Future-Directed Thinking In First Episode Psychosis

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For Miriam.

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Abstract

Psychosis encompasses a constellation of symptoms that have far-reaching social, physical and functional consequences for sufferers. One of the key clinical concerns in the management of psychotic illnesses is the risk of suicide, which is greatest in the early stages of psychosis. Hopelessness is consistently associated with risk for suicide but as a concept it is not well defined and is not specific enough to be of use in prediction of suicide. Future-directed thinking, particularly regarding positive future events, constitutes an aspect of hopelessness that is closely associated with risk for suicide. This study employed the Future Thinking Task to investigate whether future-directed thinking in first episode psychosis is significantly different from that of matched controls in performance or content, and to clarify the nature of its association with suicide risk in this patient group. In addition, the association of future-directed thinking with the negative symptoms of psychosis was investigated.

The results showed that individuals with psychosis were impaired in future-directed thinking globally, particularly with respect to the coming year. Specific deficits were shown in the domains of relations with other people and personal development and understanding. Associations were shown between future-directed thinking and suicide, and reduced positive future-directed thinking was shown to be strongly associated with increased severity of negative symptoms. The results suggest avenues for novel interventions to improve hopelessness, suicide risk and the severity of negative symptoms in psychotic illness, and thereby improve functional outcomes.

Abbreviations

ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
BHS	Beck Hopelessness Scale
CDSS	Calgary Depression Scale for Schizophrenia
DSH	Deliberate Self-Harm
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Revised.
EI	Early Intervention
FET	Fisher's Exact Test
FTT	Future Thinking Task
GAD-7	Generalised Anxiety Disorder questionnaire
NFT	Negative Future Thinking
PANSS	Positive and Negative Syndrome Scale
PFT	Positive Future Thinking
PBIQ	Personal Beliefs About Illness Questionnaire
SANS	Scale for the Assessment of Negative Symptoms
SMR	Standardised Mortality Ratio
SSI	Beck Scale for Suicide Ideation
UHR	Ultrahigh Risk

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Chapter 1

Introduction

1.1 Overview

Research into the nature of hopelessness suggests that it is characterised more by difficulties in anticipating positive events in the future than by excessive anticipation of negative events in the future. This study aimed to investigate the future-directed thinking of individuals with first episode psychosis in comparison with that of matched controls, and its relationship to both suicide risk and the negative symptoms of psychosis. This introduction will begin by defining and describing psychosis and the risks that the illness can entail, including increased risk of suicide and self-harm. The chapter goes on to consider risk factors for suicide in the general population and in individuals with first episode psychosis. Hopelessness as a risk factor for suicide is considered in detail, and the existing literature on the use of the well-established Future Thinking Task to investigate this is reviewed. Recent research on future-directed thinking in individuals with psychosis will be examined, and a case will be made for the use of the Future Thinking Task to investigate future-directed thinking, hopelessness and suicide risk in this population. The potential link between future-directed thinking and the negative symptoms of psychosis will also be considered.

1.2 Psychosis and its consequences

1.2.1 Introduction to psychosis

The term *psychosis* is used to describe a collection of psychiatric symptoms arising as a consequence either of primary psychiatric disease, such as schizophrenia, or of

secondary pathology, such as certain types of bacterial infection (Cardinal & Bullmore, 2011). Its definition has changed over time from its origin the 19th Century, in the early part of which it was synonymous with the nonspecific term "insanity" (Berrios, 1987), to more recent narrow definitions that describe psychosis as the presence of delusions or hallucinations in the absence of insight into their pathological origins. More broadly, the definition includes insight, and in some classification systems it has been expanded to include other symptoms such as disorganised speech and catatonic symptoms (American Psychiatric Association, 2000) and distortions of thinking and perception (World Health Organization, 1992).

In the Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition Revised, DSM-IV-TR; American Psychiatric Association, 2000), the term *psychotic* refers to the presence of certain symptoms, the combination and relative prominence of which define the individual psychotic disorder. These symptoms include positive symptoms such as delusions, hallucinations, disorganised speech, grossly disorganised or catatonic behaviour, and negative symptoms such as apathy, blunted emotions and social withdrawal. The nine main forms of psychotic disorder described in DSM-IV-TR are schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, shared psychotic disorder, psychotic disorder due to a general medical condition, substance-induced psychotic disorder, and psychotic disorder not otherwise specified (American Psychiatric Association, 2000). These vary in severity and aetiology, from durations of less than one month without deterioration in functioning (brief psychotic disorder) to durations of at least six months with concurrent mood disturbance (schizoaffective disorder). The most extensively studied of these is schizophrenia, and it is to schizophrenia that much of

the evidence presented in this chapter refers. Whilst it must be acknowledged that schizophrenia does not provide a perfect model of all psychotic disorders as these are diverse and vary in origin, the criteria of all psychotic disorders described in DSM-IV-TR use the symptoms of schizophrenia as a reference point. Therefore it can be argued that schizophrenia provides an adequate model of the constellation of symptoms that comprise psychosis.

The age of onset of psychotic disorder is typically in the late teens to early twenties in males, and around five years later in females (DeLisi, 1992). However, psychosis can also occur in childhood (early onset psychosis), and in adults of any age. The first experience of a psychotic episode in an individual is generally known as the *first episode*, and this term is applied to both psychosis generally and schizophrenia specifically. In the last 20 years the importance of tailored and intensive intervention in the first 2-5 years of psychosis has been emphasised in achieving good outcomes (Birchwood, Todd, & Jackson, 1998; Nordentoft, Rasmussen, Melau, Hjorthoj, & Thorup, 2014). This has led to the widespread introduction of specialised early intervention services for those in the first 2-5 years of illness. These services apply specialised clinical knowledge to the treatment of early psychosis, including assertive interventions, appropriate low doses of antipsychotic medication, family interventions, and support for substance use (International Early Psychosis Association Writing Group, 2005). In comparison with standard community mental health care such services have been shown not only to improve outcomes, such as reducing the number of days that patients are hospitalised, increasing the percentage of individuals living independently, and reducing suicide rates (Bertelsen et al., 2008;

Chen et al., 2011; Nordentoft et al., 2014) but also to be economical (Hastrup et al., 2013; Park, McCrone, & Knapp, 2014).

The lifetime prevalence of all psychotic disorders combined has been estimated at 3.0-3.5%, and is broken down by diagnosis as follows: schizophrenia = 0.9%, schizoaffective disorder = 0.3%, delusional disorder = 0.2%, and schizophreniform disorder = 0.1%. Lifetime prevalence for substance-induced psychotic disorders have been estimated at 0.4%, and for psychotic disorder due to a medical illness = 0.2% (American Psychiatric Association, 2013; Perala et al., 2007). The prevalence of psychotic disorder in the UK population in 2006 was estimated at 0.4% (Bebbington et al., 2009). Incidence has been estimated variously at around 5-20 cases per year per 100,000 population (Kirkbride et al., 2012; Kirkbride et al., 2006), and has been shown to be consistent across countries and cultures by a World Health Organisation study across ten countries (Jablensky et al., 1992). The combined direct and indirect costs of schizophrenia were estimated at around £6.7 billion for 2004-5, with direct healthcare costs accounting for around £2 billion of this total (Mangalore & Knapp, 2007): this amounts to just under 3% of total National Health Service expenditure in that period (Department of Health, 2006).

The presence of psychosis can have serious consequences for the lives of individual sufferers. Positive symptoms can be very distressing and their impact on relationships and functioning severe. For example, the experience of auditory hallucinations is distracting and often highly distressing due to the frequently critical nature of the voices heard. Negative symptoms can also impact on functioning, leaving sufferers unable to enjoy their usual activities and lacking in motivation and drive. Negative

symptoms have also been found to predict functional outcome, with more severe negative symptoms at baseline predicting worse functional outcome up to 10 years later (Hassan & Taha, 2011; Milev, Ho, Arndt, & Andreasen, 2005; Ventura, Hellemann, Thames, Koellner, & Nuechterlein, 2009; C. White et al., 2009). The social implications of psychosis can be far-reaching, and impact on areas such as work, relationships, family and education. This is made doubly problematic by the typical age of onset: as noted above psychosis tends to develop in the early twenties, a time when the individual is beginning to establish themselves and gain independence in these areas. Disruption to these key processes is likely to have serious implications for the future functioning of the individual. Moreover, symptoms such as paranoia and delusions can impact on personal relationships to such a degree that they can lead to the breakdown of the very support systems that would aid recovery, such as relationships with friends and family (Taylor, 1987) and social networks (Allison, Harrop, & Ellett, 2013; Macdonald, Hayes, & Baglioni, 2000). Indirect effects of the disease such as lack of self-confidence and fear of rejection can make it difficult to repair these relationships (Killaspy et al., 2014).

1.2.2 Physical health risks of psychosis

Psychosis is also associated with serious risks to physical health. Rates of respiratory, cardiovascular and metabolic disease are all elevated in individuals with schizophrenia (Glassman, 2005; Henderson, 2005; Robson & Gray, 2007), as are rates of HIV and hepatitis C (Cournos, McKinnon, & Sullivan, 2005; Leucht, Burkard, Henderson, Maj, & Sartorius, 2007). It has been suggested that comorbid psychiatric or medical conditions are present in at least 50% of people with schizophrenia (Green, Canuso, Brenner, & Wojcik, 2003). Consequently, the mortality rate in individuals

with psychosis is as much as two-and-a-half times that in the general population due to an increased death rate from both natural and unnatural causes (Brown, 1997; Saha, Chant, & McGrath, 2007). In 1997, a meta-analysis of 18 different studies including data from the previous four decades investigated the comparative risk of death from a variety of causes in individuals with schizophrenia and the general population (Brown, 1997). Elevated standardized mortality rates[1] (SMRs) were demonstrated for a variety of causes including cardiovascular disease, digestive disease and respiratory disease. For all causes combined, the aggregate SMR was 1.5, indicating that people with schizophrenia were one-and-a-half times more likely to die from any of the listed causes than individuals in the general population. The highest SMR, 8.4, was for suicide, indicating that suicide was the single biggest cause of death in schizophrenia. This result replicated that of a meta-analysis focusing solely on suicide as a cause of death in mental illness, which reported an SMR of 8.5 (Harris & Barraclough, 1997).

These results were further supported by a 2007 meta-analysis of 37 different studies investigating cause of death in schizophrenia over the previous three decades (Saha et al., 2007). Elevated SMRs in schizophrenia compared with the general population were demonstrated across a range of natural and unnatural causes. The overall aggregate SMR was 2.5, an increase on the figure reported in the Brown study, and the aggregate SMR for suicide was 12.9, three times that for any other single cause. The results of this study highlight a trend towards increased mortality rates for all

[1] Standardized mortality rate is the ratio of observed deaths in a population to the number of deaths that would be expected in a reference population. For example, an SMR of 2 would mean that risk of death was doubled compared to members of a reference population.

causes and for suicide in particular, in comparison with the studies by Brown and Harris and Barraclough published just a decade earlier. This increase was found to be relative to the general population, in which the suicide rate had fallen, and did not reflect an increase in case fatality rates in schizophrenia (Saha et al., 2007). Nonetheless, this evidence suggests that suicide is a significant concern in the psychotic disorders, and it is with this that the current study is chiefly concerned.

1.3 Suicide and self-harm in psychosis

1.3.1 Definition of suicide and related acts

Suicidal and self-harming behaviours have many forms and names that range in severity, including suicide completion (when a suicide attempt results in death), suicide attempt, non-fatal self-harm with and without suicidal intent, suicide planning, and suicidal ideation. The intent to die behind self-harming behaviours is challenging to determine, and therefore the boundaries between labels such as *suicide attempt* and *self-harm without suicidal intent* can become blurred. The Beck Suicide Intent Scale was devised as a measure of suicidal intent to be administered after an attempt (Beck, Schuyler, & Herman, 1974), but during its development it was acknowledged that it is susceptible to threats to validity such as inaccurate or inadequate recall, uncooperativeness, and dramatization (Beck, Schuyler, et al., 1974). Further factors undermining the accurate measurement of suicidal intent are the perceived social desirability of certain responses, impulsivity associated with the attempt, ambivalence to suicide and fluctuating intent, and secondary gain of feigning intent, all of which may influence individuals' responses to such measures (Freedenthal, 2007). Evidently the determination of intent behind self-harming behaviours is challenging, and in

many cases this has led researchers to avoid the issue altogether, choosing instead to treat all forms of self-harm as one entity unless specifically able to identify those with high intent (MacLeod, 2013). In the account that follows I will follow the convention of referring to all self-harming behaviours that do not result in death collectively as *deliberate self-harm* (DSH).

1.3.2 Prevalence of suicide and DSH in psychosis

As discussed above, risk of suicide is one of the most significant clinical concerns in the management of psychosis. The occurrence of suicide in schizophrenia was observed as early as 1919, in Emil Kraepelin's classic work *Dementia Praecox and Paraphrenia* (Kraepelin, 1919). Annual rates of death by suicide in individuals with schizophrenia have been estimated at between 0.4 and 0.8% (Alphs et al., 2004), whilst rates in the general population of the UK are approximately 0.02% per year (Office for National Statistics, 2012). Early estimates of lifetime risk of death by suicide in the psychoses were around 10% (Miles, 1977), though recent estimates are more conservative, at 4-6% (Hor & Taylor, 2010; Inskip, Harris, & Barraclough, 1998; Palmer, Pankratz, & Bostwick, 2005). Nevertheless, this remains a significant elevation over lifetime risk in the general population, which has been estimated at 0.5% (Bostwick & Pankratz, 2000), and as noted above, is reportedly as much as 12.9 times higher in schizophrenia than in the general population (Challis, Nielssen, Harris, & Large, 2013). Moreover, in those who have already made a suicide attempt, psychosis is associated with higher numbers of repeat attempts when compared with individuals without psychosis (Warman, Forman, Henriques, Brown, & Beck, 2004). Prevalence of DSH is also high in individuals experiencing psychosis, with some studies reporting that up to half of people living with psychosis engage in an act of

DSH at some point in their lives (Morgan et al., 2012; Mork et al., 2012). By contrast, the highest estimate of the lifetime prevalence of DSH in the general population is just under 6% (Welch, 2001), with most estimates ranging from 1-4% (MacLeod, 2013).

Risk of suicide has been shown to be highest in the early stages of psychosis, soon after diagnosis (Carlborg, Winnerback, Jonsson, Jokinen, & Nordstrom, 2010; Palmer et al., 2005; Pompili et al., 2011). Dutta et al. (2010) performed a long-term follow-up study of 2,723 individuals with first episode psychosis who presented to secondary care services across the UK. In the follow-up period of up to 20 years, 15% of the total suicides occurred within the first year. SMR was highest in the first year (11.1), and dropped incrementally with time. Studies have shown that risk is especially high in the post-psychotic phase of recovery, soon after discharge from hospital (Hunt et al., 2009; Rossau & Mortensen, 1997). Reasons for this are hypothesised to be connected with the realisation of loss of role and function, the frustrations associated with the recovery process, and difficulties with everyday activities (Power & McGowan, 2011). However, suicide is associated with all stages of the early illness, including acute psychosis–around 11% of suicides have been found to be directly associated with hallucinations during the active phase of psychosis (Nordentoft et al., 2002)–and the early stages of relapse (Power & McGowan, 2011).

Few studies have investigated the change in risk for DSH over the course of psychotic illness, as the majority of research has focused on the risk factors for completed, rather than attempted suicide. However, in one study Verdoux et al. (2001) report a similar pattern to that observed in suicide completion, showing that of the acts of suicide and DSH reported over a two-year follow-up period, 80% came in the first

year and only 20% in the second. In another study of 94 individuals with early psychosis (Fedyszyn, Robinson, Matyas, Harris, & Paxton, 2010) suicide risk, based on suicidal ideation and attempts, was assessed over the course of 2 years using the suicidality item of the Brief Psychiatric Rating Scale. Suicide risk was found to be highest in the first months of treatment, declining in the six months thereafter.

Risk of DSH is not only elevated in the early stages after first contact with services: high rates have also been identified retrospectively in the period before first contact. Rates of DSH between 7% and 28% have been reported in adults (J. Addington, Williams, Young, & Addington, 2004; Andriopoulos, Ellul, Skokou, & Beratis, 2011; Bakst, Rabinowitz, & Bromet, 2010; Upthegrove et al., 2010) and up to 32% in adolescents (Falcone et al., 2010) prior to first admission or contact with services. A meta-analysis of studies of acts of DSH in early psychosis (Challis et al., 2013) found that almost 20% of people presenting with first episode psychosis reported a history of self-harm, and nearly 10% reported having self-harmed between the onset of symptoms and first presentation to services. This figure supports an earlier finding by Harvey et al. (2008) that 11% of individuals presenting to services for the first time reported self-harming during the period of untreated psychosis. It is also important to remember that, whilst it is challenging to determine how many people with psychotic illness complete an act of suicide before presenting to services, it is likely that this figure is not negligible. Suicide risk is high even in those identified as at risk for future psychosis: in one study (Hutton, Bowe, Parker, & Ford, 2011) suicide risk was investigated in a group of individuals in a treatment programme for those at ultrahigh risk (UHR) of psychosis. Of those included in the study, 59% reported suicidal ideation and 21% engaged in acts of DSH. Previous work reported even greater risk,

with 90% of a UHR sample reporting suicidal ideation during a 6 month period, and 25% attempting suicide at least once (Adlard, 1997, as cited in Hutton et al., 2011). These studies highlight the high risk of suicide and DSH in the early stages of psychotic disorders, and the importance of understanding the factors associated with these for clinical practice in early intervention settings. In order gain a better understanding of suicide risk in psychosis, it is important first to consider risk for suicide in the general population.

1.3.3 Risk factors for suicide

Risk factors for suicide can be split into *proximal* and *distal* factors (Hawton & van Heeringen, 2009). Distal factors are described as traits of the individual such as gender, genetics, personality, early traumatic life events and neurobiology. They are usually historical factors, and tend not to be amenable to change or outside influence. Proximal factors relate to current state, such as psychiatric or physical disorder, recent crises, and access to means to complete suicide. They are usually current or recent, and can be somewhat amenable to change or outside influence, though not always. The most common risk factor for suicide is widely acknowledged to be a history of DSH (Cavanagh, Carson, Sharpe, & Lawrie, 2003). Studies have shown that 54% of people who attempt suicide have a history of DSH (Kerkhof, 2000), and approximately 1% then go on to complete suicide within one year (Sakinofsky, 2000). In a 2002 meta-analysis of repeat DSH and completed suicide following an act of DSH, repetition rates were estimated at 15-16% in the first year, and one-year median completion rate following DSH was 1.8% (Owens, Horrocks, & House, 2002). This figure is somewhat higher than reported by Sakinofsky, although the quality of the studies analysed by Owens et al. was reportedly inconsistent.

Numerous other factors have been associated with suicide. Psychiatric disorder, especially depression, has been found to be present in up to 90% of those who complete suicide (Cavanagh et al., 2003), and it has been argued that this figure, though high, is an underestimate (Ernst et al., 2004; Flavio et al., 2013; Zhang & Li, 2013). Other factors associated with suicide are physical ill-health, male gender (though the opposite is true in DSH), older age, living alone, recent major life events, childhood maltreatment, alcohol misuse, and increased hopelessness (Hawton & van Heeringen, 2009; Nock et al., 2008). Risk factors for suicide in psychosis are related to those in the general population in one of three ways: (1) the same risk factors apply as in the general population, (2) the factors are the same, but risk is conferred in the opposite direction to that observed in the general population, or (3) risk factors are specific to individuals with psychosis.

Risk factors that are the same in psychosis and the general population are much the same in both the early stages of psychosis and more established cases. They are male gender, living alone, increased severity of depressive symptoms, higher impulsivity and aggression, having a history of previous suicide attempts, substance misuse, and increased hopelessness (Balhara & Verma, 2012; Caldwell & Gottesman, 1990; Drake & Cotton, 1986; Hawton, Sutton, Haw, Sinclair, & Deeks, 2005; Meltzer, 2002; Reid, 1998). By contrast, some factors that increase risk for suicide in the general population confer risk in the opposite direction to that expected in individuals with psychosis. For example, older age increases risk in the general population whereas younger age increases risk in psychosis (Bakst et al., 2010; Ran, Chan, Xiang, & Wu, 2003). Similarly, higher IQ and premorbid functioning is protective in the general

population, but confers risk in psychosis (Caldwell & Gottesman, 1990; Carlborg et al., 2010). Yet other risk factors for suicide in psychosis are unique to the disorder. These include increased thought disorder (Bakst et al., 2010), increased insight into illness (Barrett, Sundet, Faerden, Agartz, et al., 2010; Lopez-Morinigo, Ramos-Rios, David, & Dutta, 2012; Robinson et al., 2009), longer duration of untreated illness (Altamura, Bassetti, Bignotti, Pioli, & Mundo, 2003), and negative beliefs about psychosis (Barrett, Sundet, Faerden, Agartz, et al., 2010). Research conducted into suicide risk in the very early stages of psychosis prior to first presentation to services has found that, in addition to the above-mentioned risk factors, younger age at onset and longer duration of untreated psychosis are associated with increased risk of DSH and suicidal ideation before first presentation (Altamura et al., 2003; Barrett, Sundet, Faerden, Nesvag, et al., 2010; Clarke et al., 2006; Harvey et al., 2008).

