address your concerns. If you remain unhappy and wish to complain formally about the conduct of the research (the procedures carried out by the researcher), you can do this through the NHS complaints procedure. Details can be obtained from the Norfolk Early Intervention Service.

#### Will my taking part in this study be kept confidential?

The recording of the interview will be stored as a password protected file on a secure hard drive on the University of East Anglia network and on a password protected memory stick during the research process. Following completion of the research, the recording and questionnaires will be stored securely for 5 years before being destroyed. They will be stored in a separate location from any documents that could identify you such as your consent form, which will be contained in a locked storage facility. The recording will be stored as a password protected file and on an encrypted memory stick.

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#### Who is organising the research?

I am organising the research with the support of the University of East Anglia. The university is the main sponsor of the study. No one is being paid to carry out this research.

#### Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favourable opinion by the Norfolk Research Ethics Committee. The Research Ethics Committee has also received a scientific review of the research conducted by the University of East Anglia.

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Alternatively, you may wish to contact the researcher's supervisor who has responsibility for supervising the research:

1. Professor David Fowler
Psychology and Psychiatry Group
Department of Psychological Science
Norwich Medical School UEA
University of East Anglia
Norwich
NR4 7TJ

01603 59 3601 (tel) d.fowler@uea.ac.uk 2. Dr Sian Coker
Psychology and Psychiatry Group
Department of Psychological Science
Norwich Medical School UEA
University of East Anglia
Norwich
NR4 7TJ

01603 59 3544 (tel) s.coker@uea.ac.uk

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#### Information about the Research

# An Investigation of the Nature of Social Anxiety in People with and without a Diagnosis of Psychosis.

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When I have met with enough participants, I will analyse the questionnaires and the interviews to compare the responses of people with and without psychosis. I will then write this up as a thesis to be marked at the University of East Anglia. Your name will not be used in the thesis.

#### What will I have to do?

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If you find the interview distressing, we will stop and can discuss this. If you think that you would benefit from discussing the issues raised with someone who is not linked to this research, then I would advise you to speak to the person you have contact with in the service that referred you into the study or your GP. If you wish, I can provide you and the professional working with you with a short report of the things we have talked about to help you think about what support you might need in the future.

### What happens when the research study stops?

Summary reports will be given to the NHS services involved in the research. Participants in the research will also have summaries if requested. You can have a copy of the summary report to keep if you wish. You will need to provide your contact details in order to receive this. You will not be required to do anything else, but you will be directed to sources of support if you need it.

#### What happens if there is a problem?

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. The detailed information on this is given in Part 2.

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Yes. I will follow ethical and legal practice and all information about you will be handled in confidence as detailed above and in Part 2.

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### What will happen if I don't want to carry on with the study?

You can choose to withdraw from the study at any point prior to the report being submitted for assessment in July 2012. If you choose to withdraw, your data will be destroyed and any information you have given me will not be used in the research.

#### What if there is a problem?

If you have a concern about any aspect of the study, you can contact me at <a href="mailto:sarah.cooke@uea.ac.uk">sarah.cooke@uea.ac.uk</a>, and I can arrange to telephone you. I will do my best to address your concerns. If you remain unhappy and wish to complain formally about the conduct of the research (the procedures carried out by the researcher), you can do this through the NHS complaints procedure. Details can be obtained from any NHS site.

#### Will my taking part in this study be kept confidential?

The recording of the interview will be stored as a password protected file on a secure hard drive on the University of East Anglia network and on a password protected memory stick during the research process. Following completion of the research, the recording and questionnaires will be stored securely for 5 years before being destroyed. They will be stored in a separate location from any documents that could identify you such as your consent form, which will be contained in a locked storage facility. The recording will be stored as a password protected file and on an encrypted memory stick.

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I am organising the research with the support of the University of East Anglia. The university is the main sponsor of the study. No one is being paid to carry out this research.

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Alternatively, you may wish to contact the researcher's supervisors who have responsibility for supervising the research:

1. Professor David Fowler
Psychology and Psychiatry Group
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01603 59 3601 (tel) d.fowler@uea.ac.uk 2. Dr Sian Coker
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#### Information about the Research

# An Investigation of the Nature of Social Anxiety in People with and without a Diagnosis of Psychosis.

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Primary Supervisor: Dr Sian Coker, Clinical Psychologist and Research Tutor, UEA. Clinical Supervisor: Professor David Fowler, Professor of Psychiatry, UEA. Collaborator: Dr Ruth Turner, Clinical Psychologist, Central Norfolk Early Intervention Team (CNEIT).

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Part 1 tells you the purpose of this study and what will happen to you if you take part.

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Please ask me if there is anything that is not clear or if you would like more information.

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- I am particularly interested in the thoughts, memories and previous experiences of people with social anxiety.

### Why have I been invited?

I am recruiting participants who feel anxious in social situations and who have not experienced a psychotic illness.

#### Do I have to take part?

It is up to you to decide to join the study. I will describe the study and go through this information sheet. If you agree to take part, I will then ask you to sign a consent form. You will be given a copy of this information sheet and the signed consent form to keep. You are free to withdraw at any time, without giving a reason. If you decide not to take part or you wish to withdraw from the study, it will not affect any current or future care you may receive from any health service or any service at UEA.

# What will happen to me if I take part?

If you choose to take part, I will arrange a meeting at a time that is convenient for you. The meeting will last for approximately 90 minutes. There will be an interview and some questionnaires. With your permission, I would like to audio record the interview so that I can write down later the things that we have said. You will be able to request a summary of the study findings. This will be completed by July 2012. You will not be required to be involved in the research process after the interview has taken place.

When I have met with enough participants, I will analyse the questionnaires and the interviews to compare the responses of people with and without psychosis. I will then write this up as a thesis to be marked at the University of East Anglia. Your name will not be used in the thesis.

#### What will I have to do?

We will agree a time for a meeting in a private room at UEA and I will ask you some questions about when you feel anxious in social situations. You will not be asked to talk about anything you do not wish to talk about. You will then be asked to complete some questionnaires.

#### What are the possible risks and benefits of taking part?

I cannot promise that you will benefit directly from the study, but your experiences may help improve understanding of social anxiety and could contribute to the development of psychological treatment to help people overcome social anxiety. The interview will involve questions about a topic that may cause you to think about things that have been difficult. If you feel uncomfortable or upset at any stage, the interview can be stopped and you can withdraw from the study if you wish. You do not have to give a reason for this.