1.4 Hopelessness as a risk factor for suicide

1.4.1 Overview of hopelessness

Hopelessness is a risk factor shared by almost all individuals who attempt or complete suicide, regardless of psychiatric diagnosis (if present). It has been described as "a system of cognitive schemas whose common denomination is negative expectations about the future" (Beck, Weissman, Lester, & Trexler, 1974, p. 864). This concept was later captured within Aaron Beck's negative cognitive triad model of depression (Beck, Rush, Shaw, & Emery, 1979), in which depression is described as a negative cognitive style applied to each of three areas: the self, the world, and the future. In this model, hopelessness is equivalent to having negative views of the future (Hanna et al., 2011). Measurement of hopelessness is via clinician rating or self-report, and

the most commonly used and best-researched measure is the self-report Beck Hopelessness Scale (BHS; Beck, Weissman, et al., 1974; Glanz, Haas, & Sweeney, 1995). This is a 20-item measure which requires participants to respond true or false to positive and negative statements such as "I look forward to the future with hope and optimism" and "My future seems dark to me". The BHS has good reliability and validity (Beck, Weissman, et al., 1974) and has been shown to correlate well with clinical ratings of hopelessness (Beck, Brown, & Steer, 1989).

Many investigators have shown that self- and clinician-rated hopelessness are strong predictors of later suicide (Beck, Brown, Berchick, Stewart, & Steer, 1990; Beck et al., 1989). Self-reported hopelessness has been shown to predict suicidal ideation, DSH and suicide completion in numerous studies (Beck, Steer, Kovacs, & Garrison, 1985; McMillan, Gilbody, Beresford, & Neilly, 2007; Petrie, Chamberlain, & Clarke, 1988; Salter & Platt, 1990; Zhang & Li, 2013). Furthermore, self-reported hopelessness has been shown to mediate the relationship between depression and suicide: a stronger relationship is found between measures of hopelessness and suicide behaviour than between measures of depression and suicide behaviour (Beck, Kovacs, & Weissman, 1975; Beck et al., 1985; Minkoff, Bergman, Beck, & Beck, 1973). This indicates that of the three elements of the negative cognitive triad model of depression, it is negative views in relation to the future that confer the greatest risk for suicide.

1.4.2 Hopelessness and risk for suicide in psychosis

Where measured, hopelessness is consistently linked with risk for suicide in individuals with psychosis, and is associated with DSH regardless of the reported

motivation of the act, which can be either depressive or psychotic (Acosta et al., 2006). Hopelessness has also been found to mediate the relationship between suicide and depression in psychosis (Drake & Cotton, 1986), replicating the effect seen in the general population and showing that in psychosis too, a stronger relationship is found between measures of hopelessness and suicide behaviour than between measures of depression and suicide behaviour.

The association between hopelessness and suicide risk in psychosis has been borne out by several meta-analytic and systematic reviews (Balhara & Verma, 2012; Hawton et al., 2005; Large, Smith, Sharma, Nielssen, & Singh, 2011), confirming that this is a consistent effect in psychosis as well as other populations. However, it is of note that these meta-analyses have predominantly included studies of individuals with chronic psychosis. Given that suicide risk is elevated in the early part of the illness, we might ask whether this elevation is associated with hopelessness, or whether it is a result of another aspect of early psychosis, for example the experience of being diagnosed. One qualitative study by Pitt and colleagues (2009) identified both positive and negative aspects to the impact of diagnosis, with "prognosis of doom" and "social stigma" as key negative subthemes in the final model, whilst another study of reactions to a diagnosis to bipolar disorder (Proudfoot et al., 2009) identified feelings that bad times are inevitable in the future. Three studies that may begin to clarify the relationship between hopelessness and suicide and DSH are notable by the fact that they are prospective studies specifically in early psychosis. All three use long-term follow-up of a year or more rather than cross-sectional designs.

The OPUS trial (Nordentoft et al., 2002) is a large 5-year follow-up and treatment trial of 578 inpatients and outpatients in their first episode of a schizophrenia spectrum disorder. During the first year of treatment 11% of the 386 participants followed up attempted suicide (of which 7% were successful) and a significant association was revealed between hopelessness and suicide attempt (Madsen & Nordentoft, 2012). This association disappeared when the occurrence of previous DSH was controlled for, suggesting that in those without previous DSH hopelessness was not associated with suicide attempt. However, it should be noted that hopelessness was measured using just one item from the Schedule for Clinical Assessment in Neuropsychiatry and therefore may not convey the entire picture of its association with DSH. In a 7-year follow-up study of 282 first-episode outpatients (Robinson et al., 2010) 22% attempted suicide and 4% died as a result. Hopelessness at baseline was a significant predictor of DSH in the follow-up period. Moreover, the majority of DSH occurred in the first 5 years of the follow-up period (94%), and the mean time to completion of suicide was 4 years. These findings are consistent with the presence of an association between hopelessness and DSH in the early years of psychotic illness. As in the OPUS trial, hopelessness was measured using a subsection of a clinical interview. Finally, a prospective study of 414 individuals with first episode psychosis showed that hopelessness scores at each measured time point (baseline, 6 months, 24 months, 48 months and 120 months) predicted suicide attempts at the next time point, over and above the contribution of previous DSH to the model (Klonsky, Kotov, Bakst, Rabinowitz, & Bromet, 2012). These results contradict those of the OPUS study described above, possibly because, unusually for a long-term follow-up study, these authors used the full BHS to measure hopelessness, giving a global picture of self-reported hopelessness in the sample.

The aforementioned studies show that hopelessness is a key predictor of later suicide in first episode psychosis, and is thus a potential target for the clinical management of suicide risk in this vulnerable population. Hopelessness is one of very few factors that is not only consistently associated with increased risk for suicide, but is also potentially amenable to change. Many other factors strongly associated with increased risk, such as gender, life events, and history of DSH, cannot be modified as they are distal or historical risk factors. Hopelessness, as a proximal risk factor, offers a rare opportunity to affect the risk of suicide through cognitively-oriented treatments such as "LifeSPAN therapy" (Power et al., 2003), and integrated treatments including assertive community treatment and family interventions (Nordentoft et al., 2002) which have been shown to reduce hopelessness in suicidal patients with early psychosis. Conversely, evidence is contradictory for treatments aimed at reducing suicidality as a whole in individuals with psychosis (Donker et al., 2013) and in all individuals (Hawton et al., 1999). However, whilst its association with suicide is clear, a key question that remains is the clinical utility of hopelessness as a predictor of suicide in practice. The following section considers the difficulties inherent in this strategy.

1.4.3 Challenges of global hopelessness ratings

Like all factors that have been found to be associated with increased risk of suicide, hopelessness cannot predict which individuals will attempt or complete suicide, it can only identify groups that are at increased risk. Studies attempting to predict future suicide tend to be able to identify cases well (they are *sensitive*) but they tend also to identify many false positives (they lack *specificity*). That is to say, for every

completed suicide correctly predicted by a given model, many more are identified incorrectly as being at risk who would never go on to attempt suicide (MacLeod, 2013). For example, the BHS has high sensitivity and low specificity: although over 80% of people who will go on to complete suicide may be identified by a minimum BHS score of 9, these will comprise only 42% of the whole population that this cut-off identifies as being at risk (McMillan et al., 2007). This is problematic for treatment, which may be costly and potentially unethical to administer to those who would not go on to attempt or complete suicide. There is a need to increase specificity and identify which elements of hopelessness confer particular risk for suicide.

Many attempts have been made to deconstruct the concept of hopelessness into hypothesised individual components for this purpose. To date, the principal method for identifying individual components of hopelessness has been to apply factor analysis to data collected using the BHS. In their original description of the scale, Beck and colleagues described that the BHS had a three factor structure: an affective component, labelled "Feelings About The Future", a motivational component, labelled "Loss Of Motivation", and a cognitive component, labelled "Future Expectations" (Beck, Weissman, et al., 1974). Since this time, investigators have continued to use factor analysis to examine dimensionality in the BHS. Structures consisting of one (Aish, Wasserman, & Renberg, 2001; Hanna et al., 2011), two (Nissim et al., 2010; Pompili, Tatarelli, Rogers, & Lester, 2007; Tanaka, Sakamoto, Ono, Fujihara, & Kitamura, 1998), and three (Dyce, 1996; Hill, Gallagher, Thompson, & Ishida, 1988; Steer, Kumar, & Beck, 1993) factors have all been described, highlighting the complexity and ambiguity surrounding self-reported hopelessness. In addition, even in three-factor solutions like that of Steer et al. the

factors identified do not replicate those in the original 1974 analysis. Instead factors were identified that they labelled “Rejection Of The Possibility Of A Hopeful Future”, “Acceptance Of The Inevitability Of A Hopeless Future”, and “Resignation To The Futility Of Changing The Future” (Steer et al., 1993, p. 559). Thus it is clear that self-reported hopelessness, even as measured by a well-researched and well-validated tool, is a difficult concept to describe and define.

In an alternative, theoretically-driven (rather than data-driven) attempt to deconstruct hopelessness, investigators have argued that it can be conceptualised in two distinct ways: an inability to imagine good things in the future and an increased tendency to imagine bad things in the future (Abramson, Alloy, & Metalsky, 1989, as cited in MacLeod, Rose, & Williams, 1993). Previously it has not been clear whether these two possibilities are functionally distinct (MacLeod et al., 1993), but work distinguishing these two alternatives, described below, has provided valuable information in the search for the specific components of hopelessness that are associated with suicide.

1.4.4 The Future Thinking Task

The Future Thinking Task (FTT; MacLeod et al., 1993) was developed especially for the purpose of distinguishing inability to imagine good things in the future from increased tendency to imagine bad things in the future, as well as to separate thoughts about near through to distant time periods in the future. The FTT is a modified verbal fluency task in which participants are asked to name events in the next week, year and five to ten years that they are looking forward to and not looking forward to (positive and negative valence conditions). On each trial the participant is asked about a

different time period and valence, thus there are six trials, lasting one minute each. The number of events generated in the positive condition is used as a measure of *positive future thinking* (PFT), and the number of events generated in the negative condition is used as a measure of *negative future thinking* (NFT).

Hopelessness has been shown to correlate negatively with PFT, meaning that as positive future thinking increases, hopelessness decreases. However, no association is shown between hopelessness and NFT (Hunter & O'Connor, 2003; MacLeod, Pankhania, Lee, & Mitchell, 1997; O'Connor, O'Connor, O'Connor, Smallwood, & Miles, 2004). In another study of individuals hospitalised for a recent episode of DSH (MacLeod et al., 2005) a stronger correlation was demonstrated between hopelessness and decreased PFT than between hopelessness and increased NFT. These studies provide evidence that a difficulty in imagining good things in the future is functionally distinct from the tendency to imagine bad things in the future, and moreover, may be a more specific measure of hopelessness than the BHS.

The FTT, and specifically PFT, has been shown to have construct validity as a measure of hopelessness though the demonstration of its association with suicidality. In several studies, patients hospitalised for recent suicide attempts have been compared with hospital and community controls on measures of hopelessness and using the FTT. The earliest study to use the FTT (MacLeod et al., 1993) studied patients admitted with acute self-poisoning, and found a significant reduction in PFT in the DSH group compared with hospital and community control groups. This result has since been replicated in individuals admitted as a result of any act of DSH, (Hunter & O'Connor, 2003), in persons with personality disorder (MacLeod et al.,

1998), and in older adults (Conaghan & Davidson, 2002). Importantly, no increase in negative future thinking was observed in the DSH group in any of these studies. This pattern has been shown to persist when depression is controlled for (MacLeod, Pankhania, et al., 1997; MacLeod et al., 2005), and it is not solely attributable to anhedonic responses (reduced pleasure ratings) to potential positive things in the future (MacLeod & Salaminiou, 2001), which are common in depression. Not only has PFT been associated with hopelessness in individuals with who have recently attempted suicide, it has also been shown to predict risk for suicide. O'Connor, Fraser, Whyte, Machale, and Masterton (2008) found that in people with repeated acts of DSH reduced PFT was not only associated with levels of suicidal ideation 2.5 months after discharge, but was also superior to global hopelessness ratings in predicting this.

In summary, this evidence suggests that reduced PFT is a component of global hopelessness that is crucial in understanding and potentially predicting risk for suicide. Reduced PFT is associated with higher hopelessness and increased risk for suicide, and is more closely related to suicidal ideation than global self-reported hopelessness, suggesting that it may demonstrate greater specificity in predicting future DSH than the BHS. As well as providing a measure of hopelessness that is arguably more specific than the BHS, a further advantage of the FTT is that it is an objective rather than self-report measure and is therefore less susceptible to the potential influence of social desirability (Ivanoff & Jang, 1991; Linehan & Nielsen, 1981). Moreover, it is quickly administered and easily understood by participants (MacLeod et al., 1993). The FTT may therefore be a potentially useful and clinically practical tool in investigating suicide risk in psychosis. The following section

considers the extent to which future-directed thinking has been studied in psychosis to date.

1.4.5 Future-directed thinking in psychosis

Very few studies have investigated the ability of individuals with psychosis to think about the future, and no published studies to date have employed the FTT in a first episode psychosis sample. However, five studies may be relevant to the concept of future-directed thinking. First, Eack and Keshavan (2008) studied ability to anticipate the consequences of one's actions in a sample of 58 individuals with schizophrenia. The participants showed a reduced level of foresight, which predicted functional disability at 1-year follow-up. However, this study did not use a control group, so the extent to which foresight was impaired in comparison with the general population was not clear.

Four further studies have explored the ability of individuals with schizophrenia to generate and elaborate future events in response to given cues. In one study (D'Argembeau, Raffard, & Van der Linden, 2008), participants were asked to generate detail about future events that might reasonably happen to them, in response to cues about general everyday situations or feelings. One response per cue was required and respondents were given one minute for each trial. Responses were coded for specificity, that is, the extent to which they were associated with a particular time (less than a day) and place. The results showed that patients were impaired in generating specific events in comparison with controls. Another study (Raffard, D'Argembeau, Bayard, Boulenger, & Van der Linden, 2010) required that participants generate scenes in as much detail as possible, again in response to cues, and also to

generate three events that might plausibly happen to them in the future. Each description was rated on a number of dimensions, including content, spatial coherence and quality. This study showed that patients with schizophrenia produced fewer details about their scenes than controls, and their descriptions were judged to evoke less clear pictures of the experiences in the scorer's mind's eye. The same group conducted a closely-related study in 2013 (Raffard, Esposito, Boulenger, & Van der Linden), but this time analysed the ability of the participants to generate specific details about positive and negative imagined future events separately. The results of their earlier study were replicated: imagined future events of both valences were less specific in the schizophrenia group than in the control group. Finally, in the study most closely related to the FTT (de Oliveira, Cuervo-Lombard, Salame, & Danion, 2009) participants were asked to describe three plans they had for each of four time periods: the next week, month, 1 year and 5-10 years. For each plan they were asked to imagine a specific future event connected with the plan, and these were scored for specificity. Patients showed decreased ability to generate future plans, and future events connected with their plans were rated as less specific.

The studies described above suggest that future-directed thinking in psychosis is impaired, both in the number of events that can be generated and in the detail associated with these events. However, several limitations are evident. First, the protocols used in the three studies varied, and therefore a consistent and well-established measure of future-directed thinking such as the FTT would help to unify the research in this area. Second, cues were employed in two of the protocols, meaning that the future events generated by respondents were not spontaneously generated. Third, only one of the protocols employed a time limit, and this was used

to measure the amount of detail that could be generated about a single response, rather than to measure the number of responses that could be generated in total, as in the FTT. Therefore the absolute capacity of respondents for generating future events was not measured. Fourth, illness duration in three of the studies was long: means of 14, 11 and 9 years were reported in the D'Argembeau et al., Raffard et al. 2010 and Raffard et al. 2013 studies respectively (illness duration was not reported in the de Oliviera study). Finally, only the Raffard et al. 2013 study drew a distinction between ability to generate and describe positive scenarios and negative scenarios, and no study linked capacity to think about the future with either hopelessness or suicide.

Notwithstanding the above limitations, these studies demonstrated that individuals with psychosis have impairments in thinking about the future that are relevant to the current discussion. On the basis of this evidence it may be predicted that individuals with first episode psychosis would have a reduced capacity for future-directed thinking, and as described in Section 1.4.4, reduced PFT in particular may be connected with hopelessness and the increased risk of suicide observed in this population. This prediction is partially supported by a study in which factor analysis was performed on BHS scores collected from individuals with schizophrenia (Kao, Liu, & Lu, 2012). After covarying for self-reported depression, individuals with and without suicidal ideation differed on a factor derived from the BHS described as "Negative Expectation Of The Future". This factor included items such as "the future seems vague and uncertain to me", "my future seems dark to me", and "I have great faith in the future" (scoring reversed), and it can be likened to reduced PFT due to the tendency in these items to deny optimism for the future. The groups did not differ on a second factor, "Loss Of Motivation For The Future". This study was carried out

with individuals who had suffered from schizophrenia for an average of 15 years, highlighting the potential for extending this research to individuals in the early stages of psychosis.

In summary, the current study proposes that reduced PFT is a component of global hopelessness that is reliably associated with an elevated risk of suicide in general and increased suicidal ideation in particular, and has the potential to be a practical addition to the assessment of suicide risk in first episode psychosis. Previous studies of individuals with psychosis have highlighted deficits in the specificity of future-directed thinking but have not measured absolute capacity to generate future events or linked future-directed thinking to hopelessness and suicide. The current study was planned to address these gaps in the literature through the investigation of future-directed thinking in first episode psychosis using a well-established task, the FTT. The aims and hypotheses of this study are given at the end of this chapter. To date, no published study has employed the FTT to measure future-directed thinking in people with psychosis.

1.5 Future-directed thinking and negative symptoms of psychosis

As well as being linked with suicide risk, hopelessness has also been shown to associate with the negative symptoms of psychosis. Negative symptoms describe functions that are diminished or lacking in those with psychosis but are usually present in the general population. Typical examples are reduced interest in previously enjoyed activities (anhedonia), reduced voluntary movement (avolition), and reduced energy (anergia). As described above, negative symptoms are associated with

significant functional impairment in psychosis (Breier, Schreiber, Dyer, & Pickar, 1991) and reduced functional outcome at up to 10-year follow-up (Hassan & Taha, 2011; Milev et al., 2005; Ventura et al., 2009; C. White et al., 2009). Furthermore, negative symptoms are often resistant to treatment (Buchanan, 2007; Buckley & Evans, 2006).

Previous work has shown that negative symptoms in psychotic disorders correlate with self-reported hopelessness. In a study by Aguilar et al. (1997) 96 individuals with non-affective psychotic disorders including schizophrenia were assessed using the BHS and the Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1981). BHS score was shown to be positively correlated with SANS score, indicating that as hopelessness increased, severity of negative symptoms also increased. Moreover, baseline hopelessness, but not baseline negative symptoms, predicted global functioning at 12-month follow-up, indicating that hopelessness may be key to the reduced functioning observed in those with more severe negative symptoms.

Four more recent studies are of relevance to this argument. First, a study by Lysaker, Davis, and Hunter (2004) of 52 individuals with schizophrenia found no association between two domains of the BHS and negative symptoms measured by the Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987). However, in a second study by the same group (Lysaker, Salyers, Tsai, Spurrier, & Davis, 2008) a correlation was found, and negative symptoms contributed significantly to a model predicting hopelessness as measured by the BHS. The discrepancy in these results may be due to the larger sample in the later study ($N = 143$). Third, a study of 100 individuals with schizophrenia by R. G. White, McCleery, Gumley, and Mulholland

(2007) compared groups with and without hopelessness as determined by a cut-off score of 9. They found that the group with hopelessness had significantly higher levels of negative symptoms than the group without hopelessness, though their between-groups approach is somewhat in contrast with the other studies of this relationship. Finally, recent work by Kao et al. (2012) also supports the link between hopelessness and negative symptoms. In a study of 102 outpatients with chronic schizophrenia, factors derived from the BHS were shown to correlate with negative symptoms as measured by the PANSS. Positive symptoms showed no relationship with either factor of the BHS. On balance, the literature supports the hypothesis that self-reported hopelessness is associated with severity of negative psychotic symptoms. However, it should be noted that of all the studies described here only the one by Aguilar et al. recruited individuals in their first episode of psychosis. Participants in the other studies described had mean illness durations of 13 (R. G. White et al., 2007), 16 (Kao et al., 2012) and 22 (Lysaker et al., 2004; Lysaker et al., 2008) years (the latter figure is approximate, and is based on the figures reported for age at test minus age at first admission as specific illness duration was not reported). This highlights a need for more research into the link between hopelessness and negative symptoms in the early stages of psychotic illness.

Taking the evidence described above together with the association between hopelessness and reduced PFT discussed previously, we can predict that reduced PFT may be related to severity of negative symptoms. This hypothesis also has a certain face validity, as one might expect decreased energy, activity and enjoyment to follow naturally if positive events, during or in pursuit of which these attributes might be desirable, cannot be seen in the future. Empirical support for this comes from a recent

study of individuals with schizophrenia by Raffard et al. (2013), which linked apathy, a negative symptom, with reduced ability to imagine pleasant future events. Participants were asked to generate and elaborate one specific event in response to each of a number of picture cues. The events that patients generated were rated as less specific than those of controls, and for positive events this was associated with increased apathy as measured by the Lille Apathy Rating Scale and the "apathetic / social withdrawal" item from the PANSS. Notably, specificity for imagined negative events was not associated with apathy. Further support comes from a study by Ferguson, Conway, Endersby, and MacLeod (2009), who demonstrated a concurrent improvement in both negative symptoms and positive future thinking following an intervention to increase subjective well-being.

Previous studies of individuals with psychosis have shown that there is an association between self-reported hopelessness and negative symptoms, and there is evidence to suggest that future-directed thinking, especially PFT, may also be linked to negative symptoms. Further investigation of this issue may point to practical options for intervention in this hard-to-treat aspect of psychotic illness. The current study was designed to investigate these relationships using the FTT together with an assessment of negative symptoms. The associated aims and hypotheses are given below.