If you find the interview distressing, we will stop and can discuss this. If you think that you would benefit from discussing the issues raised with someone who is not linked to this research, then I would advise you to speak to your GP or the university counselling service. Details of support available at UEA can be found at: <a href="http://www.uea.ac.uk/services/students/mental\_health#beckie">http://www.uea.ac.uk/services/students/mental\_health#beckie</a>. If you wish, I can provide you with a summary of your questionnaire scores to help you think about what support you might need in the future.

#### What happens when the research study stops?

Summary reports will be given to the NHS services involved in the research. Participants in the research will also have summaries if requested. You can have a copy of the summary report to keep if you wish. You will need to provide your contact details in order to receive this. You will not be required to do anything else, but you will be directed to sources of support if you need it.

# What happens if there is a problem?

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. The detailed information on this is given in Part 2.

#### Will my taking part in the study be kept confidential?

Yes. I will follow ethical and legal practice and all information about you will be handled in confidence as detailed above and in Part 2.

If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making any decision.

#### Part 2

#### What will happen if I don't want to carry on with the study?

You can choose to withdraw from the study at any point prior to the report being submitted for assessment in July 2012. If you choose to withdraw, your data will be destroyed and any information you have given me will not be used in the research.

### What if there is a problem?

If you have a concern about any aspect of the study, you can contact me at <a href="mailto:sarah.cooke@uea.ac.uk">sarah.cooke@uea.ac.uk</a>, and I can arrange to telephone you. I will do my best to address your concerns. If you remain unhappy and wish to complain formally about the conduct of the research (the procedures carried out by the researcher), please contact Dr Sian Coker at the University of East Anglia in the first instance. Her contact details are at the end of this information sheet.

#### Will my taking part in this study be kept confidential?

The recording of the interview will be stored as a password protected file on a secure hard drive on the University of East Anglia network and on a password protected memory stick during the research process. Following completion of the research, the recording and questionnaires will be stored securely for 5 years before being destroyed. They will be stored in a separate location from any documents that could identify you such as your consent form, which will be contained in a locked storage facility. The recording will be stored as a password protected file and on an encrypted memory stick.

The only time that I would tell anyone about anything you have said without your permission is if I believe that you or someone you tell me about may be at risk.

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1. Professor David Fowler
Psychology and Psychiatry Group
Department of Psychological Science
Norwich Medical School UEA
University of East Anglia
Norwich
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01603 59 3601 (tel) d.fowler@uea.ac.uk 2. Dr Sian Coker
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Department of Psychological Science
Norwich Medical School UEA
University of East Anglia
Norwich
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#### **CONSENT FORM**

An Investigation of the Nature of Social Anxiety in People with and without a Diagnosis of Psychosis.

Name	of researcher: Sara	h Cooke		Please initial box	
1.	28/06/2011 (versio	n 1.0) for the above s	od the information sheet dated study. I have had the opportunity and have had these answered	to	
2.	any point. I underst		untary and that I am free to withoute to give a reason for my withdrated.		
3.	I consent to the audio recording of my interview and understand that this recording will be stored securely and destroyed once the research is complete.				
4.	I understand that things I say during the interview may be quoted in published research. I consent to the use of quotations and understand that I will not be identifiable in any written reports.				
5.	I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from regulatory authorities or from the NHS Trust, where it is relevant to my taking part on this research. I give permission for these individuals to have access to my records.				
6.	I agree to take part	in the above study.			
 Name		Date	Signature		
 Resea	 rcher	 Date	 Signature		

When completed, 1 for participant, 1 for researcher





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- I am particularly interested in the thoughts, memories and previous experiences of people with social anxiety.

### Why have I been invited?

Clients within the Early Intervention Services in Norfolk and Suffolk NHS Foundation Trust who experience social anxiety will be invited to take part.

#### Do I have to take part?

It is up to you to decide to join the study. I will describe the study and go through this information sheet. If you agree to take part, I will then ask you to sign a consent form. You will be given a copy of this information sheet and the signed consent form to keep. You are free to withdraw at any time, without giving a reason. The research is not linked to your treatment. If you decide not to take part or you wish to withdraw from the study, it will not affect any current or future care you may receive from any health service.

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#### What are the possible risks and benefits of taking part?

I cannot promise that you will benefit directly from the study, but your experiences may help improve understanding of social anxiety and could contribute to the development of psychological treatment to help people overcome social anxiety. The interview will involve questions about a topic that may cause you to think about things that have been difficult. If you feel uncomfortable or upset at any stage, the interview can be stopped and you can withdraw from the study if you wish. You do not have to give a reason for this.

If you find the interview distressing, we will stop and can discuss this. If you think that you would benefit from discussing the issues raised with someone who is not linked to this research, then I would advise you to speak to your care co-ordinator. If you wish, I can provide you and your care co-ordinator with a short report of the things we have talked about to help you think about what support you might need in the future.

# What happens when the research study stops?

Summary reports will be given to the NHS services involved in the research. Participants in the research will also have summaries if requested. You can have a copy of the summary report to keep if you wish. You will need to provide your contact details in order to receive this. You will not be required to do anything else, but you will be directed to sources of support if you need it.

#### What happens if there is a problem?

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. The detailed information on this is given in Part 2.

# Will my taking part in the study be kept confidential?

Yes. I will follow ethical and legal practice and all information about you will be handled in confidence as detailed above and in Part 2.

If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making any decision.

#### Part 2

# What will happen if I don't want to carry on with the study?

You can choose to withdraw from the study at any point prior to the report being submitted for assessment in July 2012. If you choose to withdraw, your data will be destroyed and any information you have given me will not be used in the research.

#### What if there is a problem?

If you have a concern about any aspect of the study, you can contact me at <a href="mailto:sarah.cooke@uea.ac.uk">sarah.cooke@uea.ac.uk</a> or through your care co-ordinator, and I can arrange to telephone you. I will do my best to address your concerns. If you remain unhappy and wish to complain formally about the conduct of the research (the procedures carried out by the researcher), you can do this through the NHS complaints procedure. Details can be obtained from the Early Intervention Service.

#### Will my taking part in this study be kept confidential?

The recording of the interview will be stored as a password protected file on a secure hard drive on the University of East Anglia network and on a password protected memory stick during the research process. Following completion of the research, the recording and questionnaires will be stored securely for 5 years before being destroyed. They will be stored in a separate location from any documents that could identify you such as your consent form, which will be contained in a locked storage facility. The recording will be stored as a password protected file and on an encrypted memory stick.

The only time that I would tell anyone about anything you have said without your permission is if I believe that you or someone you tell me about may be at risk.

#### What will happen to the results of the research study?

In the first instance, I will use the results to write a thesis. The thesis will be submitted to the University of East Anglia and summary reports will be given to the services involved in the research and any participants who have requested copies. Once it has been marked, the thesis will be kept in the borrowing library and available to be read by other Trainee Clinical Psychologists. It will also be publicly available to other people who want to read it. It is also possible that a version of the thesis will be submitted for publication by a scientific journal. You will not be identified in any version of the study's results.

#### Who is organising the research?

I am organising the research with the support of the University of East Anglia. The university is the main sponsor of the study. No one is being paid to carry out this research.

#### Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favourable opinion by the Norfolk Research Ethics Committee. The Research Ethics Committee has also received a scientific review of the research conducted by the University of East Anglia.

#### Further information and contact details

For general information about research, you may find the following website helpful:

#### www.invo.org.uk

For specific information about this research project or to raise any concerns, please email the researcher at sarah.cooke@uea.ac.uk.

Alternatively, you may wish to contact the researcher's supervisor who has responsibility for supervising the research:

1. Professor David Fowler
Psychology and Psychiatry Group
Department of Psychological Science
Norwich Medical School UEA
University of East Anglia
Norwich
NR4 7TJ

01603 59 3601 (tel) d.fowler@uea.ac.uk 2. Dr Sian Coker
Psychology and Psychiatry Group
Department of Psychological Science
Norwich Medical School UEA
University of East Anglia
Norwich
NR4 7TJ

01603 59 3544 (tel) s.coker@uea.ac.uk

If you are unsure about whether to participate, I would be happy to arrange to telephone you or discuss the study in person. You may also wish to talk to staff in the Early Intervention Service or your friends and family.





### **CONSENT FORM**

An Investigation of the Nature of Social Anxiety in People with and without a Diagnosis of Psychosis.

Name	e of researcher: Sarah Cooke	Please	initial box		
1.	I confirm that I have read and understood the info 28/06/2011 (version 1.0) for the above study. I hat consider the information, ask questions and have satisfactorily.	ave had the opportunity to			
2.	I understand that my participation is voluntary and any point. I understand that I do not have to give and that my legal rights will not be affected.				
3.	I consent to the audio recording of my interview a recording will be stored securely and destroyed or				
4.	I understand that things I say during the interview may be quoted in published research. I consent to the use of quotations and understand that I will not be identifiable in any written reports.				
5.	I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from regulatory authorities or from the NHS Trust, where it is relevant to my taking part on this research. I give permission for these individuals to have access to my records.				
6.	I agree to take part in the above study.				
Name	Date	Signature			
 Resea	archer Date	 Signature			

When completed, 1 for participant, 1 for researcher





# An Investigation of the Nature of Social Anxiety in People with and without a Diagnosis of Psychosis

# **Participant Report**

Primary Researcher: Sarah Cooke, Trainee Clinical Psychologist, University of East Anglia (UEA).

Sarah.Cooke@uea.ac.uk

NAME: XX

REFERRED BY: XX

DATE OF ENTRY INTO STUDY: XX

X took part in the above study exploring social anxiety. The research involved questionnaires and an interview exploring thoughts, beliefs, memories and previous experiences related to feeling anxious in social situations. X consented to having the information from his participation in the study shared with the Suffolk Early Intervention Service. The following is a summary of that information.

# Screening Measure: Social Interaction Anxiety Scale (SIAS, Mattick & Clarke, 1989)

This questionnaire was used to establish whether potential participants met criteria for the study on the basis of their level of social anxiety. People with a diagnosis of social phobia have been found to score an average of around 35/80. X scored 59/80 on this measure, suggesting a significant level of social anxiety. He scored particularly highly on items related to making friends and finding things to talk about.

#### **Thoughts and Beliefs**

# The Brief Core Schema Scales (BCSS, Fowler et al., 2006).

This measure required X to indicate whether he holds a range of positive and negative beliefs about himself and about other people and how strongly he holds these beliefs. Compared to a non-clinical sample and to other respondents experiencing psychosis, X scored more highly on negative beliefs about himself and about other people and indicated fewer positive beliefs about himself and others. X's responses suggest that he may have some difficulties both with his self-esteem and with trusting other people. This is not uncommon in people who feel anxious in social situations.





### The Brief Fear of Negative Evaluations Scale (FNEB, Leary, 1983).

This questionnaire lists statements relating to the expectation that others will judge the respondent negatively and asks how characteristic the statements are of their thoughts. X scored 55/60 on this measure, which is higher than the range of the scores obtained by most non-clinical respondents but is in keeping with X's reports of anxiety in social situations. Examples of the statements that X rated as most characteristic of him were:

I worry about what other people will think of me even when I know it doesn't make any difference.

I often worry that I will say or do the wrong things.

### The Other as Shamer Scale (OAS, Goss, Gilbert, & Allan 1994).

This is a measure of external shame and explores how frequently the respondent thinks other people make negative judgements about them. X scored 61/72 on this measure, which is higher than the scores obtained by most other respondents. It is not uncommon for people who have experienced a first episode of psychosis to feel stigmatised or negatively judged by others, and research suggests that this may contribute to social anxiety.

The items that X rated as feeling or experiencing most often included:

I feel other people see me as not good enough

Other people see me as somehow defective as a person

Other people think I have lost control over my body and feelings

### Green et al. Paranoid Thoughts Scale (GPTS, 2008).

This measure asks respondents to rate how much specific thoughts have applied to them over the past month. It is not only relevant to clinical levels of paranoia – these thoughts have been found to be present on a continuum within the normal population and the research aims to capture the full range of thoughts that participants may have about other people. The first subscale (social reference) relates to concerns over the actions or communications of other people and whether the respondent thinks they have personal significance for them. X scored 43/80 on this subscale. This is higher than the scores obtained by most non-clinical respondents but similar to the scores obtained by people who are distressed by thoughts about the meaning of other people's actions. X rated the following ideas of social reference the most highly in relation to the previous month:

I have often heard people referring to me

I was certain that people have followed me

The second subscale (persecutory) relates to beliefs that other people intend or have intended to harm the respondent. X scored 40/80 on this subscale, which is higher than the range of scores obtained by most non-clinical respondents but lower than the average score obtained by people assessed as having a persecutory

delusion. The following persecutory thoughts are examples of items that X rated as 4 on a 5-point scale:

People have intended me harm

I was convinced there was a conspiracy against me

I was sure someone wanted to hurt me

# **Psychological Symptoms**

# **Brief Symptom Inventory (BSI, Derogatis, 1975).**

This measure asks the respondent to rate how much a range of possible problems or symptoms have bothered them over the past week. It is not a diagnostic tool. X's scores on the different symptom areas were compared to those of other male inpatients. He scored most highly on the psychoticism subscale, which includes items such as 'The idea that you are being punished for your sins' and having 'The idea that someone else can control your thoughts'. This is in keeping with the difficulties that X is receiving support around and his symptoms seemed to be becoming less distressing as a result of his time in hospital. X's scores on the other symptom areas were within the same range as those obtained by other male inpatients who may also be experiencing difficulties in certain areas.