1.6 Thesis aims and hypotheses

This study aimed to investigate future-directed thinking in a novel population at high risk for suicide–individuals with first episode psychosis–and compare this with future-directed thinking in a matched control group. At the same time, this study planned to

investigate the association of future-directed thinking with hopelessness, suicide risk, and severity of negative symptoms of psychosis. There were five specific aims:

Aim 1: To replicate previous work by demonstrating a relationship between self-reported hopelessness and reduced positive future thinking across both groups;

Aim 2: To investigate group differences in future-directed thinking between individuals with first episode psychosis and matched community controls;

Aim 3: To characterise the content of future-oriented cognitions in first episode psychosis in comparison with those of community controls;

Aim 4: To investigate the relationship between future-directed thinking and suicidal ideation in people with first episode psychosis;

Aim 5: To investigate whether specific aspects of future-directed thinking were associated with negative symptoms in individuals with first episode psychosis.

The study examined future-directed thinking in a new population and therefore predictions about the direction of expected effects were necessarily tentative. However, based on the findings of previous work described above, there were four hypotheses:

Hypothesis 1: Self-reported hopelessness would show a significant relationship with decreased PFT but not increased NFT across groups;

Hypothesis 2: Individuals with first episode psychosis would show reduced PFT in comparison with a matched control group but would show no increase in NFT;

Hypothesis 3: Decreased PFT but not increased NFT in the first episode psychosis group would be associated with increased suicidal ideation;

Hypothesis 4: Decreased PFT in the psychosis group would be associated with increased negative symptoms.

The investigation of group differences in the content of FTT responses was an exploratory analysis, therefore there were no hypotheses about potential findings at this stage.

Chapter 2:

Method

2.1 Ethical approval

Ethical approval for this study was gained from the Camberwell St Giles Research Ethics Committee (reference number 13/LO/0876) and from the Royal Holloway, University of London Psychology Departmental Ethics Committee. Permission for recruitment was given by the Research and Development (R&D) departments of Barnet, Enfield and Haringey Mental Health NHS Trust, Cambridgeshire and Peterborough NHS Foundation Trust, South West London and St George's Mental Health NHS Trust, and West London Mental Health NHS Trust. Letters of ethical and R&D approval are given in Appendices 1 and 2, respectively.

2.2 Design

Participants completed tasks measuring verbal fluency and future-directed thinking, and self-report and clinician-administered questionnaires assessing anxiety, depression and hopelessness (both groups) and suicidal ideation and negative symptoms of psychosis (patients only). Two statistical designs were employed. First, individuals with a first episode of psychosis and controls were compared on positive and negative future-directed thinking for a variety of time periods using a mixed-model design. Second, a cohort design was used to assess the relationship of future-directed thinking to suicidal ideation and negative symptoms of psychosis in the patient group alone.

2.3 Power calculation

No previous data were available on the effect size of group differences in future thinking between individuals with psychosis and controls. However, calculations based on research into other clinical populations, such as individuals with bulimia (Godley, Tchanturia, MacLeod, & Schmidt, 2001) and depression (MacLeod, Pankhania, et al., 1997), suggested that the effect size in question was large (Cohen, 1988). To achieve 80% power to detect a large effect at an alpha level of 5%, a sample size of 26 per group was necessary for the between-groups part of the study.

There were no previous data available to guide predictions about the size of correlations between positive future thinking and negative symptoms or suicidal ideation. However, studies of the correlation between self-reported hopelessness and suicidal ideation have shown a large effect size (Kao et al., 2012; O'Connor et al., 2008). To achieve 80% power to detect a large correlation at an alpha level of 5%, a sample size of 29 within the psychosis group was needed.

2.4 Participants and recruitment

Two groups of participants were recruited into the study: individuals within 12 months of their first episode of psychosis and matched controls with no history of psychosis. Psychosis was defined by the presence of positive symptoms such as delusions, hallucinations, thought disorder as indicated by disorganized speech, and grossly disorganized or catatonic behaviour, as outlined in DSM-IV-TR (American Psychiatric Association, 2000; McGorry, Edwards, Mihalopoulos, Harrigan, & Jackson, 1996; World Health Organization, 1992). Symptoms were not required to be

present at the time of testing, but a decision must have been made by the treating team (including a psychiatrist) that clinically significant symptoms of psychosis had been present in the previous 12 months, that is, that the individual had experienced a first episode of psychosis. Full inclusion and exclusion criteria are given in Table 2.1. Fifty-seven participants were recruited into the study: thirty patients and twenty-seven controls.

Patient participants were recruited from Early Intervention (EI) services in the London boroughs of Hammersmith and Fulham, Haringey, Merton and Sutton (served by one service), and in the county of Cambridgeshire. Recruitment of participants to the psychosis group began with initial screening of caseloads by individual care-coordinators in the EI services. Care-coordinators informed the researcher of any individuals who met the research criteria (see Table 2.1) and initiated contact. Patients who consented to be contacted by the researcher were contacted by phone, at which time the study was described to them and the study information sheet was sent by post, email or via the care-coordinator. The information sheet for patient participants is shown in Appendix 3. If, after reading the information sheet, the proposed participant was agreeable to taking part they were invited to attend for the study session. The final patient sample consisted of nine females and 21 males, with a mean age of 26.6 years (range = 19-35 years, *SD* = 4.7). Mean time since referral to the team was 6.1 months (*SD* = 3.26), with a range from 2 to 12 months. The number of patient participants recruited from each region is shown in Table 2.2.

Table 2.1. ***Inclusion and exclusion criteria for all participants.***

Group	Inclusion criteria	Exclusion criteria
First episode psychosis	Experience of a first episode of any psychotic disorder including features given in Criterion A for schizophrenia in DSM-IV-TR: delusions, hallucinations, disorganised speech, grossly disorganised or catatonic behaviour, or negative symptoms.	Psychotic illness not meeting criteria for first episode, e.g. participant presented to clinical services or was treated with antipsychotic medication more than 12 months prior to testing.
	Presented to clinical services less than 12 months prior to testing.	Psychosis had a confirmed organic cause.
Controls	Matched for age and gender with a member of the FEP group.	History or presence of psychotic disorder.
All groups	Provided written informed consent.	Presence of learning disability.
	Able to comprehend the key components of the consent form.	Visibly intoxicated by alcohol or other illicit drugs at the time of testing.
	Able to read and write in English at a level sufficient to complete study-related assessments.	

Table 2.2. ***Number of participants recruited from each EI service.***

Region	Participants
Cambridgeshire	7
Hammersmith and Fulham	10
Haringey	4
Merton & Sutton	9

Control participants were recruited from regions within a convenient travelling distance of Central London. They were recruited via poster, leaflet and online classified advertising. The poster and leaflet are reproduced in Appendix 4. Volunteers interested in taking part were invited to contact the researcher via contact details given in the advertising material. Upon contact, a telephone screening conversation was arranged, during which the study was described to them and their eligibility was assessed against the research criteria (see Table 2.1). They were asked whether they had a history of or current psychotic disorder, and basic demographic details (age, gender) were collected for the purposes of matching to the patient group. Eligible individuals were sent the information sheet via email, and if after reading this they were still agreeable to participating they were invited to attend for the study session. The information sheet for control participants is shown in Appendix 5. The control group was matched to the patient group on age and gender as far as possible. The final control sample consisted of seven females and 20 males, with a mean age of 27.3 years (range = 19-33 years, *SD* = 4.1).

2.5 Measures

2.5.1 Demographic data

Demographic information was collected from each participant verbally: participants were asked their date of birth, gender, education level, employment status, first language and ethnicity. Answers for education level, employment status, first language and ethnicity were recorded verbatim and then coded into categories. Education level was coded into one of nine categories depending on the highest qualification obtained by the participant. The categories ranged from 0 = *Entry level or no qualifications*, to 8 = *doctorate, NVQ level 5 or equivalent* (Office of Qualifications and Examinations Regulation, 2012). The full table of educational equivalent levels is given in Appendix 6. Employment status was coded into employed (full or part time) and not employed (full-time student, full-time parent or unemployed). First language was coded into two groups: English or not English. Ethnicity was coded into one of five major categories: White; Mixed / Multiple Ethnic Group; Asian / Asian British; Black / African / Caribbean / Black British; and Other Ethnic Group, as recommended by the Office for National Statistics for use in England (Office for National Statistics). The number of months since first referral to their EI service was collected for each patient as a proxy measure of time since onset of psychosis.

The variables measured during the research protocol are shown in Table 2.3, and full details of each measure follow.

Table 2.3. ***Variables tested and the measures used, with abbreviations.***

Variable	Measure	Abbreviation
Variables of main interest		
Future-directed thinking	Future Thinking Task	FTT
Hopelessness	Beck Hopelessness Scale	BHS
Risk of suicide	Beck Scale for Suicide Ideation	SSI
Negative symptoms of psychosis	Scale for the Assessment of Negative Symptoms	SANS
Other variables		
Depression	Calgary Depression Scale for Schizophrenia	CDSS
Anxiety	Generalized Anxiety Disorder scale	GAD-7
Verbal fluency	FAS test	N/A

Note. **N/A = not applicable**

2.5.2 Future Thinking Task

The future thinking task is an adapted fluency task in which participants are asked to generate events that they anticipate will happen to them in the future in each of three different time periods: the next week, the next year, and the next five to ten years. Two trials are administered for each time period, one in which participants are asked to generate positive events (events they are looking forward to), and one in which they are to generate negative events (events they are not looking forward to), therefore there are six trials in total. Each trial lasts for one minute and the participant is encouraged to keep trying to generate events throughout the whole trial. Administration instructions were as follows:

> Now I'm going to ask you to tell me about things that you think might happen to you in the future. I will give you three different time periods in the future, one at a time, and I'd like you to try to think of things that might happen to you in those time periods. I will give you one minute to tell me as many things as you can. It doesn't matter whether the things you tell me are big and important or small and insignificant, just say what comes to mind. But they should be things that you think will definitely happen or are at least quite likely to happen. If you can't think of many things that's fine, just keep trying until I tell you the time is up. We will do it six times altogether.

At this juncture the researcher checked for understanding and repeated parts of the instructions as required. The following instruction was given before each trial. (Alternative instructions are marked by square brackets and were interchangeable depending on the trial.)

> [First / Next], I'm going to ask you to think of [positive / negative] things in the future, things that you are looking forward to, things that you will enjoy. I want you to tell me as many things as you can that you're looking forward to in the coming [week, including today / year / five to ten years]. Your time starts now.

All trials of a given valence were presented consecutively and ordered as written, and the order of presentation of the positive and negative conditions was counterbalanced across participants. Each response was written down by the researcher. Following each trial participants were presented with their responses one at a time and asked to

rate the likelihood of each event and how they would feel if it were to occur, both on a seven-point Likert scale. The likelihood rating scale was anchored by 1 = *not at all likely* to 7 = *extremely likely*. The feelings rating scale was anchored by -3 = *very unhappy* to +3 = *very happy*.

A composite score was calculated for each trial in the FTT by multiplying the mean likelihood and feelings ratings for each trial by the total number of events generated in that trial. Thus, for a person who generated five things that they were looking forward to in the next week, gave a mean likelihood rating for those items of 6, and gave a mean happiness rating for those items of 2.5, the composite PFT score for 1 week would be 75 (5 x 6 x 2.5). To facilitate the comparison of composite scores between positively- and negatively-valenced trials, composite scores for the negatively-valenced trials were multiplied by -1 (see MacLeod et al., 2005). Outcome measures for the performance aspect of the FTT were the number of events generated (FTT-number) and composite score (FTT-composite).

Content of the events generated in the FTT

The content of the events generated in the FTT were coded into domains using a system adapted from the Quality of Life Scale devised by Flanagan (1978). This scale was used because it has been shown to represent those aspects of life that are important to people in a large study of 3000 individuals from a wide range of ages and ethnicities (Flanagan, 1978). It also measures quality of life not only in relation to health outcomes, but in a wide range of domains. It has been shown to have good internal consistency (Burckhardt, Woods, Schultz, & Ziebarth, 1989) and construct validity (Burckhardt, Anderson, Archenholtz, & Hagg, 2003). Flanagan outlined five

major domains of quality of life, based on categorisation of events, experiences and behaviours listed by respondents as important in their lives. These were: A. Physical and Mental Well-Being; B. Relations with Other People; C. Social, Community and Civic Activities; D. Personal Development and Fulfilment; and E. Recreation. In this study the Recreation category is adapted to take account of non-recreational activities, and renamed Activities. Each category is described below, and in instances where the domain was adapted to take account of unique responses given in the current study this is described. Table 2.4 shows examples of positive and negative items in each category generated by participants in the study.

A. Physical and material well-being

This domain includes events relating to material well-being and financial security, such as having a home, food and possessions, physical and mental health and well-being, and personal safety.

B. Relations with other people

This domain includes relationships with a significant other, the expectation of having children and its attendant activities, relationships with parents and other family members, and relationships with friends. Any response where an activity with a person in the above categories was mentioned was coded into this domain, regardless of other content. In the current study, responses in which a relationship with another person of any kind was the focus of the item were also coded into this domain, even if that person did not fall into one of the aforementioned categories. The most frequent

Table 2.4. ***Sample answers given in each of the future-directed thinking categories.***

	Example responses	
Category example	Positive	Negative
Physical and mental well-being		
1 week	Being healthy	Being homeless
1 year	Buying a car	Having no money
5-10 years	Buying a house	Getting older
Relations with other people		
1 week	Seeing my family	Arguing with my mum
1 year	Getting married	My relationship ending
5-10 years	Having children	Losing touch with friends
Social, community and civic activities		
1 week	Making people smile	Volunteering
1 year	Becoming a godmother	Not gaining UK residency
5-10 years	Adopting British Nationality	Going to prison
Personal development and fulfilment		
1 week	Writing poetry	Not living independently
1 year	Getting promoted	Being unemployed
5-10 years	Starting my own business	Having more responsibility
Activities		
1 week	Playing videogames	Going to the gym
1 year	Running a marathon	Having a limited social life
5-10 years	Going travelling	Being unable to visit home

example was relationships with colleagues. For example, one respondent was not looking forward to having a difficult conversation with a work colleague. This could be conceptualised as an item relating to occupational role, and thus coded into the Personal Development and Fulfilment category (see below). However, the clear focus of the item was a conversation with another person, therefore it was deemed appropriate to categorise this item as into Relations With Other People.

C. Social, community and civic activities

This domain includes activities related to helping or encouraging other people (other than significant other, family or close friends), and activities relating to local and national governments.

D. Personal development and fulfilment

This domain includes items concerning intellectual development, personal understanding and planning, occupational role, and creativity and personal expression. In the current study, responses focusing on gaining or having independence and autonomy were also coded into this domain. It was considered that these items represented a manifestation of personal planning and fulfilment, and therefore were appropriate for this domain.

E. Activities

This domain includes items such as socialising (distinct from relationships with individual friends), passive and observational recreational activities, and active and participatory recreational activities. In the current study activities not usually done for recreation were also coded in this domain, for example cleaning, cooking, functional

travel (e.g. commuting) and doing laundry. This decision was made because on several occasions respondents reported looking forward to everyday activities of this kind, and therefore they could be conceptualised as recreational for these individuals. It seemed inconsistent, though, to code these items into a different category when they were not looked forward to. A common example was cooking. Some respondents enjoyed cooking and therefore it was logical to code this as a recreational activity. However, cooking is also an everyday activity that is not enjoyed by everybody, thus this item posed a problem when respondents reported that they were not looking forward to it. Moreover, items such as cooking and functional travel were not better accounted for by another category. The best compromise seemed to be to include all activities not involving another specified person (which would tend to code into the Relations with Other People category) into the Recreation category, and to reconceptualise it as representing all activities, rather than recreation alone.

Outcome measures for the content aspect of the FTT were the numbers of items generated in each category. Inter-rater reliability of coding was calculated by having a second rater, blind to group membership, categorise the responses from a random 10% of participants (158 items). The inter-rater agreement was kappa = .98, indicating a high level of agreement between the raters.

2.5.3 Hopelessness

The BHS was used as a measure of self-reported hopelessness. It is a 20 item (true or false) self-report scale measuring expectancies about one's future. Participants are asked to indicate whether each statement describes their attitude for the past week including the day of testing (respond "true") or not (respond "false"). Eleven items are

negatively phrased (e.g. “My future seems dark to me”) and nine items are positively phrased (e.g. “I have great faith in the future”). Higher scores indicate a higher level of hopelessness, up to a maximum score of 20. The outcome measure used was total BHS score. A cut-off score of 9 has been shown to give a sensitivity of .80 for the prediction of completed suicide, but this is offset by low specificity of .42 (McMillan et al., 2007). A copy of the BHS is provided in Appendix 7.

The BHS is a well-established instrument with good internal consistency (Kuder-Richardson Formula 20, equivalent to Cronbach’s alpha = .93). A similarly high level of internal consistency was demonstrated in the current study (Cronbach’s alpha = .91). Concurrent validity of the BHS is supported by its relatively high correlation with clinical ratings of hopelessness and other self-administered measures of hopelessness such as the Stuart Future Test and the pessimism item of the Beck Depression Inventory (Beck, Weissman, et al., 1974). The construct validity of the BHS is supported by studies in which it has been used to test hypotheses relevant to the construct of hopelessness. For example, in one study negative expectancies of the future (i.e. hopelessness) were shown to be linked to clinical symptoms of depression, and in another the seriousness of suicidal intent was shown to correlate more highly with negative expectancies of the future than with depression (Beck, Weissman, et al., 1974). The confirmation of these hypotheses, investigated using the BHS, attests to the construct validity of the scale.

2.5.4 Risk of suicide

Risk of suicide was measured using the Beck Scale for Suicide Ideation (SSI), self-report version. It is a 21-item clinical research instrument designed to measure suicide

ideation in inpatients and outpatients. Each item consists of a set of three statements and the participant must endorse the one that best describes how they have been feeling for the past week including the day of testing. Each statement carries a score from 0-2, with a higher score indicating increased suicide ideation up to a maximum of 42. For example, Item 1 contains the statements: "I have a moderate to strong wish to live" (scores 0), "I have a weak wish to live" (scores 1) and "I have no wish to live" (scores 2). Items 1-19 assess current suicide ideation, and Items 20 and 21 assess historic suicide attempts and intent. All participants are required to answer the first five items. Items 4 and 5 act as an internal screening component: if a participant scores above zero on either of these items they must go on to complete the whole questionnaire. A score of zero on both of these items means that only Items 20 and 21 must be completed in addition to the first five. The outcome measure used was total SSI score. No cut-off scores are given for the SSI, as the risk of suicide is extremely problematic to quantify and must be evaluated in the context of a range of factors and assessments. As such, the SSI is intended for use as part of a full risk assessment (Beck & Steer, 1991). A copy of the SSI is provided in Appendix 8.

The SSI has been shown to have high internal consistency (Cronbach's alpha = .93; Beck, Steer, & Ranieri, 1991), and this was replicated in the present sample (Cronbach's alpha = .93). The clinician-administered SSI has been shown to have moderately high correlations with clinical evaluations of suicidal risk (Beck, Kovacs, & Weissman, 1979) and the self-report version is highly correlated with the clinician-administered version (Pearson's r = .90) making it a practical substitute for a longer clinical interview and indicating that the SSI has good concurrent validity. The construct validity of the SSI is supported by studies demonstrating the relationship

between hopelessness, depression and suicidal ideation as measured by the SSI (Beck et al., 1991), and another that indicated that increased scores on the SSI were associated with less favourable ratings of the concept of "life" (Beck, Kovacs, et al., 1979).

2.5.5 Negative symptoms of psychosis

Severity of negative symptoms was measured in the patient group using the SANS (Andreasen, 1981, 1982). The SANS is administered via a semi-structured interview with the respondent covering topics such as how the individual has been spending their time, the quality of their relationships with others, motivation, and energy. The time period for consideration was 1 month. Ratings are made on the basis of the respondent's answers and observations made by the administrator over the course of the interview. Ratings are made on 25 items from five subscales: Affective Flattening or Blunting (e.g. Item 5: Affective Nonresponsivity), Alogia (e.g. Item 9: Poverty of Speech), Avolition-Apathy (e.g. Item 14: Grooming and Hygiene), Anhedonia-Asociality (e.g. Item 18: Recreational Interests and Activities), and Attention (e.g. Item 23: Social Inattentiveness). Each item is rated on a 6-point scale from 0 = *not at all*, to 5 = *severe*, thus higher scores indicate greater severity of negative symptoms, up to a maximum of 125. The outcome measure used was total SANS score. Two example items are given below. The first (Item 1) is rated by observation throughout the interview, the second (Item 21) is rated based on the response of the participant.

Item 1: Unchanging Facial Expression (Affective Flattening or Blunting subscale)

The subject's face appears wooden, mechanical, frozen. It does not change expression, or changes less than normally expected, as the emotional content of discourse changes.…

0 Not at all: Subject is normal or labile;

1 Questionable decrease;

2 Mild: Occasionally the subject's expression is not as full as expected;

3 Moderate: Subject's expressions are dulled overall, but not absent;

4 Marked: Subject's face has a flat 'set' look, but flickers of affect arise occasionally;

5 Severe: Subject's face looks 'wooden' and changes little, if at all throughout the interview (Andreasen, 1981, p. 4).

Item 21: Relationships with Friends and Peers (Anhedonia-Asociality subscale)

Subjects may also be relatively restricted in their relationships with friends and peers of either sex. They may have few or no friends, make little or no effort to develop such relationships, and choose to spend all or most of their time alone. [Ask the participant] 'Have you been spending much time with friends? Do you enjoy spending time alone, or would you rather have more friends?'