# Semi-structured interview (Hackmann, Clark, & McManus, 2000; Hackmann, Surawy, & Clark, 1998).

In the interview, X was asked whether he experiences images when socially anxious and whether these are related to a memory. Details of images and memories were explored. X found it difficult to give examples of specific situations that make him feel anxious but reported that anything involving going outside is difficult for him. He was able to use a walk with other residents from the ward as an example during the interview.

During his walk, X described experiencing an image of himself looking 'nervous and vulnerable'. He reported experiencing similar images in other anxiety-provoking situations. He sees this image as if he was looking at himself through someone else's eyes, and he felt smaller than usual when he experienced the image. X associated the image with some difficult feelings and he reported having experienced these feelings in social situations since childhood. However, there was not a particular memory that seemed to be closely linked to the image he described.

In summary, my session with X indicated that social situations are an ongoing difficulty for him and that he can feel quite worried about the actions or intentions of other people. X experiences a range of negative thoughts related to himself and others, and this is common in people who experience difficulties in social situations. X was positive that he would soon be discharged from hospital and thought that he might be interested in engaging in therapy to help him feel less anxious in social situations in the future (SARC research trial).

Although I have been able to give an indication of how X's scores compare with those of other people, this is not intended as a diagnostic assessment. Should

you have any further questions about the research, then please do not hesitate to contact me at <a href="mailto:sarah.cooke@uea.ac.uk">sarah.cooke@uea.ac.uk</a>.

Sarah Cooke Trainee Clinical Psychologist Supervised by Dr Ruth Turner

**Appendix O** 

**Normality Tables** 

Kolmogorov-Smirnov Test Statistic (K-S) and Significance Level (p) with

Degrees of Freedom (df) of Continuous Variables for the Social Anxiety and

Psychosis (SAp) and Social Anxiety (SA) Groups

Variable	Group	K-S	df	р
OAS	SAp	.09	30	.20
	SA	.07	35	.20
BSI depression <i>t</i> -score	SAp	.19	30	.01*
	SA	.12	35	.20
BFNE	SAp	.12	30	.20
	SA	.12	35	.20
BCSS negative self	SAp	.80	30	.20
	SA	.17	35	.01*
BCSS negative other	SAp	.11	30	.20
	SA	.18	35	.01*
GPTS total score	SAp	.10	30	.20
	SA	.09	35	.20
SRS-PTSD total	SAp	.14	30	.20
symptoms	SA	.16	35	.20

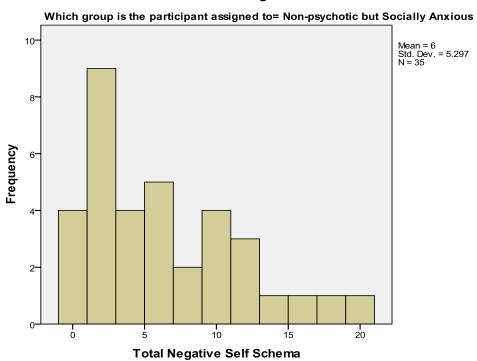
Note. OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BSI =Brief Symptom Inventory (Derogatis, 1975), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983b), BCSS = Brief Core Schema Scales (Fowler et al., 2006), GPTS = Green et al. Paranoid Thoughts Scale (Green et al., 2008), SRS-PTSD = Self-Rating Scale for PTSD (Carlier, Lamberts, Van Uchelen, & Gersons, 1998). \*p < .05.

# Appendix P

Histograms Showing Data Distribution of Skewed Variables

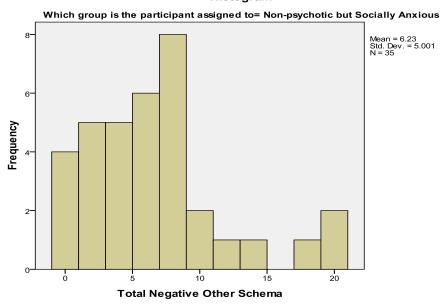
Negative Self Scores: SA Group

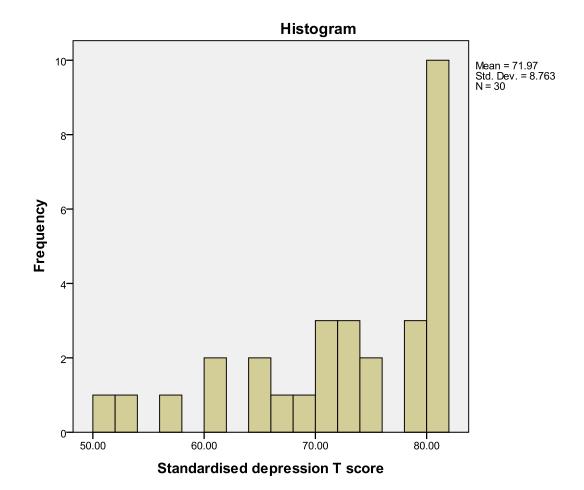
#### Histogram



Negative Other Scores: SA Group

#### Histogram





Appendix Q

Normality Tables Kolmogorov-Smirnov Test Statistic (K-S) and Significance Level (p) with Degrees of Freedom (df) of Transformed Variables

Variable	Group	K-S	df	р	
BCSS negative self:	SAp	.16	30	.05*	
square root	SA	.10	35	.20	
transformation					
BCSS negative other:	SAp	.10	30	.20	
square root	SA	.13	35	.12	
transformation					
BSI depression t-	SAp	.23	30	.00*	
scores:	SA	.22	35	.00*	
rereflected log					
transformation					
BSI depression t-	SAp	.29	30	.00*	
scores:	SA	.37	35	.00*	
rereflected inverse					
transformation					

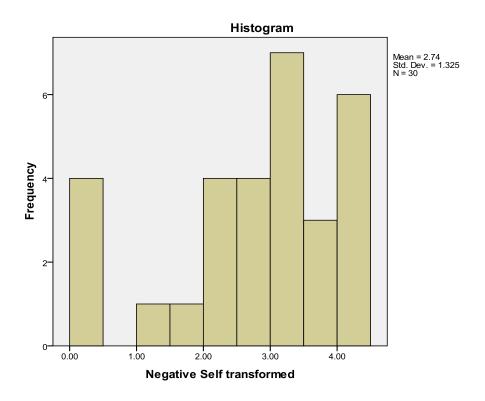
*Note.* SAp = Social anxiety and psychosis group, SA = social anxiety and no psychosis group.