0 No inability to form close friendships;

1 Questionable inability to form friendships;

2 Mild, but definite inability to form friendships;

3 Moderate: subject able to interact, but sees friends/acquaintances only two to three times per month;

4 Marked: Subject has difficulty forming and/or keeping friendships. Sees friends/acquaintances only one to two times per month;

5 Severe: Subject has no friends and no interest in developing any social ties (Andreasen, 1981, p. 18).

The SANS ideally incorporates information from additional sources such as nurses, clinical notes or family members. Due to time limitations, collecting collateral information was not possible in the current study. Scores on the SANS have been linked with scores on the Clinical Global Impression (CGI), although a perfect one-to-one relationship between the scales was not demonstrated (Levine & Leucht, 2013). Scores of up to 56 were found to correspond to normal to borderline illness in the CGI, scores of 37-66 corresponded to mild-to-moderate illness on the CGI, and scores of over 63 corresponded to marked, severe and extreme illness on the CGI. The full SANS is reproduced in Appendix 9.

The SANS has high internal consistency (Cronbach's alpha = .89), though in the present sample this was found to be moderate (Cronbach's alpha = .73) , possibly due to invariance on Item 8: Inappropriate Affect. Concurrent validity of the SANS is confirmed by the presence of a significant correlation with the negative symptom subscale of the Positive and Negative Symptom Scale (Spearman's rho = .56, $p <$ .001; Rabany, Weiser, Werbeloff, & Levkovitz, 2011). Construct validity of the SANS is supported by the association of higher SANS scores with reduced functioning (Earnst & Kring, 1997; Sayers, Curran, & Mueser, 1996).

2.5.6 Depression

The Calgary Depression Scale for Schizophrenia (CDSS) was used to measure depression in both groups of participants. This scale was chosen because it differentiates depressive symptoms from other symptoms of schizophrenia, and is also valid for use in populations without schizophrenia (Muller et al., 2005). The CDSS is a nine-item scale, administered via a semi-structured interview. Initial and follow-up questions are given for each item, with the initial question to be asked as written and the follow-up questions to be used at the administrator's discretion. Respondents are asked to base their answers on their experiences over the past 2 weeks. The first eight items are rated on the basis of their answers, and the final item (Observed Depression) is based on the interviewer's observations during the interview. Items are rated by the researcher on a 4-point scale from 0 = *absent*, to 3 = *severe*, thus higher scores indicate more severe depression, up to the maximum score of 27. The outcome measure used was total CDSS score. Two example items are given below.

Item 1: Depression

How would you describe your mood over the last two weeks? Do you keep reasonably cheerful or have you been very depressed or low spirited recently? In the last two weeks how often have you (own words) every day? All day?

0 Absent;

1 Mild: Expresses some sadness or discouragement on questioning;

2 Moderate: Distinct depressed mood persisting up to half the time over last 2 weeks: present daily;

3 Severe: Markedly depressed mood persisting daily over half the time interfering with normal motor and social functioning (D. Addington, Addington, Matickatyndale, & Joyce, 1992, p. 206).

Item 4: Guilty Ideas of Reference

Do you tend to blame yourself for little things you may have done in the past? Do you think that you deserve to be so concerned about this?

0 Absent;

1 Mild: Subject sometimes feels over guilty about some minor peccadillo, but less than 50% of time;

2 Moderate: Subject usually (over 50% of time) feels guilty about past actions the significance of which he exaggerates;

3 Severe: Subject usually feels s/he is to blame for everything that has gone wrong, even when not his/her fault (D. Addington et al., 1992, p. 207).

A score of 7 on the CDSS has an 82% specificity and 85% sensitivity for predicting the presence of a major depressive episode (D. Addington, Addington, & Maticka-Tyndale, 1993). The CDSS is freely available at http://www.ucalgary.ca/cdss and the full scale is shown in Appendix 10.

A recent review of reliability and validity of scales measuring depression in schizophrenia reported the psychometric properties of the CDSS (Lako et al., 2012). The CDSS was shown to have high internal consistency (Cronbach's alpha = .82), which was confirmed in the current study (Cronbach's alpha = .80). Inter-rater reliability (kappa = .86) and test-retest reliability (kappa = .83) were also shown to be

high. Good concurrent validity was evidenced by strong correlations with other measures of depression including the Hamilton Depression Scale (r = .74), the Beck Depression inventory (r = .83), and the PANSS depression subscale (r = .66; Lako et al., 2012). Construct validity is supported by the ability of the CDSS to predict the presence of a major depressive episode (D. Addington et al., 1992).

2.5.7 Anxiety

The General Anxiety Disorder questionnaire (GAD-7) is a well-established and quickly administered self-report scale for anxiety symptoms (Spitzer, Kroenke, Williams, & Lowe, 2006). Participants are asked to rate the frequency of their experience of seven common symptoms of anxiety such as "Feeling nervous, anxious or on edge" and "Having trouble relaxing" over the past week. Responses are given on a 4-point scale from 0 = *not at all* to 3 = *nearly every day*. Higher scores indicate greater levels of anxiety, up to the maximum score of 21. The outcome measure used was total GAD-7 score. A clinical cut-off of 8 is recommended for the identification of clinical anxiety (IAPT National Programme Team, 2011). This cut-off is reported to identify clinical anxiety with 92% sensitivity and 76% specificity (Spitzer et al., 2006). A copy of the GAD-7 is provided in Appendix 11.

The GAD-7 has excellent internal consistency (Cronbach's alpha = .92), and this was confirmed in the current sample (Cronbach's alpha = .92). Concurrent validity is supported by correlations with the Beck Anxiety Inventory (r = .72) and the anxiety subscale of the Symptom Checklist-90 (r = .74), and construct validity is evidenced by the association of the GAD-7 with worsening function in the Symptom Checklist-90 (Spitzer et al., 2006).

2.5.8 Verbal fluency

Verbal fluency was assessed using the FAS test (Lezak, Howieson, & Loring, 2004). In this task participants are asked to generate words beginning with a given letter–F, A or S–in three separate trials. They are given one minute per trial to generate as many words as possible. Proper nouns are not permitted, and multiple words involving the same stem word (e.g. run, runner, running) score only once. The trials were always administered in the same order: first F, then A, then S. The outcome measure used was the total number of words generated across the three trials.

Internal consistency of the FAS test has been shown to be high (Cronbach's alpha = .83), and in the current sample internal consistency was excellent (Cronbach's alpha = .91). Construct validity is supported by the sensitivity of FAS score to lesions in the frontal lobe, temporal lobe, and caudate nucleus, and to the presence of Huntington's disease, amnesia and traumatic brain injury. Test-retest reliability has also been demonstrated to be acceptable ($r = .71$, $p < .001$) (Tombaugh, Kozak, & Rees, 1999).

2.6 Procedure

2.6.1 Data collection

Data were collected between December 2013 and April 2014. All data were collected by the chief investigator and author, EG, who had suitable training and experience in the testing methods. Research sessions for patient participants were conducted on site at their treating early intervention team's base. This was for participants'

convenience, and in case their responses revealed risk issues that needed to be dealt with by the duty clinician. Research sessions for control participants were conducted at the Royal Holloway Central London location.

2.6.2 Research interview

Before testing commenced participants had an opportunity to ask any outstanding questions about the research session and review the study information sheet. Written informed consent was then obtained from each participant. The consent form was the same for both groups and is reproduced in Appendix 12. Demographic details were collected first, followed by administration of the FAS test to orient participants to the nature of fluency tasks. The FTT was administered next. The order of presentation of the positive and negative conditions in the FTT was counterbalanced across participants. A short interview about symptoms of depression (both groups) and negative symptoms (patient group only) followed, to facilitate scoring of the CDSS and SANS. The initial question given for each CDSS item was asked, followed by the follow-up questions as appropriate. During interviews with patient participants, questions relevant to the SANS were integrated into the conversation where appropriate to the topic of discussion, or else asked after the completion of the CDSS. The self-report measures and questionnaires were administered last to prevent priming effects on the FTT. The GAD-7 was administered followed by the BHS. For control participants testing ended here. For patient participants the SSI followed the BHS, at which point testing was complete. The procedure lasted for between 45 and 60 minutes in total for all participants.

Following testing all participants were given a debriefing document reiterating the purpose of the study and listing the names and contact details of organisations offering further help and information if needed. Debrief sheets for patient participants gave details of the relevant Trust's crisis procedure. An example debrief sheet is shown in Appendix 13.

2.6.3 Data analysis

Data were scored by the researcher, and analysed using the Statistical Package for the Social Sciences (SPSS, version 21.0).

Chapter 3

Results

3.1 Data screening

3.1.1 Data inclusion

Thirty patient participants completed at least the FTT, meaning that their data could be used in the following analysis. Of these 30, one did not complete the SSI, but consented to the rest of their data being included in the analysis. One patient participant, additional to the 30 included in the analysis below, began the study session but took markedly longer than average on the tasks and did not complete the FTT within one session. The participant did not attend for a second session and their data are not included in any part of the analysis. All other patients and all 27 controls provided complete datasets.

3.1.2 Data distribution: normality

Before analysis commenced, data on continuous variables were screened for deviation from the normal distribution. Standardized *z*-scores for skewness and kurtosis were calculated for each variable. A score of 2.58 or more, corresponding to a *p*-value of less than .01, was considered to indicate significant deviation from the normal distribution (Field, 2009, Chapter 5).

Significant positive skew was demonstrated in several of the FTT performance variables in the control group, including FTT-composite for positive valence, 5-10 years ($z = 2.99$); negative valence, 1 week ($z = 4.06$); and negative valence, 1 year ($z = 3.57$). A single outlying score of more than three standard deviations from the

mean in each of these variables was responsible for the observed skew. The outlying scores were Winsorized, that is, they were changed manually to the value of the next highest score plus one unit of measurement. This was balanced by repeating the procedure at the opposite end of the distribution. After Winsorizing, these four variables were no longer significantly skewed. Significant positive skew was also evident in FTT-composite for positive valence, 1 week ($z = 2.79$), but there were no extreme outliers in this variable. ANOVA is considered robust to violations of the assumption of normality especially when sample size approaches 30 (Field, 2009, Chapter 10), therefore as the skew was not extreme and this was the only remaining skewed variable of the FTT, it was considered more satisfactory to analyse this variable unchanged than to transform it in isolation.

Significant positive skew was shown in eight of the FTT content categories, and significant kurtosis was shown in three. In the case of these variables, inspection of the data showed that outliers were not always responsible for the skew, therefore Winsorizing was not appropriate. Square-root and $\log_{10}$ transformations improved but did not eliminate the skew and kurtosis, therefore it was decided that non-parametric tests would be used to compare groups on FTT content variables.

Significant positive skew was demonstrated in the BHS scores of the control group ($z = 2.75$). A square-root transformation was performed on the data for both groups, which restored the distribution of the control group to normal and did not unduly affect the skew of the patient group. The transformed variable was used in all of the analyses that follow.

Significant positive skew and kurtosis were present in the SSI scores of the patient group due to a high number of zero scores (47%). Skew and kurtosis were ameliorated by square root and $\log_{10}$ transformations but these transformations were unable to affect the zero scores and thus the data continued to tend to cluster towards zero after transformation. For this reason it was decided to code SSI scores into *zero* and *non-zero* groups and use this binary variable in subsequent analyses in place of the continuous SSI variable. Fourteen people had zero scores, and sixteen had non-zero scores. More details are shown in Section3.6.

3.1.3 Data distribution: variance ratio

Before data analysis commenced, data on continuous variables were screened for differences in group variance. Variance ratios between groups were calculated for each variable and compared to the Hartley's critical value (F_{max}) of 2.07 for group size of 30 (Field, 2009, Chapter 5). Variance ratios greater than $F_{max} = 2.07$ were considered to indicate a significant difference in group variances.

Significant group differences in variance were found in FTT-number, positive valence, 1 year ($F_{max} = 2.32$) and FTT-composite, positive valence, 1 year ($F_{max} = 2.77$). In both cases the control (smaller) group had the larger variance, which would be expected to make ANOVA *F*-ratios more liberal (Field, 2009, chap. 10). It was decided to proceed with parametric tests despite differences in group variances as only one of the six variables entered into each of the analyses was affected by this problem. It was noted that results should be interpreted with caution, and post hoc tests were conducted for unequal variances where appropriate.

Significant group differences in variance were found in two FTT content variables: Activities, positive valence ($F_{max} = 2.62$) and Social Community and Civic Activities, negative valence ($F_{max} = 7.08$). Controls had the larger variance in both cases, which would be expected to make the ANOVA *F*-ratio more liberal. On the basis of these results and the significant deviations from normality also observed, it was decided to test for group differences in FTT content using non-parametric tests.

Significant differences between group variances were shown for CDSS ($F_{max} = 4.24$) and GAD-7 ($F_{max} = 3.47$). The patient group had the larger variance in both cases. Statistical tests were conducted for unequal variances where appropriate.

3.2 Demographics of the study population

The demographic profile of the 30 patients and 27 controls is shown in Table 3.1. Group differences in age, verbal fluency, CDSS score, and GAD-7 score were investigated using *t*-tests. Group differences in education level, which was measured on an ordinal scale, were tested for using a Mann-Whitney test. Group differences in all other variables, which were categorical, were tested for using chi-squared (χ^2) tests or Fisher's Exact Test (FET; used where contingency tables were 2 × 2 or where the expected value in a cell was less than 5). As in all of the analyses described in this chapter, tests were two-tailed and used a 5% significance level. Where appropriate, separate variance estimates were used where Levene's test indicated that variances were unequal. Where appropriate, the assumptions of regression were tested. For all regression analyses, the assumptions of linearity, multicollinearity, and independence were adequately met. Multicollinearity of predictors was tested using collinearity diagnostics including verifying that tolerances were greater than .1, variance inflation factor values were close to 1, and that no two predictors had high variance proportions on the same small eigenvalue. Additionally for linear regression, independence of errors was verified using the Durbin-Watson test and found to be satisfactory in all cases (values close to 2).

3.2.1 Age

Groups did not differ significantly on age ($t(55) = 0.66$, $p = .515$). The mean and standard deviations for each group are shown in Table 3.1.

Table 3.1. ***Demographic summary of participants in each group.***

Demographic	Patients[a]	Controls[b]
Age, mean (*SD*)	26.6 (4.7)	27.3 (4.1)
Age range	19-35	19-33
Gender, n (%)		
Male	21 (70)	20 (74)
Female	9 (30)	7 (26)
Educational level, median (range)	3 (1-8)	6 (0-6)
Employment, n (%)		
Employed	9 (30)	15 (56)
Not employed	21 (70)	12 (44)
Ethnic group, n (%)		
White	19 (63)	19 (70)
Mixed / Multiple ethnic groups	2 (7)	0 (0)
Asian / Asian British	5 (17)	2 (7)
Black / African / Caribbean / Black British	4 (13)	6 (22)
Other ethnic group	0 (0)	0 (0)
First language, n (%)		
English	22 (73)	17 (63)
Not English	8 (27)	10 (37)
Verbal fluency total score, mean (*SD*)	25.4 (9.6)	34.2 (11.9)

***Note*. [a]*n* = 30. [b]*n* = 27.**

3.2.2 Gender

Groups did not differ significantly in gender (p = .776, FET). Both groups had a majority of male participants. The number of males and females in each group are shown in Table 3.1.

3.2.3 Education

Groups differed significantly in Ofqual equivalent education level (U = 211.0, z = -3.20, p = .001; see Appendix 6 for full details of each level). Specifically, the control group had a higher level of education (M = 5, equivalent to foundation degree and diploma level) than the patient group (M = 3, equivalent to 'A' level). The median and range of educational level for each group is shown in Table 3.1.

3.2.4 Employment status

Groups did not differ significantly in employment status, but this test approached significance ($\chi^2(1) = 3.80$, p = .051). The number of participants in each employment group is shown for each of the two study groups in Table 3.1.

3.2.5 Ethnic group

Groups did not differ significantly in ethnic group (p = .412, FET). The number of participants in each ethnic group is shown for each group in Table 3.1.

3.2.6 First language

Groups did not differ significantly on first language, which was coded as English or not English (p = .569, FET). The number of participants speaking English vs. another language as a first language is shown for each group in Table 3.1.

3.2.7 Verbal fluency

Groups differed significantly on FAS total score ($t(55) = 3.08$, p = .003). Specifically, the control group scored higher on the FAS test than did the patient group. Means and standard deviations for this measure are shown in Table 3.1. As the FTT is based on tests of verbal fluency, positive and negative FTT-composite scores were tested for correlation with FAS score. FTT-composite was significantly correlated with FAS score in both the positively- (r = .55, $p < .001$) and negatively-valenced (r = .36, p = .005) trials.

3.2.8 Depression and anxiety

Groups differed significantly on clinical measures of depression and anxiety, with patients scoring more highly than controls on both the CDSS ($t(43) = 3.93$, $p < .001$) and GAD-7 ($t(45) = 2.58$, p = .01). Means and standard deviations for these measures are shown in Table 3.2.

Table 3.2. ***Means (and standard deviations) of depression and anxiety scores for each group.***

Measure	Patients	Controls
CDSS	5.03 (4.02)	1.80 (1.95)
GAD-7	8.70 (7.26)	4.78 (3.90)

On the CDSS, 15 patients scored above the cut-off of 6, and 15 scored below. In the control group, 2 participants scored above the cut-off, and 25 scored below. This indicated that clinical depression may have been present in 50% of the patient group and 7% of the control group. On the GAD-7, 14 patients scored above the cut-off of 8, and 16 scored below. In the control group, 6 participants scored above the cut-off, and 21 scored below. This indicated that clinical anxiety may have been present in 47% of the patients and 22% of the controls.

3.3 The relationship between self-reported hopelessness and positive future thinking

3.3.1 Group differences in self-reported hopelessness

An independent samples *t*-test was carried out in order to ascertain whether group differences existed in self-reported hopelessness that may have the potential to produce spurious correlations between future-directed thinking and BHS score. The results revealed a significant group difference in BHS score ($t(51.9) = 2.47$, $p = .017$), with patients ($M = 2.29$, $SD = 1.30$) reporting greater hopelessness than controls ($M = 1.56$, $SD = 0.91$). This indicated that any correlations observed between BHS and other variables of interest should be repeated in each group individually.

3.3.2 The relationship between self-reported hopelessness and future-directed thinking

Bivariate correlations were carried out between FTT-composite scores for each valence[2] and CDSS, GAD-7 and BHS. FTT-composite was used as it incorporates all of the aspects of future-directed thinking captured by the FTT. The results are displayed in Table 3.3, which shows that there was a significant negative correlation between PFT-composite and both CDSS and BHS scores.

Table 3.3. ***Bivariate correlations between FTT variables and depression, anxiety and self-reported hopelessness.***

	PFT-composite	NFT-composite	CDSS	GAD-7	BHS
PFT-composite	-	.25	-.32	-.25	-.50
		$p = .062$	$p = .016$	$p = .063$	$p < .001$
NFT-composite		-	.09	.18	.19
			$p = .489$	$p = .193$	$p = .163$
CDSS			-	.82	.62
				$p < .001$	$p < .001$
GAD-7				-	.55
					$p < .001$

[2] For ease of reference, for the remainder of this chapter FTT-composite scores for positively- and negatively-valenced trials will be referred to as PFT-composite and NFT-composite, respectively.

These results indicated that as PFT increased, depression and self-reported hopelessness both decreased. No significant correlations were found between NFT-composite and BHS. Strong positive correlations were also demonstrated between all three of the CDSS, GAD-7 and BHS.

The correlation analysis between PFT-composite and BHS was repeated with each group separately, to rule out the possibility that the correlation observed was an artefact of the group difference already demonstrated. The results showed that the correlation was significant in both groups, demonstrating a reliable association between these variables. The data are shown in Table 3.4.

Table 3.4. ***Bivariate correlations between PFT-composite and self-reported hopelessness, separated by group.***

Variable	*r*	*p*
BHS		
Patients	-.39	.032
Controls	-.58	.003

Based on the results of the correlation analysis, a hierarchical linear regression analysis was performed in order to explore further the relationships between depression, positive future thinking, and self-reported hopelessness. A hierarchical regression was carried out in order to investigate whether PFT-composite could predict BHS score over and above the predictive ability of the CDSS. CDSS was entered into the regression model first followed by PFT-composite at Step 2. The dependent variable was BHS. The model was significant at Step 1 ($F(1,55) = 34.83$,

$p < .001$) indicating that CDSS was significantly associated with BHS score: as depression rose, so did self-reported hopelessness. The model was also significant after the addition of PFT-composite ($F(2,54) = 25.55$, $p < .001$) and the change in the model was significant ($F(1,54) = 10.35$, $p = .002$). Both CDSS and PFT-composite contributed significantly to the final model, as shown in Table 3.5. These results indicate that across groups, a deficit in PFT was associated with self-reported hopelessness, over and above its association with depression.

Table 3.5. ***Summary of hierarchical linear regression analysis for variables predicting self-reported hopelessness.***

Variable	*B*	*SE B*	β	*p*
Step 1				
CDSS	0.21	0.04	.62	< .001
Step 2				
CDSS	0.17	0.03	.52	< .001
PFT-composite	< -0.01	< 0.01	-.33	.002

Note. **R^2 = .39 for Step 1 (p < .001); ΔR^2 = .098 for Step 2 (p = .002).**

3.4 Future-directed thinking in individuals with first episode psychosis and community controls

As this was an exploratory study in a new population, group differences in future-directed thinking were tested for using both FTT-number (the number of items generated on the FTT) and FTT-composite (incorporating likelihood and feelings ratings as well as number of items generated). Groups were compared on positively- and negatively-valenced trials in each of the three time periods using a 2 (Group) × 3 (Period) × 2 (Valence) mixed-model ANOVA. An analysis of covariance (ANCOVA) was also performed to investigate the effect of covarying for FAS score on these results. The Huynh-Feldt value of *F* was used when sphericity could not be assumed, and separate variance estimates were used in *t*-tests when Levene's test indicated unequal variances. Each analysis is described in turn below.

3.4.1 Group differences in the number of events generated, FTT-number

The means and standard deviations of FTT-number for group, period and valence are shown in Table 3.6.

Table 3.6. ***Means (and standard deviations) of FTT-number by group, period and valence.***

	Positive condition		Negative condition	
Time period	Patients	Controls	Patients	Controls
1 week	5.23 (2.36)	7.07 (3.10)	3.33 (1.54)	4.81 (1.62)
1 year	4.97 (2.13)	7.37 (3.24)	3.07 (1.51)	4.67 (1.64)
5-10 years	4.97 (1.94)	6.70 (2.40)	3.77 (2.06)	5.11 (1.67)
Overall	5.06 (1.84)	7.05 (2.48)	3.39 (1.39)	4.86 (1.24)

The Group × Period × Valence mixed-model ANOVA for the number of items generated on each trial of the FTT revealed a significant main effect of group ($F(1,55) = 17.67$, $p < .001$), reflecting the fact that patients ($M = 4.22$, $SD = 1.45$) generated fewer items overall than controls ($M = 5.96$, $SD = 1.67$). A significant main effect of valence was also apparent ($F(1,55) = 66.36$, $p < .001$), with participants from both groups finding it more difficult to generate items in the negatively-valenced trials ($M = 4.09$, $SD = 1.51$) than in the positively-valenced trials ($M = 6.00$, $SD = 2.37$) when time periods were combined. There was no main effect of period ($F(2,110) = 0.19$, $p = .827$).

The analysis revealed a significant Period × Valence interaction across groups ($F(2,110) = 3.21$, $p = .044$). There were no significant Group × Period ($F(2,110) = 0.68$, $p = .510$) or Group × Valence ($F(1,55) = 1.20$, $p = .278$) interactions, nor was there a significant three-way Group × Period × Valence interaction ($F(2,110) = 0.22$, $p = .802$).

Visual inspection of the data (see Figure 3.1) suggested that the source of the Period × Valence interaction may be differences in scores on the negatively-valenced trials. Therefore, repeated measures ANOVAs were conducted to compare the number of items generated at each time period for each valence separately. This analysis revealed no significant effect of period in the positively-valenced trials ($F(2,112) = 0.70$, $p = .500$), but an effect of period approaching significance was indicated in the negatively-valenced trials ($F(2,112) = 3.03$, $p = .052$). Post hoc *t*-tests revealed that this effect lay in a significant elevation of the number of items generated

in the 5-10 year negative trial (M = 4.40, SD = 1.99) over that generated in the 1 year negative trial (M = 3.82, SD = 1.75; $t(56) = 2.59$, $p = .012$).

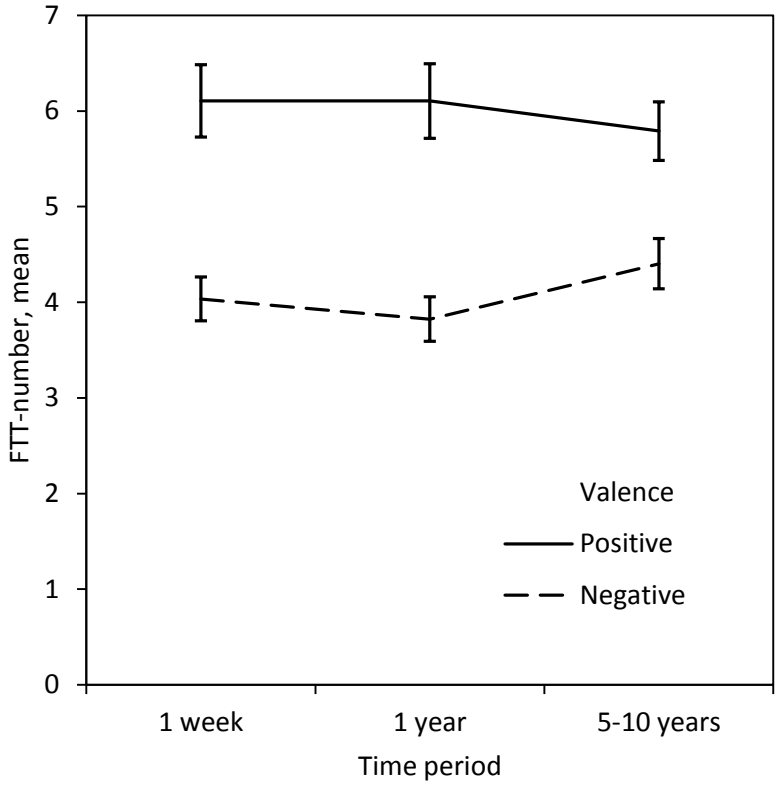

Figure 3.1. ***Mean FTT-number in each valence, plotted against time period. Error bars represent standard error of the mean.***

In summary, the results of this analysis indicated that patient participants found it harder to generate events of any kind in their future than did controls. It was also more difficult for people in either group to think of negative expected events in their future than to think of positive expected events. Finally, the results indicated that the number of future events generated for any given time period may be dependent on the valence of the events being generated: although this effect only tended towards

significance, further analysis showed that it may be easier for people to think of negative future events expected in the next 5-10 years than in the next 1 year.

In order to investigate the effect of verbal fluency on the analysis of FTT-number described above an ANCOVA was performed with FAS score as the covariate. The results of the original ANOVA were upheld, except in the case of the main effect valence, which was no longer significant ($F(1,54) = 0.01$, $p = .913$), and the Period × Valence interaction, which was also eliminated ($F(2,110) = 1.91$, $p = .153$). The main effect of group remained significant ($F(1,54) = 33.90$, $p < .001$).

3.4.2 Group differences in FTT-composite score

The means and standard deviations of FTT-number for group, period and valence are shown in Table 3.7.

Table 3.7. ***Means (and standard deviations) for FTT-composite by group, period and valence.***

	Positive condition		Negative condition	
Time period	Patients	Controls	Patients	Controls
1 week	67.24 (40.82)	84.46 (49.18)	23.41 (17.10)	25.76 (16.29)
1 year	60.29 (35.31)	99.05 (58.82)	22.74 (17.29)	32.94 (18.74)
5-10 years	69.14 (39.26)	86.45 (44.39)	25.62 (19.95)	36.74 (22.80)
Overall	65.56 (33.62)	90.75 (46.64)	23.92 (14.60)	31.46 (14.30)

The Group × Period × Valence mixed-model ANOVA for FTT-composite score revealed a significant main effect of group ($F(1,55) = 7.43$, $p = .009$), reflecting the fact that patients ($M = 44.74$, $SD = 20.24$) had lower composite scores overall than controls ($M = 61.60$, $SD = 25.92$). A significant main effect of valence was also apparent ($F(1,55) = 92.94$, $p < .001$), with participants from both groups having lower mean composite scores in the negatively-valenced trials ($M = 27.49$, $SD = 14.82$) than in the positively-valenced trials ($M = 77.49$, $SD = 41.91$), regardless of period. There was no main effect of period ($F(2,110) = 1.25$, $p = .292$).

The analysis revealed a significant Group × Period interaction across valences ($F(2,110) = 3.39$, $p = .037$). There were no significant Group × Valence ($F(1,55) = 2.55$, $p = .116$) or Period × Valence ($F(2,110) = 0.53$, $p = .572$) interactions, nor was there a significant three-way Group × Period × Valence interaction ($F(2,110) = 2.05$, $p = .134$).

Post hoc *t*-tests revealed that the source of the Group × Period interaction was variation in the size of group differences across time periods; Figure 3.2 shows the data visually. Patients were statistically similar to controls in their composite scores for the 1 week trials ($t(55) = 1.41$, $p = .164$), but significantly different from controls in their composite scores for the 1 year trials ($t(55) = 3.70$, $p < .001$) and the 5-10 year trials ($t(55) = 2.15$, $p = .036$). Patients had lower composite scores for the 1 year trials ($M = 41.51$, $SD = 20.33$) and the 5-10 year trials ($M = 47.38$, $SD = 23.87$) than controls for either trial (1 year $M = 66.54$, $SD = 30.21$; 5-10 year $M = 62.74$, $SD = 30.01$) when valences were considered together.

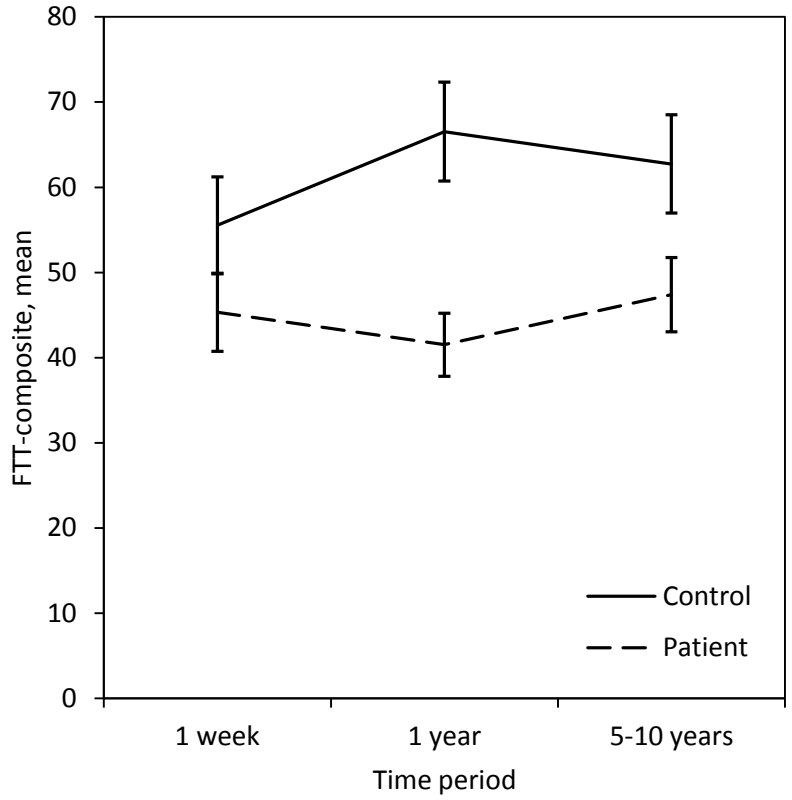

Figure 3.2. ***Mean FTT-composite score for each group, plotted against time period. Error bars represent standard error of the mean.***

In summary, the results of this analysis indicate that the first episode psychosis sample had lower future expectancies for any valence than controls, as measured by a composite score that incorporated likelihood and feeling ratings as well as number of events generated. They also had lower future expectancies for both valences for the next year and 5-10 years than controls. Participants in both groups had higher positive future expectancies than negative, regardless of the time period considered.

In order to investigate the effect of verbal fluency on the analysis of FTT-composite scores an ANCOVA was performed that was identical to the ANOVA described above except for the inclusion of FAS score as a covariate. The results of the original ANOVA were upheld, except in the case of the main effects of group ($F(1,54) = 1.78$, $p = .188$) and valence ($F(1,54) = 0.59$, $p = .445$), which were not maintained after covarying for FAS score. The Group × Period interaction remained significant ($F(2,108) = 3.92$, $p = .023$).

3.5 Content of future-directed thinking in first episode psychosis and community controls

As the data were not normally distributed, it was not appropriate to perform a mixed-model ANOVA for the analysis of the content of future thinking in the groups as was done for other FTT variables. Instead, Mann-Whitney tests were used to compare groups on the number of items generated in each category for each valence. Time periods were combined to reduce the number of multiple comparisons and control Type I error. The tests revealed significant group differences in the number of events generated in the Relations with Other People and Personal Development and Understanding categories, in both positively- and negatively-valenced trials (see Table 3.8). Specifically, patients generated significantly fewer items than controls on both of these categories. After Bonferroni correction for ten tests, which required that *p*-values were less than .005 for a significant result, group differences remained significant for the negatively-valenced trials but not for the positively-valenced trials.

Table 3.8. ***Mean number of items in each FTT category by valence and group, with summary statistics.***

Category	Mean number of events		*U*	*z*	*p*
	Patient	Control			
Positive valence					
Physical and material wellbeing	2.30	0.42	337.5	-1.10	.273
Relations with other people	3.80	0.63	265.5	-2.25	.024
Social, community and civic activities	0.30	0.09	465.5	1.41	.159
Personal development and fulfilment	3.50	0.46	240.5	-2.66	.008
Activities	5.27	1.09	329.5	-1.21	.226
Negative valence					
Physical and material wellbeing	3.40	0.42	334.0	-1.15	.251
Relations with other people	2.30	0.45	215.5	-3.06	.002
Social, community and civic activities	0.17	0.19	315.0	-1.87	.061
Personal development and fulfilment	2.27	0.36	222.0	-2.97	.003
Activities	2.00	0.35	434.5	.48	.630

Note. **For ease of interpretation means are shown instead of medians.**

3.6 The relationship between future-directed thinking and suicidal ideation in individuals with first episode psychosis

The demographic profile of the groups scoring zero and non-zero on the SSI are shown in Table 3.9. Groups did not differ significantly on age ($t(28) = -0.07$, $p = .943$), gender ($p = .236$, FET), education ($U = 118.5$, $z = .28$, $p = .790$), employment status ($p = .694$, FET), ethnic group ($p = .147$, FET), or first language ($p = .226$, FET).

Table 3.9. ***Demographic summary of the groups scoring zero and non-zero on the SSI*****.**

	SSI score	
Demographic	Zero[a]	Non-zero[b]
Age, mean (*SD*)	26.5 (4.9)	26.6 (4.6)
Age range	20-35	19-35
Gender, n (%)		
Male	8 (57)	13 (81)
Female	6 (43)	3 (19)
Educational level, median (range)	(0-6)	(0-6)
Employment, n (%)		
Employed	5 (36)	4 (25)
Not employed	9 (64)	12 (75)
Ethnic group, n (%)		
White	7 (50)	12 (75)
Mixed / Multiple ethnic groups	1 (7)	1 (6)
Asian / Asian British	2 (14)	3 (19)
Black / African / Caribbean / Black British	4 (29)	0 (0)
Other ethnic group	0 (0)	0 (0)
First language, n (%)		
English	12 (86)	10 (62)
Not English	2 (14)	6 (38)
Verbal fluency total score, mean (*SD*)	26.7 (10.7)	24.3 (8.9)

Note**. [a]*****n* = 14. [b]*****n* = 16.**

The relationship between future thinking and suicide ideation was investigated using hierarchical logistic regression. Hierarchical regression was chosen over standard regression in order to establish whether PFT and NFT could predict SSI score (zero or non-zero) over and above the effects of depression, anxiety, and self-reported hopelessness. CDSS, GAD-7 and BHS scores were entered into the model first, followed at Step 2 by FTT-composite scores for each valence, combined across periods. The dependent variable was SSI score. The full model is shown in Table 3.10.

Table 3.10. ***Summary of hierarchical logistic regression analysis for variables predicting SSI score.***

Variable	*B*	*SE B*	Odds ratio	*p*
Step 1				
CDSS total score	-0.13	0.21	0.88	.544
GAD-7 total score	0.08	0.11	1.08	.476
BHS total score	0.73	0.44	2.08	.098
Step 2				
CDSS total score	-0.08	0.22	0.92	.716
GAD-7 total score	0.04	0.11	1.04	.733
BHS total score	0.33	0.53	1.39	.531
PFT-composite	-0.01	0.01	0.99	.344
NFT-composite	0.03	0.02	1.03	.087

Note. **R^2 (Nagelkerke) = .24 for Step 1. R^2 (Nagelkerke) = .36 for Step 2.**

The overall model at Step 1 was non-significant ($\chi^2(2) = 5.86$, $p = .119$), suggesting that CDSS, GAD-7 and BHS scores did not significantly predict SSI score. None of the variables contributed significantly to the model, though BHS showed a trend towards significance (see Table 3.10). The addition of PFT-composite and NFT-composite into the model did not produce significant change in the predictive ability of the model ($\chi^2(2) = 3.64$, $p = .162$), but the model overall showed a trend towards significance ($\chi^2(2) = 9.50$, $p = .091$). NFT-composite showed a trend towards a significant contribution to the model (*Wald*(1) = 2.93, *B* = .03, *SE* = .02, $p = .087$), whereas PFT-composite did not.

The hierarchical logistic regression analysis suggested that FTT variables, especially NFT-composite, may significantly predict SSI score, but that the addition of clinical and hopelessness variables in Step 1, whilst not predictive of SSI score, may have weakened this effect through not themselves being related to SSI but removing some variability in SSI score that would otherwise be predicted by the FTT variables. Moreover, the inclusion of the clinical and hopelessness variables reduced the statistical power of the FTT variables to predict SSI score without adding predictive ability to the model. Therefore the relationship between SSI score and FTT variables alone was investigated using a simple logistic regression with PFT-composite and NFT-composite as independent variables, and SSI score as the dependent variable. The full model is shown in Table 3.11 and illustrated in Figure 3.3.

Table 3.11. ***Summary of standard logistic regression analysis for variables predicting SSI score.***

Variable	*B*	*SE B*	Odds ratio	*p*
Step 1				
PFT-composite	-0.01	0.01	0.99	.089
NFT-composite	0.03	0.01	1.03	.017

Note. R^2 **(Nagelkerke) = .35.**

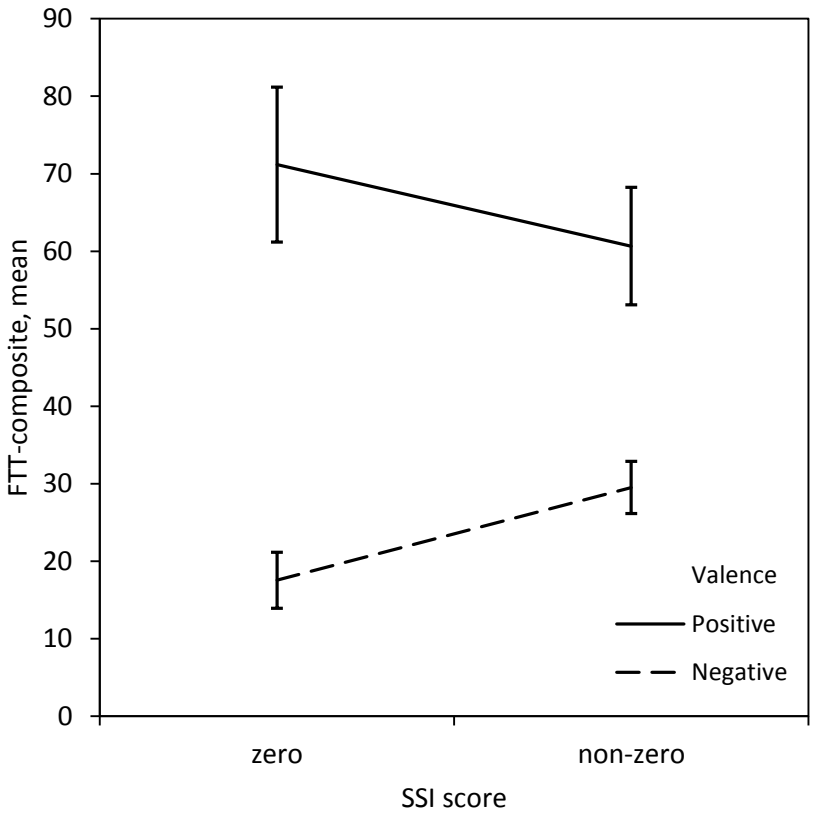

Figure 3.3. ***Mean FTT-composite score for each valence, plotted against SSI score. Error bars represent standard error of the mean.***

The overall regression model was significant ($\chi^2(2) = 8.97$, $p = .011$). There was a significant relationship between SSI and NFT-composite (*Wald*(1) = 5.68, *B* = .03, *SE* = .01, *p* = .017), with increased NFT-composite predicting SSI score greater than 1. The association between PFT-composite and SSI tended towards significance (*Wald*(1) = 2.89, *B* = -.01, *SE* = .01, *p* = .089), with reduced PFT-composite tending to predict a SSI score greater than 1.

This result shows that FTT variables, in particular increased NFT, were associated with SSI scores greater than zero. In combination with the results of the hierarchical regression, it can be concluded that the clinical measures were not uniquely associated with SSI, but a significant amount of variance in SSI was uniquely explained by future-directed thinking, especially NFT.

3.7 The relationship between future-directed thinking and negative symptoms in individuals with first episode psychosis

The relationship between future thinking and the negative symptoms of psychosis, as measured by the SANS, was first investigated using bivariate correlations. The results are shown in Table 3.12.

Table 3.12. ***Bivariate correlations between negative symptoms and depression, anxiety, self-reported hopelessness and FTT variables.***

	CDSS	GAD-7	BHS	PFT composite	NFT composite	SANS
CDSS	-	.82	.62	-.32	.09	.33
		$p < .001$	$p < .001$	$p = .016$	$p = .489$	$p = .078$
GAD-7		-	.55	-.25	.18	.38
			$p < .001$	$p = .063$	$p = .193$	$p = .040$
BHS			-	-.50	.19	.43
				$p < .001$	$p = .163$	$p = .017$
PFT-composite				-	.25	-.55
					$p = .062$	$p = .002$
NFT-composite					-	-.12
						$p = .545$

These correlations indicate that SANS was positively correlated with GAD-7 and BHS, and strongly negatively correlated with PFT-composite score. Other correlations shown in Table 3.12 have been described previously. Based on these results, the relationships between SANS, GAD-7, BHS and PFT-composite were investigated further using hierarchical linear regression. Hierarchical regression was chosen over standard regression in order to establish whether PFT could predict SANS score over and above the effects of anxiety and self-reported hopelessness. GAD-7 and BHS scores were entered into the model first, followed at Step 2 by PFT-composite for all periods combined. The dependent variable was SANS score. The full model is shown in Table 3.13.