BCSS = Brief Core Schema Scales (Fowler et al., 2006), BSI =Brief Symptom Inventory

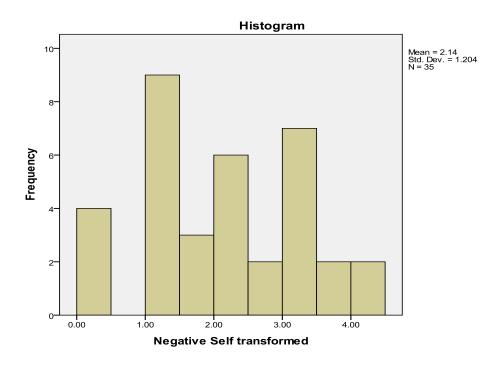
<sup>(</sup>Derogatis, 1975.

p < .05.

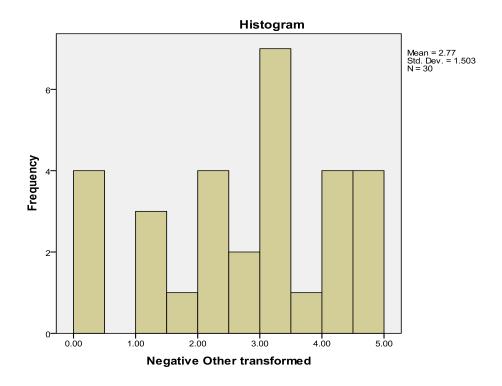
# Histograms Showing Data Distribution of Transformed Variables Negative Self Scores: Square Root Transformed (SAp Group)



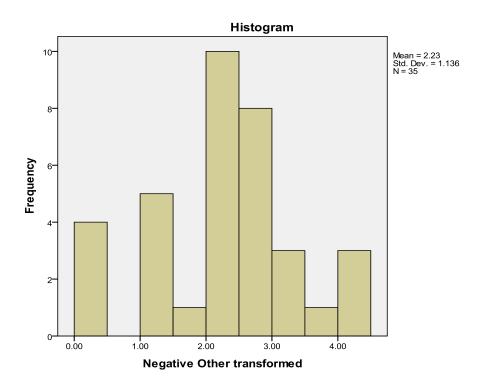
Negative Self Scores: Square Root Transformed (SA Group)

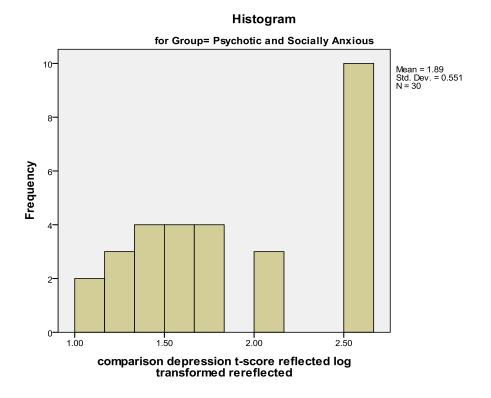


# Negative Other Scores: Square Root Transformed (SAp Group)

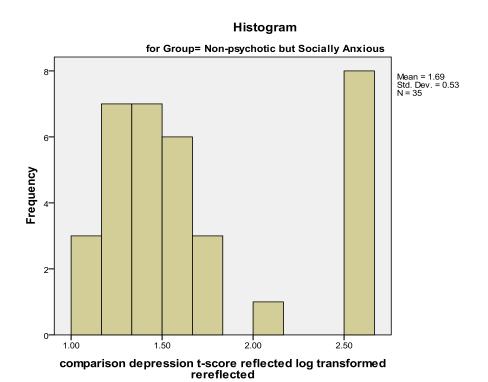


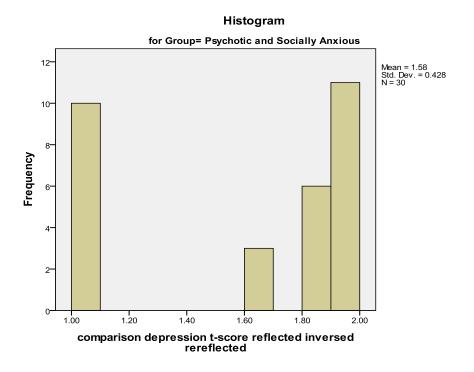
# Negative Other Scores: Square Root Transformed (SA Group)



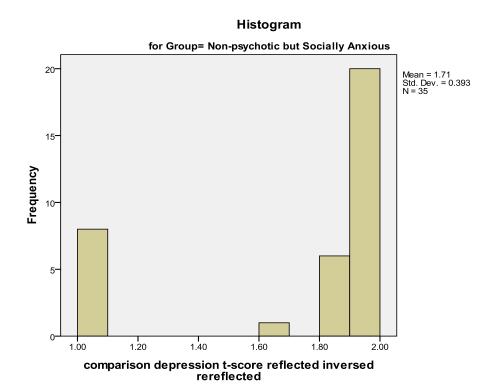


## BSI Depression T-Scores: Rereflected Log Transformation (SA Group)





BSI Depression T-Scores: Rereflected Inverse Transformation (SA Group)



### Appendix R

Hypothesis 5 Normality Tables

Kolmogorov-Smirnov Test Statistic (K-S) and Significance Level (p) with Degrees of Freedom (df) of Continuous Variables for Participants with Social Anxiety and Paranoia (SAPA) and Participants with Social Anxiety and No Paranoia (SAn)

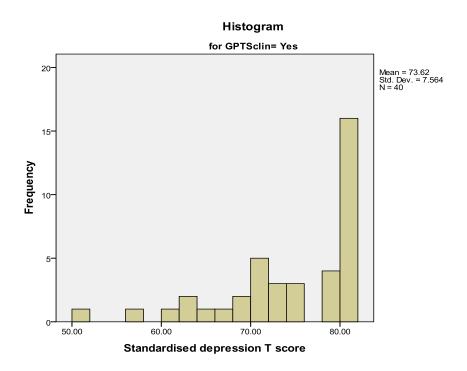
Variable	Group	K-S	df	p
OAS	SAPA	.09	40	.20
	SAn	.14	25	.20
BSI depression <i>t</i> -score	SAPA	.22	40	.00*
Score	SAn	.13	25	.20
BFNE	SAPA	.13	40	.07
	SAn	.12	25	.20
BCSS negative self	SAPA	.08	40	.20
	SAn	.21	25	.01*
BCSS negative other	SAPA	.15	40	.02*
	SAn	.15	25	.15
SRS-PTSD total	SAPA	.18	40	.13
symptoms	SAn	.13	25	.20

Note. OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BSI =Brief Symptom Inventory (Derogatis, 1975), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983b), BCSS = Brief Core Schema Scales (Fowler et al., 2006), SRS-PTSD = Self-Rating Scale for PTSD (Carlier, Lamberts, Van Uchelen, & Gersons, 1998). \*p < .05.

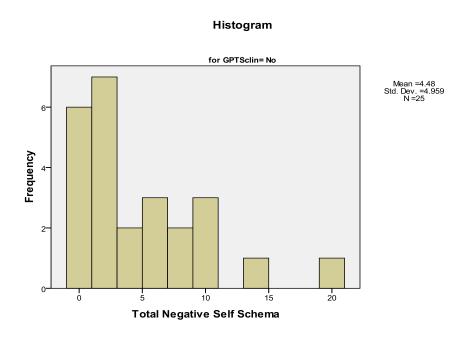
# Histograms for Hypothesis 5 Showing Data Distribution of Skewed and

## **Transformed Variables**

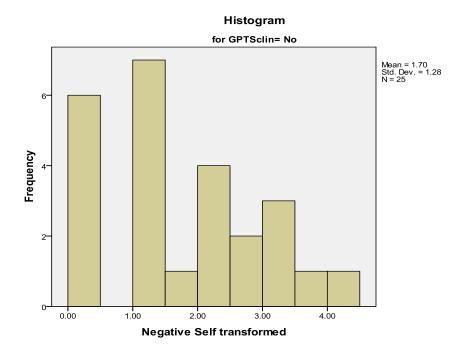
## BSI Depression T-Scores: SAPA Group



## BCSS Negative Self Scores: SAn Group

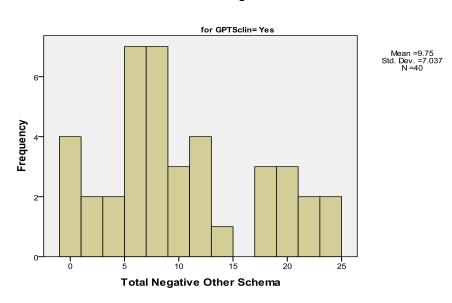


# Square Root Transformed BCSS Negative Self Scores: SAn Group

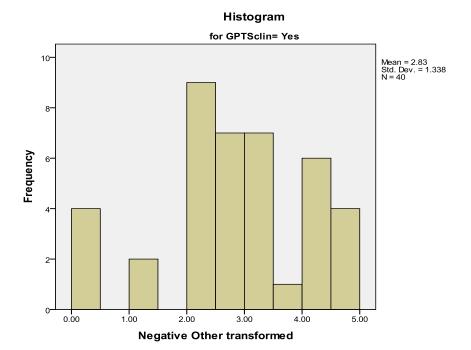


## BCSS Negative Other Scores: SAPA Group





# Square Root Transformed BCSS Negative Other Scores: SAPA Group



## **Appendix S**

Subsidiary Analyses Normality Tables

Kolmogorov-Smirnov Test Statistic (K-S) and Significance Level (p) with

Degrees of Freedom (df) of Continuous Variables for Participants with

Paranoia and Psychosis (PAp) and Participants with Paranoia and no

Psychosis (PA)

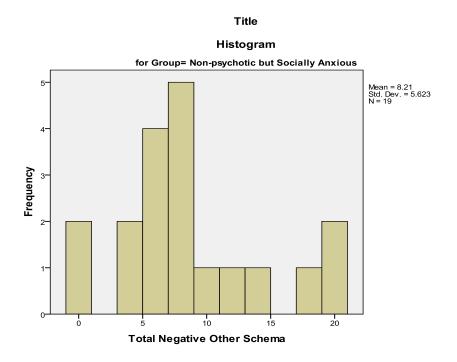
Variable	Group	K-S	df	p
OAS	РАр	.09	21	.20
	PA	.11	19	.20
BFNE	PAp	.14	21	.20
	PA	.13	19	.20
BCSS negative self	PAp	.11	21	.20
	PA	.10	19	.20
BCSS negative other	PAp	.14	21	.20
	PA	.20	19	.05*

Note. OAS = Other as Shamer Scale (Goss, Gilbert, & Allan, 1994), BFNE = The Brief Fear of Negative Evaluations Scale (Leary, 1983b), BCSS = Brief Core Schema Scales (Fowler et al., 2006).

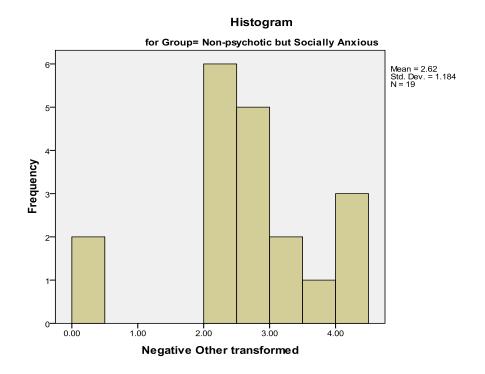
<sup>\*</sup>p < .05.

Histograms for Subsidiary Analyses Showing Data Distribution of Skewed and Transformed Variables

BCSS Negative Other Scores: PA Group



Square Root Transformed BCSS Negative Other Scores: PA Group





Appendix T

# **National Research Ethics Service**

### **DECLARATION OF THE END OF A STUDY**

(For all studies except clinical trials of investigational medicinal products)

To be completed in typescript by the Chief Investigator and submitted to the Research Ethics Committee that gave a favourable opinion of the research ("the main REC") within 90 days of the conclusion of the study or within 15 days of early termination. For questions with Yes/No options please indicate answer in bold type.