Table 3.13. ***Summary of hierarchical linear regression analysis for variables predicting SANS score.***

Variable	*B*	*SE B*	β	*p*
Step 1				
GAD-7 total score	0.26	0.25	.19	.374
BHS total score	2.14	1.39	.32	.135
Step 2				
GAD-7 total score	0.16	0.23	.14	.479
BHS total score	1.22	1.32	.18	.365
PFT-composite	-0.04	0.02	-.43	.018

Note. R^2 **= .21 for Step 1.** ΔR^2 **= .16 (*p* = .018).**

The overall model was significant at Step 1 ($F(2,27) = 3.63$, $p = .04$), though neither GAD-7 nor BHS scores contributed uniquely after the other was controlled for. The

overall model was also significant at Step 2 ($F(3,26) = 5.01$, $p = .007$) and the change in the model was significant (see Table 3.13), showing that the addition of FTT variables into the model improved its fit with the dependent variable SANS score. The overall model explained 29% of the variance in SANS score.

These results indicate that within the patient group, positive future thinking was a significant predictor of negative symptom severity, over and above its relationship with anxiety and self-reported hopelessness.

Chapter 4

Discussion

4.1 Summary of results

The first aim of the current study was to replicate previous work by demonstrating a relationship between self-reported hopelessness and reduced PFT across all participants. Consistent with Hypothesis 1, the results showed that reduced PFT was indeed associated with self-reported hopelessness, and that this was independent of their mutual relationship with depression. As hypothesised, negative future-directed thinking was not associated with self-reported hopelessness.

The second aim of this work was to investigate group differences in future-directed thinking between individuals with first episode psychosis and matched community controls. The results upheld Hypothesis 2 by showing that participants in the psychosis group generated significantly fewer positive future events than controls, and had lower scores on the composite variable involving number, feelings and likelihood. The same was true in the negatively-valenced trials, which was consistent with the second part of Hypothesis 2: that NFT would not be increased in patients relative to controls. There was also an interaction involving time period on the overall composite score: individuals with psychosis had lower future expectancies for the next 1 year and the next 5-10 years compared to controls, but the groups did not differ in their future-directed thinking for the next 1 week. Investigation of the second aim of this study also revealed consistently lower NFT than PFT across groups, and an interaction between valence and period that showed that participants were able to think of more negative events in the next 5-10 years than in the next 1 year, but there

was no difference in the number of positive events generated at different time periods. The latter two results will not be discussed further, as they were not related to the main hypotheses of the study.

Aim 3 of the study was to characterise the content of future-oriented cognitions in psychosis in comparison with those of community controls. The results of the content analysis showed that individuals with psychosis generated significantly fewer events concerning relations with other people, and concerning personal development and fulfilment. Individuals with psychosis did not generate more items than controls in any of the categories.

Aim 4 was to examine the association between future-directed thinking and suicide ideation in individuals with first episode psychosis. The results were inconsistent with Hypothesis 3, which predicted a relationship with PFT but not with NFT. The results showed that increased NFT was associated with suicide ideation in the psychosis group, but that reduced PFT was only weakly associated with suicide ideation.

The fifth aim of the study was to investigate whether specific aspects of future-directed thinking were associated with negative symptoms in individuals with first episode psychosis. Hypothesis 4 predicted that decreased PFT would be associated with increased severity of negative symptoms, and this was supported by the results. Moreover, the association was found to be independent of depression and self-reported hopelessness.

4.2 The relationship between self-reported hopelessness and positive future thinking

The current study aimed to investigate the relationship between PFT and self-reported hopelessness in individuals with first episode psychosis and matched controls. The results showed that across the whole sample, and in the psychosis group alone, PFT was significantly negatively correlated with self-reported hopelessness, indicating that as PFT decreased self-reported hopelessness increased. Moreover, this relationship was maintained when depression was added into the regression model before PFT, demonstrating that it was independent of any concurrent relationship with depression. These results support Hypothesis 1 and are consistent with previous research, which has found a reliable relationship between reduced PFT and hopelessness in a range of patient groups such as people who have recently attempted suicide (Hunter & O'Connor, 2003; MacLeod, Pankhania, et al., 1997; MacLeod et al., 1993), including older people (Conaghan & Davidson, 2002), and people with depression (MacLeod & Byrne, 1996).

This is the first time that this relationship has been demonstrated in individuals with psychosis, and the results indicate that the PFT may be used as an indicator of hopelessness in this patient group. The FTT is quick to administer, and is an objective measure that may be less susceptible to the effects of social desirability than self-report measures such as the BHS (Ivanoff & Jang, 1991; Linehan & Nielsen, 1981). Previous research has also shown that it is a better predictor of future suicidal ideation than BHS (O'Connor et al., 2008). Therefore it may be a useful tool in the assessment of hopelessness in this population. These results also suggest a treatment target for the

improvement of hopelessness in psychosis, in the form of an intervention to improve PFT. Previous work has shown that this approach can be effective, and this is discussed in detail in Section 4.9.1. Given the close association between hopelessness and risk for suicide and self-harm in a range of patient groups including psychosis, interventions to improve PFT could be an important clinical route for the reduction of suicide risk in first episode psychosis.

4.3 Future-directed thinking in individuals with first episode psychosis and community controls

This study aimed to utilise the FTT to compare the future-directed thinking of individuals in the early stages of psychosis with that of matched controls. The FTT has been used in a range of patient groups, including people with depression, anxiety, eating disorders, multiple sclerosis, tinnitus and recent DSH, but in people with psychosis it has been used only once before, and not in comparison with controls (Black, 2013). Studies of thinking about the future in psychosis have tended to focus on scene construction, which is the ability to imagine possible future events in detail, in response to cues (D'Argembeau et al., 2008; de Oliveira et al., 2009; Raffard et al., 2010; Raffard et al., 2013). These scenes are then rated for qualities such as specificity, spatial coherence, numbers of objects, presence of people and animals, and emotional content. To my knowledge, no study has compared the ability of patients and controls to generate many future events quickly and with no cues as to content.

A main effect of group was demonstrated in the analysis of both FTT-number and FTT-composite scores, with patients finding it more difficult to think of events of any kind in their future, whether positive or negative. There was no interaction between the number of events generated by patients and controls and the valence of the events. In short, patients had a globally reduced capacity to think about future events of any kind. These results were consistent with Hypothesis 2, which asserted that individuals with first episode psychosis would display reduced PFT in the absence of an increase in NFT. However, whilst a reduction in NFT was not inconsistent with the hypothesis, it was unexpected. In the existing literature on future-directed thinking in individuals with a recent episode of DSH or who are depressed, PFT is consistently reduced whilst NFT is unchanged. As individuals with psychosis are known to be at increased risk of DSH, and in the current sample half had depression scores consistent with the presence of a major depressive episode, it was expected that this pattern would be replicated. Moreover, the current psychosis sample also reported significantly higher levels of hopelessness, which is also associated with reduced PFT and intact NFT.

Previous literature investigating the quality of future-directed thinking specifically in psychosis would initially appear to be consistent with the global impairment in future-directed thinking observed in the current study, as reductions in the quality and specificity of details generated about future events were observed in comparison with controls in three separate studies (D'Argembeau et al., 2008; de Oliveira et al., 2009; Raffard et al., 2010). However, these studies did not distinguish between valences of events, therefore it was not possible to conclude whether the observed reductions were due to an impairment in PFT, NFT, or both. In the only study to report results for positive and negative events separately (Raffard et al., 2013), patients produced

fewer sensory details, contextual details and self- and other-referential details for events of both valences, but showed a greater reduction in the specificity of the events they generated for positive events relative to negative events, compared with controls. Therefore the results of the Raffard et al. 2013 study partly support the current results by demonstrating a reduced ability to think of certain kinds of details about future events of both valences, but are also congruent with previous literature in other patient groups, through demonstrating that specificity of PFT may be more impaired than NFT. It should be remembered that these psychosis-specific studies did not measure the maximum number of events that could be generated, but the characteristics of descriptions given in response to cues. The following discussion considers why psychosis may be associated with a reduced capacity to think about the future generally. It is approached in terms of three broad themes: psychological and psychiatric, neuropsychological, and social.

4.3.1 Psychological and psychiatric considerations

Participants in the psychosis group may have found it more difficult to generate future events of either valence because of the potential experience of positive symptoms during the task. Symptoms such as auditory hallucinations in some participants may have distracted participants from the task of generating events and resulted in a poorer performance. Auditory hallucinations may have also contributed directly to an inability to think of events in the future, particularly positive ones, since they are often highly derogatory or critical in nature and challenge the individual's self-esteem. These types of messages may directly influence future-directed thinking by creating or maintaining a negative view of the self and a sense of reduced prospects for the future. The potential for the experience of positive symptoms distinguishes this

population from those in previous studies employing the FTT, for example depressed and suicidal groups, and may explain why the patterns of future-directed thinking demonstrated here are not in line with those seen in other groups. It was not feasible in this study to measure positive symptoms at the time of testing, but this is something that future work might consider in order to explore their relationship with future-directed thinking.

The work of Birchwood and others on beliefs about illness offers an another explanation for reduced future-directed thinking in psychosis. The Personal Beliefs about Illness Questionnaire (PBIQ) has been used to study perceptions of psychotic illness by sufferers. Domains covered in the questionnaire include beliefs about entrapment, loss, social marginalisation, shame, and control (Birchwood, Jackson, Brunet, Holden, & Barton, 2012). Studies using the PBIQ show that individuals with psychosis have beliefs about their illness that include loss of autonomy, loss of social role, feelings of entrapment, and an expectation that they will occupy lower status roles in the future (Iqbal, Birchwood, Chadwick, & Trower, 2000; Rooke & Birchwood, 1998). Such beliefs and internalised messages about what it means to have psychosis could result in individuals having difficulty imagining what the future will be like, and potentially feeling like they have no future. Consistent with this hypothesis is the work of R. G. White et al. (2007), which showed an association between negative beliefs about illness and hopelessness in schizophrenia. Alternatively, negative beliefs about illness may contribute to a motivational explanation for reduced future-directed thinking, namely, a reluctance to think about the future because of a wish to avoid negative thoughts about what their illness might entail according to their beliefs. For example, sufferers may wish to avoid thinking

about the possibility of relapse, loss of employment or education, loss of status and autonomy, or the breakdown of relationships. Disengaging from the future to achieve protection from such thoughts would have the unwanted side effect of preventing PFT as well as NFT, resulting in an overall reduction in future-directed thinking.

4.3.2 Neuropsychological considerations

The general deficit in future-directed thinking observed in the psychosis group may be a result of their reduced verbal fluency, since the FTT is based on tests of verbal fluency (MacLeod et al., 1993). In support of this explanation, both PFT and NFT were found to be highly correlated with the FAS test. This is contrary to the work of D'Argembeau et al. (2008), who found that verbal fluency was not associated with future thinking, however, the focus in their study was on specificity, rather than number of items generated, which could explain the discrepancy. Performance on the FAS in previous research has not tended to differ between groups of controls and samples of individuals with DSH (MacLeod, Pankhania, et al., 1997; MacLeod, Tata, Kentish, & Jacobsen, 1997; O'Connor, Connery, & Cheyne, 2000) or with depression or anxiety (MacLeod & Salaminiou, 2001). However, cognitive deficits in psychosis are well established (Heinrichs & Zakzanis, 1998) and therefore this result is not wholly surprising. It is important, then, that controlling for total FAS score in the analysis of the number of items generated left the main effect of group intact, suggesting that there was a residual deficit in future-directed thinking that was independent of verbal fluency. Thus, it seemed that an inherent difficulty in generating words was not the sole reason for patients' difficulties in thinking of future events, though due to its high correlation with scores on both positively- and negatively-valenced trials it is likely to have been a contributing factor. Controlling

for FAS score did eliminate the main effect of group on the composite scores of the FTT, which combined number of events generated with mean likelihood and feelings ratings for each. This was a surprising result because it was not expected that FAS score would be related to any variables other than number of items. One potential explanation for this is the fact that the covariance approach is unsuitable for use with groups that differ significantly on the covariate; this is discussed further in the Limitations section.

Deficits in memory may also play a crucial part in the reduction in future thinking observed in this study. The generation of events that might happen to oneself and the clarity with which a person can imagine these events has been shown to be dependent on autobiographical memory: the ability to recall events from the past (Schacter, Addis, & Buckner, 2007). This is supported by neurobiological studies showing that similar neural processes are involved in both mental tasks (Schacter & Addis, 2007). This link has been demonstrated in people who are suicidal (Williams et al., 1996), with the memories and future events generated by suicidal participants being more general in nature. More recently it has been shown that people with psychosis have impaired and over-general autobiographical memory in the absence of mood disturbance (de Oliveira et al., 2009; Raffard et al., 2010; Wood, Brewin, & McLeod, 2006), and that this is indeed associated with an impairment in ability to generate events in the future (D'Argembeau et al., 2008). Thus a reduction in autobiographical memory in individuals with first episode psychosis may explain their impaired ability to generate future events. It is important to note that as described previously, imageability tasks require the generation and elaboration of limited numbers of events in response to cues rather than fast production of multiple events with minimal cues.

Nevertheless, both tasks require consideration of the future, therefore autobiographical memory is likely to have a bearing on both.

It is well established that individuals with schizophrenia exhibit structural and functional brain differences in comparison with matched controls (Gur, Keshavan, & Lawrie, 2007; McCarley et al., 1999; Shenton, Dickey, Frumin, & McCarley, 2001; Steen, Mull, McClure, Hamer, & Lieberman, 2006), and that these are associated with a variety of cognitive deficits (Driesen et al., 2008; Honey et al., 2005; Potkin et al., 2009; Volz et al., 1999). Thus it is possible that the deficit in future-directed thinking observed in the current study is underpinned by structural and functional abnormalities, perhaps similar to those that are seen to be associated with deficits in verbal fluency such as reduced frontal activation, more bilateral activation in Broca's area, and reduced anterior cingulate cortical activation (Boksman et al., 2005; Curtis et al., 1998; Fu et al., 2005; Weiss et al., 2004).

A detailed discussion of the neuroanatomy of cognitive deficits in the psychotic disorders is beyond the scope of this thesis, but one study (Eack, George, Prasad, & Keshavan, 2008) is notable because of its specific consideration of a phenomenon related to future-directed thinking: foresight. Foresight concerns the ability to foresee the consequences of one's actions, and is therefore arguably similar to the ability to predict events in one's future. Therefore, it may give an indication of the kinds of neuroanatomical areas that may contribute to deficits in future-directed thinking. Eack et al. investigated individuals in the early stages of schizophrenia, and found that better foresight was most strongly associated with an increased density of grey matter in the right orbitofrontal / ventromedial prefrontal cortex. This suggests that poorer

foresight may be associated with reductions in grey matter in this region. However, this study did not include a comparison group, therefore it is not possible to conclude that the reduced foresight observed in the study sample was associated with changes in this area of the brain. A repetition of this study with a comparison group would help to clarify this issue.

4.3.3 Social considerations

Reduced future-directed thinking in psychosis may be associated with the impact of being in the care of severe mental health services. A high level of support is provided by early intervention teams, including involvement from a care coordinator, a psychiatrist, possibly a psychologist, and frequently a support or vocational worker. Whilst demonstrably helpful to recovery, it is possible that this level of support and intervention contributes to a reduction in individuals' sense of agency over their future. The timing of the onset of psychosis is also a potential contributing factor. Psychosis tends to occur in late adolescence and the early twenties: a time in an individual's life when they are beginning to establish their independence and think about their hopes for the future. They may have been developing ideas about going to university or getting a job, having a career, and moving out of home. The onset of psychosis is highly disruptive to the lives of sufferers, and is likely to produce a feeling that these plans must be put on hold until the individual has recovered from the illness. This is supported by the current results, which show that the group difference between the number of events generated by patients and controls was larger for the period of 1 year than for the period of 5-10 years. Patients may feel that the next 12 months is an uncertain time in the course of their recovery, and may wish to avoid making plans for this period. However, the period of 5-10 years may feel more

hopeful, as patients may feel they can reasonably expect full recovery within that time, and a return to typical activities and life events (such as marriage, children, having a job).

Stigma provides a further potential explanation for reduced future-directed thinking in psychosis, in particular PFT. Stigma is defined by the *Oxford English Dictionary* as "a mark of disgrace or infamy; a sign of severe censure or condemnation" (2014). More sophisticated definitions of the stigma concept as applied to human experience require the convergence of several factors for the presence of stigma. For example, in Link and Phelan's 2001 conceptualisation stigma exists when "elements of labelling, stereotyping, separation, status loss, and discrimination co-occur in a power situation that allows the components of stigma to unfold." (Link & Phelan, 2001, p. 367). Stigma in mental health has been shown to result in the loss of opportunities including for employment, the experience of social exclusion, increased poverty and homelessness, poor living conditions, poorer health outcomes, and verbal abuse (Angermeyer, Beck, Dietrich, & Holzinger, 2004; Kelly, 2005). Stigma has also been shown to be predictive of future low self-esteem in people diagnosed with mental health disorders (41% of which were psychotic disorders; Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001) and poorer overall recovery prospects.

With the stigma associated with mental illness being evident in many aspects of life (Lasalvia et al., 2014) it is highly likely that the expectation of stigma and discrimination from others may influence sufferers' views about their future. A study of individuals with psychosis by Angermeyer et al. (2004) demonstrated that individuals with mental illness expect negative reactions from others, particularly

regarding access to work, and suggested that patients may avoid situations in which they expect to experience stigma. For example, they may avoid applying for jobs on the basis that they may experience stigma or discrimination during the process. Recent work supports this, showing that anticipated discrimination in individuals with psychosis leads individuals to avoid seeking close relationships and looking for work (Lasalvia et al., 2014). The experience of stigma may also result in these attitudes being internalised and impacting on the way that individuals with psychosis perceive themselves and their future. One study (Acosta, Aguilar, Cejas, & Gracia, 2013) showed that individuals with schizophrenia felt their illness was a judgement on them, and that this showed strong associations with hopelessness. This work supports the hypothesis that stigma is linked with hopelessness, and therefore could be responsible for the decrease in future-directed thinking observed in this study.

Group differences in employment status in this study approached significance, and it is possible that this contributed to the observed group differences in future-directed thinking. As well as financial reward, employment provides a social identity, status, and a sense of involvement, and has been shown to correlate with positive outcomes such as improved social functioning, lower symptom levels, better quality of life and increased self-esteem in individuals with schizophrenia (Marwaha & Johnson, 2004). Conversely, unemployment is linked with social exclusion in serious mental illness (Boardman, Grove, Perkins, & Shepherd, 2003). The concepts associated with a lack of employment, then, are closely related to elements of stigma such as loss of status and separation. If, as argued above, stigma is linked with future-directed thinking, this would indicate that unemployment may contribute to a reduced ability to imagine the future in psychosis.

In summary, a wide variety of factors may be responsible for the observed global reduction in future-directed thinking in individuals with first episode psychosis. These include psychological reasons such as beliefs about illness or motivational factors, psychiatric reasons such as the direct effects of symptoms, neuropsychological disturbances including general and specific cognitive impairments, and social factors such as the experience of stigma and the effects of unemployment. The clinical implications of these findings and areas for future research are discussed further in Section 4.9.

4.4 Content of future-directed thinking in first episode psychosis and community controls

There were no a priori hypotheses about differences between patients and controls on the content of their future thinking, so this was a purely exploratory aspect of the study. Previous work has shown a tendency for people with bulimia to show an increase in intrapersonal- and health-related thoughts in both positive and negative conditions (Godley et al., 2001), and a tendency for people with anorexia to show an increase in intrapersonal- and health-related thoughts in the positive condition, and achievement / failure-related future-directed cognitions in the negative conditions (Godley et al., 2001). Another study has examined the content of future-directed thinking in individuals with Multiple Sclerosis (MS), on the basis of whether the items are connected with their illness or not. This study found that individuals with MS and depression were more likely to generate illness-related items than the MS non-depressed group. The current study is the first to investigate the content of future-

directed thinking in psychosis and compare it with that of controls. Moreover, this is one of the first studies to employ a method of coding of future thinking based on a well-validated quality of life scale.

This study demonstrated that patients and controls differed on the number of items they generated concerning relationships with other people, and concerning personal development and understanding. Specifically, patients generated significantly fewer items in each of these categories than controls. Before correction for multiple comparisons these results reached significance in both positively- and negatively-valenced trials, but after correction only the group differences in negatively-valenced trials remained significant. However, as group differences were demonstrated in the same categories in both valences, this increases the confidence that the differences observed in the positively-valenced trials represent real effects and did not occur by chance.

The Relations with Other People category included relations with a significant other or family members, having children and relations with friends. It also included relations with people not falling into these categories where the interaction with another person was the main focus of the item. A reduced ability to generate future events in this category may be connected with negative symptoms. Negative symptoms include a reduction in interest in peer and family relationships and reduced feelings of closeness. In the current study it was noted that individuals with psychosis often reported a decrease in the number of friends they had, and in some cases rifts with family members were described. In some individuals not only did they report having few or no friends, but they expressed no desire to have any when asked. It is

logical that if an individual is less interested and involved in relationships with others then they would expect fewer events involving other people to happen to them in the future, whether looked forward to or otherwise. Interestingly, there was no reduction in the number of recreational and other activities looked forward to in patients compared with controls, which would be expected to associate with avolition and apathy. This suggests that this particular aspect of negative symptomatology may have been less prominent in the current sample.

Reduced future-directed thinking about relationships may be a further product of expectations or experiences of stigma and beliefs about illness. As discussed above, individuals with psychosis tend to expect stigma and discrimination from others, and to be less likely to engage in activities (such as dating) that might expose them to stigmatising experiences. Specific studies have highlighted perceptions by individuals with psychosis that they are rejected or avoided by others (Lasalvia et al., 2014; Schulze & Angermeyer, 2003), which would tend to inhibit expectations of future experiences related to other people. Stigma and beliefs about illness also provide an explanation for a reduction in items generated in the Personal Development and Understanding category, which includes items related to education, work and creativity, understanding, and autonomy. As discussed above, individuals with psychosis perceive and experience reduced opportunities as a result of stigma, and may feel less inclined to pursue these in order to avoid the experience of stigma and discrimination. They also endorse statements consistent with a perceived reduction in autonomy as a result of their illness. It is little wonder, then, that work, autonomy and other aspects of personal development and understanding are anticipated less for the future.

It is interesting to note that whilst the means of each of the other three categories were also lower in the psychosis group than in the controls, the group differences were not significant. This hints that the main source of reduced future thinking in individuals with first episode psychosis may be a reduced capacity to think about future relationships with other people and their future personal development and understanding. Therefore interventions to help improve relations with other people and to plan for one's personal development and autonomy may be of particular help in improving future-directed thinking. It was noted that in both groups far fewer items were generated that coded into the Social, Community and Civic Activities category than any other. Since this was the category in which the non-parametric nature of the data was most problematic, future work may wish to adapt the coding scheme to incorporate items from this category into the other, larger categories.

4.5 The relationship between future-directed thinking and suicidal ideation in individuals with first episode psychosis

This study aimed to replicate the effect demonstrated in numerous previous studies, that a reduction in positive future thinking is associated with an increased risk of suicide. The results showed that neither variables of depression, anxiety or self-reported hopelessness nor FTT-composite scores for either valance were associated with suicidal ideation when used to predict suicide ideation score together. However, when FTT variables alone were used to predict suicidal ideation, NFT was a unique predictor with increased values predicting SSI scores of greater than zero. There was a

tendency for decreased PFT to predict an SSI score of greater than zero, but this trend did not reach significance.

The finding that suicide risk was not significantly associated with a reduction in PFT contradicted Hypothesis 3 and was unexpected, since many studies of people who are suicidal or engage in DSH have pointed towards this relationship (Conaghan & Davidson, 2002; MacLeod, Pankhania, et al., 1997; MacLeod et al., 1993; MacLeod et al., 1998; MacLeod et al., 2004; O'Connor et al., 2008). It was expected that the pattern of future-directed thinking in the psychosis group would be consistent with this, given the increased risk of suicide and high levels of DSH in psychosis. One explanation for this discrepancy is the fact that the studies in the literature have predominantly focused on individuals who have made a suicide attempt very recently, whereas in the current study, the temporal association between testing sessions and a suicide attempt was far weaker, and only 28% of the patients reported a history of suicide attempt. The detection of associations between suicide risk and future-directed thinking was reliant for the most part on the assumed increased risk of suicide in this population, rather than the presence of active suicide risk as evidenced by a recent attempt. Therefore it is logical that the expected effect would be much weaker, and tend not to reach significance. Future studies may wish to address this by using a sample of psychosis patients with a 100% history of suicide attempts, preferably in the recent past, or by using a larger sample in which a weaker effect may be more easily detected.

The association of increased NFT with suicidal ideation was contrary to what was expected, as in previous work reduced PFT has been associated with suicide risk in

the absence of changes in NFT. However, the odds ratio for the association was close to 1, indicating that if representative of a genuine association, the effect was weak. The finding that the association of self-reported hopelessness with suicide risk did not reach significance was also unexpected, since this has been a consistent finding demonstrated in a variety of studies over the past 40 years (Beck et al., 1985; Kovacs, Beck, & Weissman, 1975; McMillan et al., 2007; Salter & Platt, 1990). The most likely explanation for this anomaly (as well as being influential in the other non-significant effects) is that it was necessary to reduce the measure of suicide risk to a binary variable (zero vs. non-zero), thereby reducing the power of the regression analysis to adequately model variation in suicide risk. Indeed, the model itself did not achieve significance, and explained only 36% of the variation in SSI despite containing five variables, three of which have previously been closely associated with suicide risk.

The high number of zero scores in the patient group were likely to be a result of the screening questions included in the SSI. Most participants were not required to complete all 21 items of the measure due to endorsing statements that scored zero on the screening questions. It was felt that if every participant had been asked to complete all items participants may have been likely to endorse more statements carrying a non-zero score. Future studies may wish to ask all respondents to complete the whole questionnaire in order to introduce more variation in scores. However, this may have ethical implications, as completing a comprehensive suicidal ideation questionnaire may be arduous for respondents who are not at all suicidal.

4.6 The relationship between future-directed thinking and negative symptoms in individuals with first episode psychosis

This study also investigated the relationship between future-directed thinking and the severity of negative symptoms of psychosis. Negative symptoms are one of the most difficult aspects of psychosis to treat (Buchanan, 2007; Buckley & Evans, 2006) and have been shown to predict functional outcome up to 10 years later (Hassan & Taha, 2011; Milev et al., 2005; Ventura et al., 2009; C. White et al., 2009) even in those at high risk for later psychosis (Corcoran et al., 2011), with increased symptom severity predicting worse outcomes. Hypothesis 4 predicted that a reduction in PFT would be associated with increased severity of negative symptoms, and this was supported by the results of the correlation analysis, which showed that severity of negative symptoms was negatively correlated with PFT. Severity of negative symptoms was also positively correlated with anxiety and self-reported hopelessness, though these correlations were not as strong and the association between PFT and SANS was found to be independent of these. It can be concluded from this that a reduction in PFT is independently and uniquely associated with increased severity of negative symptoms in psychosis.

The correlation between self-reported hopelessness and negative symptoms supports earlier work in individuals with chronic schizophrenia (Kao et al., 2012; Lysaker et al., 2008; R. G. White et al., 2007) as well as those in their first episode of psychotic illness (Aguilar et al., 1997). It is interesting to note that the current analysis showed that, whilst correlated, self-reported hopelessness was not predictive of negative symptom severity, whereas reduced PFT was. This is in contrast to the results of

Lysaker et al. (the only one of the aforementioned studies to conduct a regression analysis), who reported that BHS was predictive of negative symptom severity. The discrepancy is likely to be due to increased power in their study due to large sample size (N = 143). However, a potential lack of power in the current regression analysis serves to highlight the implication of the result, which is that reduced PFT may be a stronger predictor of negative symptom severity than global self-reported hopelessness.

It is not possible to conclude from the current results whether negative symptoms are a cause or an effect or reduced PFT in psychosis. However, previous work suggests that they may vary together. A study by Ferguson et al. (2009) employed an intervention to improve well-being in a group of offenders with mental illness, including over 90% with non-affective psychosis. The intervention focused specifically on improvement of goal setting and planning, which have previously been linked with PFT (MacLeod & Conway, 2005). The treatment had the expected result of increasing positive future-directed thinking and well-being, but also reduced negative symptoms of psychosis, suggesting that an ability to plan for and think about the future is connected with negative symptoms. One hypothesis emerging from this evidence, together with the results of the current study, is that negative symptoms may be closely connected with both reduced PFT and inability to plan for the future, which in turn may be important in predicting functional outcome. Further study into the relationships between PFT, negative symptoms and functional outcome could prove important in addressing this hard-to-treat aspect of psychosis and improving outcomes.

4.7 Strengths of the study

4.7.1 Sample

This study involved a novel application of the FTT to investigate future-directed thinking in early psychosis, its correlates, and differences from matched controls. The only other study to investigate FTT in psychosis to my knowledge did not compare future-directed thinking with that of controls (Black, 2013). In this study controls were well matched on age, gender, ethnicity and first language, and the sample included participants from a diverse mix of cultural backgrounds, increasing the generalizability of the study. The use of a first episode psychosis sample reduced the potential effects of illness chronicity in what some have argued may be a degenerative disorder (Rund, 2009).

4.7.2 Measures and protocol

The measures used in this study have been shown to have good reliability and are well validated. The data collected in the current study had a high level of internal consistency (Cronbach's alpha > .9) in most cases. The only exceptions were the CDSS and the SANS, which had acceptable levels of internal consistency (Cronbach's alpha > .7; Field, 2009, Chapter 17). The protocol of this study was relatively short, which may have helped patients and controls alike to maintain focus and interest for the duration. Patient participants were seen in their usual team base, and whilst a few had not attended that location before, most knew the building well and therefore would not have been distracted from the tasks by unfamiliar surroundings. The protocol was administered by one researcher, and therefore inter-rater variation was not an issue.

4.8 Limitations of the study

4.8.1 Design

This study had a cross-sectional design, and thus is limited in what it can tell us about the causes or consequences of reduced future-directed thinking in first episode psychosis. It is possible to speculate from correlations about the variables that are associated with each other, but longitudinal research and experimental manipulations are needed to draw firm conclusions about causation.

4.8.2 Confounding variables

Groups were seen to differ in verbal fluency, as measured by the FAS test. This is problematic for interpretation of the results due to the high correlation observed between FAS score and FTT variables. An attempt was made to assess the impact of this group difference by employing ANCOVA as well as ANOVA. Whilst the group difference remained intact for number of events generated, it was eliminated in the analysis of composite score. However, the results of these analyses are challenging to interpret because of the intrinsic nature of cognitive deficits such as verbal fluency to the condition of psychosis (Heinrichs & Zakzanis, 1998). It has been argued that where group differences exist in a variable that is characteristic of group membership, covarying for this is inappropriate. This is because the effect of this is to reduce the amount of shared variance between the group and the dependent variable (psychosis and future-directed thinking) and leave a residual group variable that is difficult or impossible to interpret in a meaningful way (Miller & Chapman, 2001). The outcome can either produce more conservative results or even "produce spurious treatment

effects" (Wildt and Ahtola, 1978, cited in Miller & Chapman, 2001). It is for this reason that the main analyses were first undertaken without covarying for FAS, and the results of the ANCOVA were reported as additional analyses for completeness.

Apart from a potentially intrinsic deficit related to general cognitive impairments in psychosis, another possible explanation for group differences in verbal fluency is the association between verbal fluency and education level, which has been demonstrated in previous work (Tombaugh et al., 1999). Patients and controls in this study were shown to differ significantly in education level, which may partly explain the group difference in verbal fluency. The group difference in education level is an important potential confound in the present study which should be addressed in future work. As with verbal fluency it was not considered appropriate for the main analyses to covary for education, particularly since it was measured on an ordinal, rather than continuous scale. A possible solution is to match controls and patients carefully on education to eliminate group differences in education and also potentially remove any associated group differences in verbal fluency.

It is possible that medication affected the performance of patients on the FTT in the psychosis group in a positive way. It has been demonstrated that cognition in a variety of domains can be improved in participants on atypical medications such as clozapine, risperidone and olanzapine (Meltzer & McGurk, 1999). Moreover, a differential effect of the type of antipsychotic medication administered has been shown, with conventional antipsychotics resulting in little or no cognitive improvement, and atypical medications producing improvements in a range of cognitive domains (Davidson et al., 2009). Any positive effects that medication may have had on future-

directed thinking in the current study were likely to be of limited consequence, since large group differences were evident. Nevertheless, future studies may wish to gather information about the type and dosage of medication that participants are taking in order to study this effect more closely. Whilst research has been done on neurocognitive domains such as verbal and non-verbal learning and memory, executive function and language, the effects of antipsychotic medications on future-directed thinking in particular are not known.

An aspect of this study that may be both a strength and a limitation is the fact that the final diagnoses of members of the psychosis group were not known at the time of testing. This is due to the fact that patients recently admitted to the care of early intervention teams undergo a comprehensive assessment over an extended period of time, sometimes several months. At the time of testing final diagnosis would not have been available for all participants and for some psychotic disorders a diagnosis is not possible until symptoms have been present for a certain length of time (at least 6 months for schizophrenia; American Psychiatric Association, 2000). Around half of the psychosis group in this study were tested less than 6 months after their first presentation to services, potentially ruling out the possibility of a final diagnosis of schizophrenia in these individuals at the time of testing. Membership of the patient group in this study was therefore not based on diagnosis, but on the clinical opinion of the treating team (including a psychiatrist) that clinically significant symptoms of psychosis had been present at the time of referral, that is, that a first episode of psychosis had been experienced by the patient.

The investigation of future-directed thinking in psychosis regardless of final diagnosis is not necessarily a drawback, since this study aimed to discover whether the experience of psychotic symptoms, regardless of their origin, affects future-directed thinking. However, it is possible that capacity for future-directed thinking is dependent on diagnosis. For example, individuals with schizoaffective disorder with depressive symptoms may show a different pattern to those with non-affective psychosis. Alternatively individuals with psychosis in the context of a manic episode may show unusually high PFT. It is therefore possible that studying the various psychotic disorders together may have weakened the effects sought. Future studies may wish to gather information about final diagnosis after the completion of the study, in order to investigate any differential effects on future-directed thinking in different psychotic disorders.

4.9 Clinical implications of the study

The association between self-reported hopelessness and reduced PFT demonstrated in this study suggests that the FTT may present a quickly-administered and objective measure of hopelessness in individuals with first episode psychosis. It also indicates that interventions to improve PFT in psychosis (discussed further below) may help to improve hopelessness in this population. Moreover, the association of NFT with suicidal ideation highlights the utility of the FTT in the assessment of suicide risk. It is clinically significant that whilst a self-report measure (the BHS) was not a significant predictor of suicidal ideation, an objective measure (NFT, as measured by the FTT) was. Whilst the effect size was not large, this result indicates that the more objective measure provided by the FTT was better able than self-report measures to

predict suicide risk. As previously discussed, this may be connected with a reduced susceptibility to the effects of social desirability.

This study has shown that individuals with psychosis have a significant deficit in future-directed thinking, both positive and negative, which is particularly pronounced for the medium and long term future. A reduction in PFT in particular was associated with increased severity of negative symptoms, and this information highlights a potentially fruitful avenue for future research into treatment options for negative symptoms and improving outcomes. PFT was shown to be most impaired for the period of the next year, which indicates a particular need for interventions to improve mid-range planning. Whilst suicidal ideation was not seen to be significantly associated with a reduction in PFT in this study, as discussed above it may be that the measure of suicide risk employed was not sensitive enough to detect the expected effects. It remains possible that by improving PFT suicide risk could be reduced through a reduction in hopelessness.

The clinical implications of a reduction in NFT would seem at first to be less serious, indeed, given that increased NFT was associated with increased suicide ideation in this study it would seem wise to avoid improving capacity for NFT in individuals with psychosis. However, it may be that an inability to foresee difficulties or negative events in the future could impact on functional outcome, as it may be harder to plan for future challenges or foresee the potential negative consequences of one's actions (Eack & Keshavan, 2008). It is important to investigate the correlates and consequences of reduced NFT in psychosis and its relationship with suicide risk before drawing firm conclusions, but it is possible that individuals with psychosis

may also benefit from interventions to improve NFT as well as PFT, perhaps through efforts to improve engagement with the future as a whole.

This study has also begun to uncover domains in which individuals with psychosis may particularly struggle to think about the future. Interventions to improve future thinking about relationships with others, and to improve planning for personal development, understanding and autonomy may prove to be effective targets for increasing capacity for future-directed thinking. With these implications in mind, Section 4.9.1 below considers some of the options for intervention.

4.9.1 Interventions for future-directed thinking

Several interventions aimed at increasing positive future thinking have been found to be effective. In one study (Peters, Flink, Boersma, & Linton, 2010) participants were asked to think about (1 minute), write about (15 minutes), and visualise (5 minutes) either their best possible self (positive future thinking condition) or a typical day (control condition). The study found that the positive future thinking task resulted in an increase in positive expectancies in comparison with the control task. There is evidence to suggest that positive self-appraisals may serve as a protective factor against hopelessness in psychosis (Johnson et al., 2010), therefore this intervention has potential for tackling reduced PFT and the risk of suicide in individuals with psychosis.

An intervention to improve goal setting and planning has been found to improve PFT, hopelessness and negative symptoms, alongside its intended effects of improving well-being. The evidence-based intervention, named the GAP programme (MacLeod,

Coates, & Hetherton, 2008) was delivered in a group setting over a period of six weeks to a sample of patients from a forensic rehabilitation facility and covered topics such as well-being, goal selection, planning, visual imaging, and problem solving (Ferguson et al., 2009). At the end of the programme participants reported reduced hopelessness and increased positive future thinking, as well as presenting with fewer negative symptoms of psychosis. Of the 14 individuals in the sample, 13 had a diagnosis of a non-affective psychotic disorder, highlighting the potential of this intervention to be successful in non-forensic psychosis patients. The benefit of the GAP programme is that it is a brief, manualised programme, and therefore with appropriate training could be delivered by a range of healthcare professionals without the need for intensive intervention. Interventions to improve employment in first episode psychosis are already in place in many services, and the integration of goal-setting and planning with vocational work could result in a coherent piece of work centred around future planning.

The concept of positive future-directed thinking is relevant to the recovery model of serious mental illness, in that it emphasises goal setting and planning in order to achieve maximum well-being for sufferers, rather than focusing on symptom management and aiming for complete remission from symptoms. In line with this model, there is potential to bring about an improvement in future-directed thinking through interventions to change negative beliefs about illness. Moreover, interventions to reduce the stigma associated with psychotic illness both in the general public and in individual sufferers may also have an impact on the ways in which patients and the people around them think about their future.

It is important to note that the interventions described above are aimed only at improving PFT, as they are designed for use in populations where only PFT is impaired. However, as this study has also demonstrated deficits in NFT careful consideration would need to be given to the implications of improving PFT and not NFT. It is ethically questionable to treat only one aspect of deficit, and the consequences of having reduced NFT in the context of intact PFT are unknown. One potential consequence of having an improved ability to see positive events in the future in the absence of negative events or drawbacks could be the development of mania in those for whom psychosis occurs in the context of bipolar disorder. Furthermore, as mentioned previously, it is possible that a deficit in NFT is associated with reduced foresight, and thus leaving a deficit in this area may result in continuing functional disability. These matters should be considered before applying interventions to improve PFT.

4.10 Avenues for future research

A number of avenues for future research are suggested by this study. A study incorporating the improvements described in the Limitations section, such as closer matching of controls on education, measurement of positive symptoms and gathering information about medication would help to clarify the sources of deficit in future-directed thinking in psychosis and contribute to an improved understanding of psychosis. Moreover, the use of a group with 100% history of suicide attempts may help to clarify the relationship, if any, between PFT and suicide risk in this group.

A study of future-directed thinking before and after the onset of psychosis would help to clarify the mechanisms behind the reduction in future-directed thinking seen in this population. Such a study would involve administering the FTT to individuals in an *at risk mental state*, following these people over the course of several years, and administering again to people who both transitioned to psychosis and also to those who did not. Any differences in future-directed thinking between the groups would provide more information about (a) whether future-directed thinking may be different in people who transition compared with those who don't, and (b) whether any changes in future-directed thinking can be observed as a result of transition to psychosis. This would help to clarify whether reduced future-directed thinking is a cause or a consequence of psychosis. An extension of this would be to study future-directed thinking in psychosis over time after onset. This would help to clarify whether future-directed thinking it stable over time, and whether any changes in future-directed thinking are associated with clinical symptoms, depression, anxiety or hopelessness. This could also allow for a prospective study of functional outcome, and its relationship to baseline future-directed thinking. An investigation of the effectiveness of interventions to improve PFT in psychosis would also be extremely useful, not only in investigating whether PFT can be improved in this group, but also as another way of finding out whether variables such as hopelessness or negative symptoms vary with changes in PFT. This may help to draw out some of the cause and effect relationships involved.

4.11 Conclusions

This study set out to investigate future-directed thinking in individuals with first episode psychosis, including any differences from matched controls, and the relationships between future-directed thinking and hopelessness, suicide risk and the negative symptoms of psychosis. A link between reduced PFT and self-reported hopelessness was demonstrated, replicating previous work, confirming the validity of the construct of PFT as a component of hopelessness in this patient group, and highlighting the potential of the FTT as a tool in the measurement of hopelessness. In line with existing findings the results indicated that PFT was reduced in first episode psychosis, but in contrast with previous work NFT was also reduced, suggesting a general deficit in future-directed thinking overall in this population. Content analysis indicated that the source of this deficit may be a particularly reduced capacity for anticipating events involving other people, and involving personal development and understanding. Several potential reasons for reduced future-directed thinking in psychosis were hypothesised, including the direct and indirect effects of psychotic symptoms, brain structural or functional abnormalities, and the effects of stigma and discrimination on perception of the future. Interventions to help re-engage patients with their future may be helpful in improving functional outcomes and reducing suicide risk in psychosis, though careful consideration of which aspects of future-directed thinking should be targeted is necessary.

The current results were unable to replicate the result consistently found in previous work that reduced PFT is associated with suicide risk. It was suggested that statistical limitations may have been responsible for this anomaly, but it is also possible that the

results reflected a true lack of association. Increased NFT was found to be associated with suicide risk, which was contrary to the findings of previous work. As this study applied the FTT in a novel population the results may reflect a genuinely different relationship between future-directed thinking and suicide risk in individuals with psychosis compared with other patient groups. Further studies will be needed to clarify this issue using a more sensitive measure of suicide risk. This study also demonstrated that, as hypothesised, reduced PFT is associated with increased severity of the negative symptoms of psychosis. This result is in line with previous work, and it was suggested that a reduced capacity to see positive events in one's future may engender apathy and a lack of motivation.

These results identify potentially fruitful avenues for both further research in this area and interventions for difficult-to-treat aspects of psychosis such as hopelessness and negative symptoms. Interventions for the improvement of PFT have been shown to be effective, and it is possible that, especially if applied in an early intervention context, these may prove useful, drug-free, recovery-based interventions that could substantially improve functional outcomes for individuals with psychosis.