### 1. Details of Chief Investigator

Name:	Sarah Cooke
Address:	Postgraduate Research Programmes Office Faculty of Medicine and Health Sciences Elizabeth Fry Building Room 2.30 University of East Anglia Norwich Norfolk NR4 7TJ
Telephone:	(01603) 593076
Email:	sarah.cooke@uea.ac.uk
Fax:	

#### 2. Details of study

Full title of study:	The role of shame, schemas, cognitions and memories in social anxiety following psychosis: A comparison with social anxiety without psychosis.
Research sponsor:	University of East Anglia
Name of main REC:	Norfolk Research Ethics Committee
Main REC reference number:	11/EE/0332

### 3. Study duration

Date study commenced:	10/10/11
Date study ended:	19/04/12 (data collection) 01/06/12 (write-up)
Did this study terminate prematurely?	Yes / <b>No</b> If yes please complete sections 4, 5 & 6, if no please go direct to section 7.

4.	Circumstances	of	early	termination
----	---------------	----	-------	-------------

What is the justification for this early termination?	

## 5. Temporary halt

Is this a temporary halt to the study?	Yes / No		
If yes, what is the justification for temporarily halting the study? When do you expect the study to re-start?	e.g. Safety, difficulties recruiting participants, trial has not commenced, other reasons.		

## 6. Potential implications for research participants

Are there any potential implications for research participants as a result of terminating/halting the study prematurely? Please describe the steps taken to address them.	
---	--

### 7. Final report on the research

Is a summary of the final report on the research enclosed with this form?	Yes / No		
	If no, please forward within 12 months of the end of the study.		

### 8. Declaration

Signature of Chief Investigator:	
Print name:	Sarah Cooke
Date of submission:	19/06/12

The Role of Shame, Schemas, Cognitions and Memories in Social Anxiety
Following Psychosis: A Comparison with Social Anxiety without Psychosis:

Summary of Final Report (Thesis)

The study achieved its aim of exploring social anxiety (SA) in psychosis through comparison with SA in participants without a diagnosis of psychosis.

Recruitment fell short of the numbers required based on a sample size calculation (45 in each group). However, 30 participants with SA and psychosis (SAp group) and 35 participants with SA and no history of psychosis (SA group) were recruited.

Participants completed self-report measures of social anxiety, shame, fear of negative evaluation, beliefs about self and others, paranoia and depression. They also took part in a semi-structured interview exploring any images experienced when socially anxious and whether these images were related to a specific memory.

Participants who reported a memory completed a self-report measure of PTSD symptoms in relation to the event in that memory.

### **Overview of findings**

#### Shame.

Participants in the SAp group had significantly higher scores on a measure of shame than participants in the SA group, suggesting that SA in psychosis is associated with the perception of being seen by others as inadequate or inferior. It may also suggest that participants with psychosis experienced stigma. However, the association between psychosis and shame did not remain significant when depression was controlled for in the analysis.

### Cognitions and schemas.

There was no significant difference between the groups on a measure of fear of negative evaluation (a commonly used measure of socially anxious cognitions).

This suggests that participants with and without psychosis did not differ in their level of endorsement of negative cognitions related to social situations.

Participants in the SAp group had significantly higher scores than participants in the SA group on a measure of negative self schemas, suggesting that participants with psychosis had a higher level of negative beliefs about themselves. However, this difference did not remain significant when depression was entered into the analysis.

There was no significant difference between the groups in negative other schemas, suggesting that negative beliefs about other people are not more extreme in socially anxious participants with psychosis compared to socially anxious participants without psychosis.

#### Memories.

Fewer participants than expected reported a specific memory linked to an image experienced when socially anxious. This limited the statistical analyses of this data. However, participants with psychosis were more likely to report a specific memory, indicating that images experienced when socially anxious may be more highly associated with memories of specific past events for these participants. Based on the descriptive data, there was no support for the hypothesis that participants with psychosis would report more memories focused on a threatening other or others.

### PTSD symptoms.

Only participants who reported a memory in the semi-structured interview completed the measure of PTSD symptoms, limiting the amount of data available for analysis. Based on this small sample, there was no significant difference between the groups in the number of participants meeting diagnostic criteria for PTSD. However, participants with psychosis reported a significantly higher number of

individual PTSD symptoms. This suggests that the images experienced by socially anxious participants with psychosis are more likely to be related to memories associated with trauma symptoms than the images experienced by socially anxious participants without psychosis. However, this difference did not remain significant when depression was entered into the analysis.

When considering the effect of controlling for depression on the analyses, it could be suggested that the findings indicate that it is higher levels of depression in participants with psychosis that cause higher levels of shame, negative self-schemas and PTSD symptoms. However, shame, depression, PTSD and SA have all been found to be prevalent following a diagnosis of psychosis, and may be considered as overlapping reactions to the experience or diagnosis (e.g., Birchwood, 2003; Birchwood et al., 2006).

#### Paranoia.

Participants in the SAp group had significantly higher scores on a measure of paranoia than participants in the SA group, suggesting that participants with psychosis experienced higher levels of paranoid beliefs. However, participants in both groups had a mean score more than 1 standard deviation above that of a non-clinical reference group (Green et al., 2008), and over 50% of participants without psychosis scored above the clinical cut-off for paranoia.

In order to explore the role of paranoia further, additional analyses were conducted to compare participants (regardless of whether they had psychosis) with and without clinical levels of paranoia on factors associated with SA. Participants with clinical levels of paranoia had significantly higher scores on measures of shame, negative self schemas and negative other schemas. Descriptive data suggest that

they were also more likely to report memories focused on a threatening other/others (rather than on own performance). Participants with paranoia also reported a significantly greater number of PTSD symptoms in relation to memories elicited by the interview. There was no significant difference between the groups in fear of negative evaluation scores. Effect sizes suggest that the differences between participants with and without paranoia were greater than the differences between participants with and without psychosis.

### Additional findings.

Subsidiary analyses indicated that, despite the effect of depression on the analyses of shame, negative self schemas and PTSD symptoms in the SAp and SA groups, there was no significant difference in level of depression in participants with and without psychosis. However, participants with clinical levels of paranoia had significantly higher levels of depression than participants without paranoia. This suggests that SA comorbid with paranoia is associated with high levels of depression.

When participants scoring above the clinical cut-off for paranoia were split into those with and without psychosis, there were no significant differences on measures of shame, fear of negative evaluation, or negative self and other schemas. This suggests that paranoia rather than psychosis may be a more clinically useful distinction between types of SA.

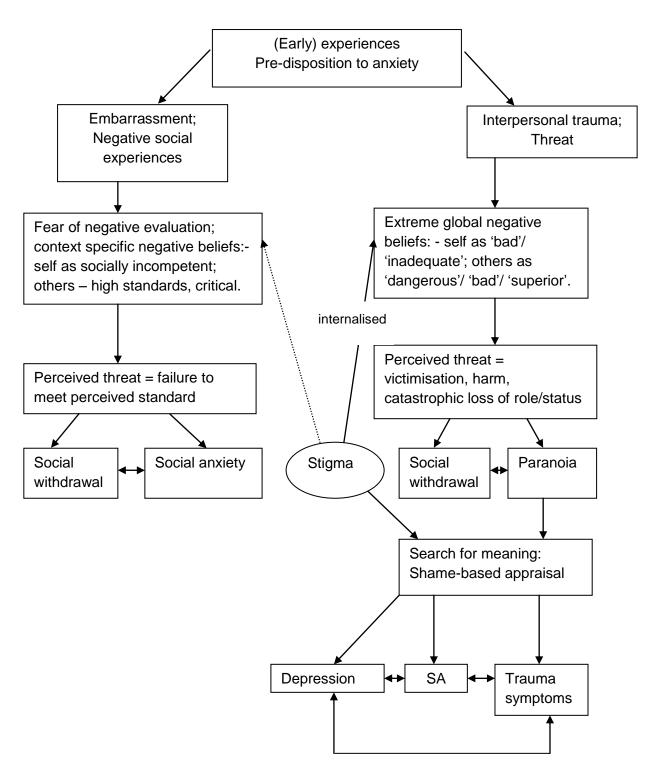
#### **Service Implications**

The findings of this study suggest that there may be two pathways to SA.

These are shown in Figure 1.

Figure 1

Pathways to Social Anxiety



SA comorbid with paranoia is suggested to result from experiences of interpersonal trauma and threat, whereas 'typical' SA may relate to experiences of embarrassment and negative social interactions. These latter experiences are less likely to be associated with trauma symptoms but may lead to the development of context specific negative beliefs that are activated in social situations. The negative self and other beliefs that develop as a result of traumatic experiences are hypothesised to be more extreme and global. Individuals who hold such beliefs are more likely to internalise stigma and develop shame-based appraisals of their experiences, contributing to emotional dysfunction in the form of overlapping symptoms of depression, SA and trauma.

Although the findings of the current study suggest that paranoid SA is more common in individuals with psychosis, this was not a clear distinction. As such, a conceptualisation of SA based on paranoia may have clinical implications for individuals with and without psychosis. Whilst paranoid beliefs may be routinely assessed in working with clients with psychosis, they may be missed in formulating SA as a primary diagnosis. This may be particularly the case where clients are reluctant to disclose paranoid ideation as a result of their appraisal of their beliefs and awareness of likely societal reactions.

The assessment of paranoia, trauma and shame will require the development of a strong therapeutic relationship. The establishment of such a relationship is also imperative prior to any intervention aimed at challenging beliefs associated with paranoia, shame, and schemas arising from interpersonal trauma. The early stages of therapy may necessitate the expression of openness to the client's perspective and validation of distress rather than direct challenge of paranoid beliefs (Fowler et al., 1995). Drawing on methods adopted in CBT for psychosis may prove useful

regardless of diagnosis where SA is part of emotional dysfunction associated with paranoia. However, current service models for treating anxiety disorders may warrant adapting to allow for longer periods of treatment and more flexible ways of working.

Thorough assessment of paranoid SA may also reveal symptoms of PTSD and traumatic memories underpinning negative images experienced when socially anxious. In some cases PTSD may need to be treated before SA can be addressed.

The current findings suggest that some individuals with psychosis present with SA that is concordant with cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997). Therefore, it should not be automatically assumed that existing CBT interventions for SA are inappropriate. Preliminary findings suggest that an assisted self-help intervention guided by a formulation based on the Clark and Wells (1995) model of SA is effective in reducing SIAS scores of socially anxious participants in an El service (Turner, White, Lower, Gega, & Fowler, 2011). Although the mean pre and post intervention scores suggest that many participants continue to have clinical levels of SA, a mean reduction of 16.75 points on the SIAS is likely to have a significant impact on quality of life. Where SA is part of general emotional dysfunction, as conceptualised in the paranoia and shame based pathway, the behavioural components of CBT for SA may increase hope and break cycles of inactivity associated with depression. Ongoing assessment and developing a longitudinal formulation may help to identify individuals who require additional or more sophisticated interventions. A cognitive behavioural approach combining components of CBT for SA with additional interventions targeting social disability in more complex early psychosis cases is currently being trialled in EI services. The

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findings of such studies may help inform interventions in other mental health settings.

### **Plans for Dissemination**

A summary of the results of the research has been disseminated to the clinical teams involved in recruitment into the study. Participants who requested feedback on the study findings have been sent an appropriate summary. The thesis has been submitted for assessment to the Doctoral programme in Clinical Psychology at the University of East Anglia. Following feedback from the examiners and the application of any required corrections, the final thesis will be a publically accessible document available through the University. The researcher will be presenting the results of the study at the Annual Conference of the British Association of Behavioural and Cognitive Psychotherapies (BABCP) on 28<sup>th</sup> June 2012. There are plans to submit an article for publication in a scientific journal in the coming months.

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25 June 2012

Miss Sarah Cooke Trainee Clinical Psychologist Cambridgeshire & Peterborough NHS Foundation Trust Postgraduate Research Office Room 2.30, Elizabeth Fry Building Faculty of Health, UEA NR4 7TJ

Dear Miss Cooke

Study title: The Role of Shame, Schemas, Cognitions and Memories

in Social Anxiety Following Psychosis: A Comparison

with Social Anxiety without Psychosis.

REC reference: 11/EE/0332

fach

Protocol number: N/A

Thank you for sending the summary of the final research report for the above study dated 19 June 2012. The report will be reviewed by the Chair of the Research Ethics Committee, and I will let you know if any further information is requested.

11/EE/0332:

Please quote this number on all correspondence

Yours sincerely

PP

Peter Drew Assistant Committee Co-ordinator

E-mail: peter.drew@eoe.nhs.uk