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Appendices

Appendix 1

Letters of ethical approval

from Camberwell St Giles Research Ethics Committee and

Royal Holloway Psychology Departmental Ethics Committee

NHS
Health Research Authority

NRES Committee London - Camberwell St Giles
Bristol Research Ethics Centre
Level 3, Block B
Whitefriars
Lewins Mead
Bristol
BS1 2NT
Telephone: 0117 342 1384
Facsimile: 0117 342 0445

05 July 2013

Dr Emmeline Goodby
Trainee Clinical Psychologist
Camden and Islington NHS Foundation Trust
Department of Psychology
Royal Holloway University of London
Egham
TW20 0EX

Dear Dr Goodby

Study Title:	**A case-control study of future-directed thinking in adults with first episode psychosis.**
REC reference:	**13/LO/0876**
Protocol number:	**N/A**
IRAS project ID:	**125431**

The Research Ethics Committee reviewed the above application at the meeting held on 21 June 2013. Thank you for attending to discuss the application:

1. The Committee wanted to clarify as to why the study was being conducted. The Committee queried what was hoped to be achieved from the study, including the link between thinking into the future and potential risk of suicide

You advised with early psychosis you get a high risk of suicide.

You advised the tool currently used to measure hopelessness is not specific enough. You advised seeing the participant's ability and ways of thinking into the future will help with future possible interventions to help these participants.

You advised this has not been done with this participant group before, but has been done in participant groups such as those with depression.

2. The Committee queried if these types of participants would already know they were at risk of suicide.

You advised not necessarily.

The Committee advised these participants are just going to have a diagnosis and already feel

quite anxious and vulnerable, and then are told they are also at risk of suicide. The Committee highlighted to you this would be potentially upsetting to the participant.

You felt the risk of suicide may have been too strong in the PIS, and will amend the PIS to soften this.

3. The Committee queried what you were going to do and what procedures were in place if a participant were to become distressed during the study.

You advised the order of the questions had been considered, and there are clinical staff close by if a participant were to become distressed. You advised participants will be left with a contact.

4. The Committee asked about the role and availability of the duty clinician.

You advised no specific arrangements are in place as of yet, but will ensure this will be done before the study starts.

5. The Committee queried as to why the GP was being informed.

You felt this was out of courtesy.

The Committee advised you this was not seen to be necessary.

6. The Committee queried if you were excluding adults who lack capacity and how capacity will be assessed.

You advised adults lacking capacity would be excluded from the study. You explained the participant will be asked about their understanding of the PIS to assess their capacity.

The Committee requested you should prepare answers if the participant were to query 'why' they could not partake in the study.

7. The Committee requested clarification as to where the interviews for the community volunteers were taking place.

You advised this would be done in local community centres or libraries, in private rooms where you would not be interrupted.

The Committee expressed concerns over a study using these types of participants at sites such as a library. The Committee queried how you were going to manage any participant distress in that environment appropriately. The Committee requested the library site is reconsidered.

8. The Committee wanted clarification as to why the prize draw was being offered to community volunteers and not all participants.

You advised the Committee this was in attempt to save on costs.

The Committee requested you think about including all participants in the prize draw.

9. The Committee requested the PIS should state the project is an educational project.

You agreed to amend.

10. The Committee wanted to clarify any insurance excess would not fall on any participant.

You assured the Committee this would never be the case.

11. The Committee wanted to clarify why the study was not being published on a public database.

You advised you checked this with your academic supervisor, but will be happy to look further into this.

12. The Committee queried what would happen if the participant were to commit suicide.

You advised there is no plan to then follow this up. You advised this risk is very personal and it is not possible to predict individuals, only the groups.

13. The Committee discussed A40 of the IRAS form and felt it was unclear who would have access to the participant's data, and this should be on the PIS and the consent form.

You advised the Committee they are only looking at the medical records to get address and contact details and nothing else. You advised the Committee the participant will see the PIS before they access the medical records.

The Committee felt if only contact details were being taken this could be done using the database rather than accessing personal medical records.

You advised the wrong terminology may have been used, and will only need contact details and therefore agree you do not need to access personal medical records.

Documents reviewed

The documents reviewed at the meeting were:

Document	*Version*	*Date*
Advertisement	1. Community Volunteer Publicity Poster	20 May 2013
Covering Letter		20 May 2013
Evidence of insurance or indemnity	Ltr from Zurich	01 August 2012
GP/Consultant Information Sheets	1	20 May 2013
Investigator CV		
Letter of invitation to participant	1	02 May 2013

Other: Supervisor CV	A K MacLeod	
Participant Consent Form	1	20 May 2013
Participant Information Sheet	1. Patients	20 May 2013
Participant Information Sheet	1. Community Volunteer	20 May 2013
Protocol	1	20 May 2013
REC application	3.5	22 May 2013

Provisional opinion

The Committee is unable to give an ethical opinion on the basis of the information and documentation received so far. Before confirming its opinion, the Committee requests that you provide the further information set out below.

Authority to consider your response and to confirm the Committee's final opinion has been delegated to the Chair and Jennifer Bostock.

Further information or clarification required

1. Participant Information Sheet requested changes:

- The PIS titles need standardizing and the following link to be used for guidance: http://www.nres.nhs.uk/applications/guidance/consent-guidance-and-forms/
The title 'What will I need to do?' needs to be softened to inform the participants they wouldn't specifically need to do anything to join the study.

- The risk of suicide to be 'softened'.

- It should state the project is an educational project.

2. The validated questionnaires to be submitted for review.

3. The consent form to be amended to have a section for informing the GP, and GP's contacted if felt appropriate.

4. The researcher should prepare for answers if the participant were to query 'why' they could not partake in the study if they were felt not to have capacity to consent to take part..

5. The Committee expressed concern over a library as a potential site, and felt this was not appropriate with the nature of this study and requested they are not used for potential sites.

6. The prize draw to be further considered for all participants.

7. The researcher should check if the study could be published on a public database.

8. The researcher should clarify in writing medical records would not be used.

NHS
Health Research Authority

If you would find it helpful to discuss any of the matters raised above or seek further clarification from a member of the Committee, you are welcome to contact Christine Hobson, Committee Co-ordinator.

When submitting your response to the Committee, please send revised documentation where appropriate underlining or otherwise highlighting the changes you have made and giving revised version numbers and dates.

If the Committee has asked for clarification or changes to any answers given in the application form, please do not submit a revised copy of the application form; these can be addressed in a covering letter to the REC.

The Committee will confirm the final ethical opinion within a maximum of 60 days from the date of initial receipt of the application, excluding the time taken by you to respond fully to the above points. A response should be submitted by no later than 04 August 2013.

Membership of the Committee

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

There were no declarations of interest.

Statement of compliance

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

13/LO/0876	**Please quote this number on all correspondence**

Yours sincerely

pp.

Mr John Richardson
Chair

Email: nrescommittee.london-camberwellstgiles@nhs.net

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments.*

Copy to: *John Wann, Royal Holloway University of London*

A Research Ethics Committee established by the Health Research Authority

NHS
Health Research Authority

NRES Committee London - Camberwell St Giles

Attendance at Committee meeting on 21 June 2013

Committee Members:

Name	*Profession*	*Present*
Dr Ana Bajo	Research Psychologist	Yes
Mrs Jennifer Bostock	Philosopher of Psychiatry	Yes
Prof Nelarine Cornelius	Prof. of Human Resource Management & Organisation Studies	No
Ms Biddy Gillman	Retired Biology Teacher/ Head of year 12	Yes
Ms Sally Gordon Boyd	Medical Ethicist	Yes
Ms Alison Higgs	Lecturer - Social Work, Faculty of HSC	No
Professor Veena Kumari	Professor of Experimental Psychology	Yes
Dr Alison Macrae	Solicitor	No
Mr John Richardson - Chair	Retired Director of COREC: Ecumenical Officer for Churches Together in South London	Yes
Mrs Hemawtee Sreeneebus	Clinical Research Nurse	Yes
Mr Evan Stone QC	Retired Queen's Counsel	Yes
Dr Mark Tanner	Consultant Psychiatrist	Yes
Mr James Uwalaka	Deputy Research Study Manager	Yes
Mr Thomas Walters	Clinical Research Nurse	No
Mr Jonathan Watkins	Independent Social Worker	Yes

Also in attendance:

Name	*Position (or reason for attending)*
Miss Christine Hobson	Coordinator
Mr Nicolas Nicolaou	Consultant Paediatric Orthopaedic Surgeon (Observer)

NHS
Health Research Authority
NRES Committee London - Camberwell St Giles
Bristol Research Ethics Centre
Level 3, Block B
Whitefriars
Lewins Mead
Bristol
BS1 2NT

Telephone: 0117 342 1334

13 August 2013

Dr Emmeline Goodby
Trainee Clinical Psychologist
Camden and Islington NHS Foundation Trust
Department of Psychology
Royal Holloway University of London
Egham
TW20 0EX

Dear Dr Goodby

Study title:	**A case-control study of future-directed thinking in adults with first episode psychosis.**
REC reference:	**13/LO/0876**
Protocol number:	**N/A**
IRAS project ID:	**125431**

Thank you for your letter of 04 August 2013, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered in correspondence by a Sub-Committee of the REC. A list of the sub-committee members is attached.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the Co-ordinator Mrs Ruth Avery, nrescommittee-london.camberwellstgiles@nhs.net.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, 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).

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 http://www.rdforum.nhs.uk.

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.

It is the 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).

Approved documents

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

Document	*Version*	*Date*
Advertisement	1. Community Volunteer Publicity Poster	20 May 2013
Covering Letter		20 May 2013
Covering Letter		04 August 2013
Evidence of insurance or indemnity	Ltr from Zurich	01 August 2012
GP/Consultant Information Sheets	1	20 May 2013
Investigator CV		
Letter of invitation to participant	1	02 May 2013
Other: Supervisor CV	A K MacLeod	

Participant Consent Form	1	20 May 2013
Participant Consent Form	2	04 August 2013
Participant Information Sheet: Community volunteer	2	04 August 2013
Participant Information Sheet: Patient	2	04 August 2013
Protocol	1	20 May 2013
Questionnaire: Calgary depression scale for schizophrenia		
Questionnaire: Generalised anxiety disorder questionnaire		
Questionnaire: Beck hopelessness scale		
Questionnaire: Beck scale for suicide ideation		
Questionnaire: Scale for the assessment of negative symptoms		
Questionnaire: Patient health questionnaire - 9		
REC application	3.5	22 May 2013
Response to Request for Further Information		04 August 2013

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees 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.

Feedback

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

13/LO/0876	**Please quote this number on all correspondence**

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

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

Yours sincerely

Mr John Richardson
Chair

Email:nrescommittee-london.camberwellstgiles@nhs.net

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"

Copy to: *John Wann, Royal Holloway University of London*
West London Mental Health NHS Trust

NRES Committee London - Camberwell St Giles

Attendance at Sub-Committee of the REC

Name	*Profession*	*Capacity*
Mrs Jennifer Bostock	Philosopher of Psychiatry	Lay
Mr John Richardson	Retired Director of COREC; Ecumenical Officer for Churches Together in South London	Lay

Also in attendance:

Name	*Position (or reason for attending)*
Mrs Ruth Avery	REC Coordinator

NHS
Health Research Authority

NRES Committee London - Camberwell St Giles

Bristol Research Ethics Centre
Level 3, Block B
Whitefriars
Lewins Mead
Bristol
BS1 2NT

Tel: 0117 342 1331
Fax: 0117 342 0445

02 September 2013

Dr Emmeline Goodby
Trainee Clinical Psychologist
Camden and Islington NHS Foundation Trust
Department of Psychology
Royal Holloway University of London
Egham
TW20 0EX

Dear Dr Goodby

Study title:	**A case-control study of future-directed thinking in adults with first episode psychosis.**
REC reference:	**13/LO/0876**
Protocol number:	**N/A**
Amendment number:	**Minor Amendment 1**
Amendment date:	**16 August 2013**
IRAS project ID:	**125431**

Thank you for your letter of 16 August 2013, notifying the Committee of the above amendment.

The Committee does not consider this to be a "substantial amendment" as defined in the Standard Operating Procedures for Research Ethics Committees. The amendment does not therefore require an ethical opinion from the Committee and may be implemented immediately, provided that it does not affect the approval for the research given by the R&D office for the relevant NHS care organisation.

Documents received

The documents received were as follows:

Document	Version	Date
Letter of invitation to participant	2	04 August 2013
GP/Consultant Information Sheets	2	04 August 2013
Notification of a Minor Amendment		16 August 2013

Statement of compliance

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

13/LO/0876:	**Please quote this number on all correspondence**

Yours sincerely

T. Fairman

Mr Thomas Fairman
Committee Co-ordinator

E-mail: nrescommittee.southcentral-oxforda@nhs.net

Copy to: *West London Mental Health NHS Trust*
John Wann, Royal Holloway University of London

NHS
Health Research Authority

NRES Committee London - Camberwell St Giles
Bristol Research Ethics Centre
Level 3, Block B
Whitefriars
Lewins Mead
Bristol
BS1 2NT
Tel: 0117 3421391

03 February 2014

Dr Emmeline Goodby
Trainee Clinical Psychologist
Camden and Islington NHS Foundation Trust
Department of Psychology
Royal Holloway University of London
Egham
TW20 0EX

Dear Dr Goodby

Study title:	**A case-control study of future-directed thinking in adults with first episode psychosis.**
REC reference:	**13/LO/0876**
Protocol number:	**N/A**
Amendment number:	**1**
Amendment date:	**27 January 2014**
IRAS project ID:	**125431**

The above amendment was by the Sub-Committee in correspondence.

Ethical opinion

There were no outstanding ethical issues.

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Notice of Substantial Amendment (non-CTIMPs)		27 January 2014
Community Volunteer Print Media Advertisement	1	23 January 2014

Community Volunteer Publicity Leaflet	1	23 January 2014
Community Volunteer Publicity Poster	2	23 January 2014

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

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

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

13/LO/0876:	**Please quote this number on all correspondence**

Yours sincerely

EA Hearn

pp

Mr John Richardson
Chair

E-mail: nrescommittee.london-camberwellstgiles@nhs.net

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *West London Mental Health NHS Trust*
John Wann, Royal Holloway University of London

NRES Committee London - Camberwell St Giles

Attendance at Sub-Committee of the REC meeting on 07 February 2014

Name	*Profession*	*Capacity*
Mrs Jennifer Bostock	Philosopher of Psychiatry	Lay
Ms Sally Gordon Boyd	Medical Ethicist	Lay
Mr John Richardson (chair)	Retired Director of COREC; Ecumenical Officer for Churches Together in South London	Lay

Also in attendance:

Name	*Position (or reason for attending)*
Mr Tom Fairman	REC Manager

Gmail by Google

Emmy Goodby <emmy.goodby@gmail.com>

Ref: 2013/078R1 Ethics Form Approved

Psychology-Webmaster@rhul.ac.uk <Psychology-Webmaster@rhul.ac.uk> 14 October 2013 19:11
To: nwjt080@rhul.ac.uk, a.macleod@rhul.ac.uk
Cc: PSY-EthicsAdmin@rhul.ac.uk, Patrick.Leman@rhul.ac.uk

Application Details:

Applicant Name: **Emmeline Goodby**

Application title: **Future-Directed Thinking in First Episode Psychosis**

Appendix 2

Letters of Research and Development approval

from the four Trusts from which patients were recruited

noclor NHS
Research Support Service

Bedford House, 3rd Floor
125-133 Camden High Street
London, NW1 7JR

Tel: 020 3317 3045
Fax: 020 7685 5830/5788
www.noclor.nhs.uk

17 March 2014

Emmeline Goodby
Department of Psychology
Royal Holloway University of London
Egham
TW20 0EX

Dear Emmeline Goodby

I am pleased to confirm that the following study has now received R&D approval, and you may now start your research in **the trust(s) identified below**:

Study Title: Future Directed Thinking in First Episode Psychosis
R&D reference: 125431
REC reference: 13/LO/0876

NHS Permission is based on the REC favourable opinion given on 13 August 2013

Name of the trust	Name of current PI/LC	Date of permission issue(d)
Barnet Enfield & Haringey NHS Mental Health Trust	Stephen Godfrey	17 March 2014

If any information on this document is altered after the date of issue, this document will be deemed INVALID

Specific Conditions of Permission (if applicable)

If any information on this document is altered after the date of issue, this document will be deemed INVALID

Yours sincerely,

Pushpsen Joshi
Research Operations Manager

Cc: Principle Investigator(s)/Local Collaborator(s), Sponsor Contact

noclor NHS
Research Support Service

Bedford House, 3rd Floor
125-133 Camden High Street
London, NW1 7JR

Tel: 020 3317 3045
Fax: 020 7685 5830/5788
www.noclor.nhs.uk

May I take this opportunity to remind you that during the course of your research you will be expected to ensure the following:

- **Patient contact:** only trained or supervised researchers who hold the appropriate Trust/NHS contract (honorary or full) with each Trust are allowed contact with that Trust's patients. If any researcher on the study does not hold a contract please contact the R&D office as soon as possible.
- **Informed consent:** original signed consent forms must be kept on file. A copy of the consent form must also be placed in the patient's notes. Research projects are subject to random audit by a member of the R&D office who will ask to see all original signed consent forms.
- **Data protection:** measures must be taken to ensure that patient data is kept confidential in accordance with the Data Protection Act 1998
- **Health & safety:** all local health & safety regulations where the research is being conducted must be adhered to.
- **Serious Adverse events:** adverse events or suspected misconduct should be reported to the R&D office and the Research Ethics Committee.
- **Project update:** you will be sent a project update form at regular intervals. Please complete the form and return it to the R&D office.
- **Publications:** it is essential that you inform the R&D office about any publications which result from your research.
- **Ethics:** R&D approval is based on the conditions set out in the favourable opinion letter from the Research Ethics Committee. If during the lifetime of your research project, you wish to make a revision or amendment to your original submission, please contact both the Research Ethics Committee and R&D Office as soon as possible.
- **Monthly / Annually Progress report:** you are required to provide us and the Research Ethics Committee with a progress report and end of project report as part of the research governance guidance.
- **Recruitment data:** if your study is a portfolio study, you are required to upload the recruitment data on a monthly basis in the website: http://www.crncc.nihr.ac.uk/about_us/processes/portfolio/p_recruitment/
- **Amendments:** if your study requires an amendment, you will need to contact the Research Ethics Committee. Once they have responded, and confirmed what kind of amendment it will be defined as, please contact the R&D office and we will arrange R&D approval for the amendment.
- **Audits:** each year, noclor select 10% of the studies from each service we have approved to be audited. You will be contacted by the R&D office if your study is selected for audit. A member of the governance team will request you complete an audit monitoring form before arranging a meeting to discuss your study.

Cambridgeshire and Peterborough NHS
NHS Foundation Trust

Understanding children, young people and families

Research and Development Department

Joint Research Office
Box 277
Addenbrooke's Hospital
Hills Road
Cambridge
CB2 0QQ

Direct Dial: 01223 596472 ext 6472
E-mail: beth.muldrew@cpft.nhs.uk
www.cpft.nhs.uk

10 October 2013

R&D Ref: M00560

Dr Jesus Perez
Cambridgeshire and Peterborough
NHS Foundation Trust
Cameo South, Block 7
Ida Darwin
Cambridge CB21 5EE

Dear Dr Perez

Re: 13/LO/0876 Future- Directed Thinking in First Episode Psychosis

In accordance with the Department of Health's Research Governance Framework for Health and Social Care, all research projects taking place within the Trust must receive a favourable opinion from an ethics committee and approval from the Department of Research and Development (R&D) prior to commencement.

R&D have reviewed the documentation submitted for this project, and has undertaken a **site specific assessment** based on the information provided in the SSI form, and I am pleased to inform you that we have no objection to the research proceeding within CPFT.

Sponsor: Royal Holloway, University of London

Funder: Royal Holloway, University of London

End date: 31/05/2014

Protocol: Version 1.0 dated 13 May 2013 (Including minor amendment 1)

Conditions of Trust Approval:

- The project must follow the agreed protocol and be conducted in accordance with all Trust Policies and Procedures especially those relating to research and data management. Any mobile devices used must also comply with Trust policies and procedures for encryption.

- You and your research team must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice and the Data Protection Act 1998 and are aware of your responsibilities in relation to the Human Tissue Act 2004, Good Clinical Practice, the NHS Research Governance Framework for Health

and Social Care, Second Edition April 2005 and any further legislation released during the time of this study.

- Members of the research team must have appropriate substantive or honorary contracts with the Trust prior to the study commencing. Any additional researchers who join the study at a later stage must also hold a suitable contract.

- You and your research team must provide to R&D, as soon as available, the date of first patient first visit.

If the project is a clinical trial under the European Union Clinical Trials Directive the following must also be complied with:

- the EU Directive on Clinical Trials (Directive 2001/20/EC) and UK's implementation of the Directive: The Medicines for Human Use (Clinical Trials) Regulations 2004;

- the EU Directive on Principles and Guidelines for Good Clinical Practice (EU Commission Directive 2005/28/EC); and UK's implementation of the Directive: The Medicines for Human Use (Clinical Trials) Amendment Regulations 2006;

Amendments
Please ensure that you submit a copy of any amendments made to this study to the R&D Department.

Annual Report
It is obligatory that an annual report is submitted by the Chief Investigator to the research ethics committee, and we ask that a copy is sent to the R&D Department. The yearly period commences from the date of receiving a favourable opinion from the ethics committee.

Please refer to our website www.cpft.nhs.uk for all information relating to R&D including honorary contract forms, policies and procedures and data protection.

Should you require any further information please do not hesitate to contact us.

Yours sincerely

Stephen Kelleher
Senior R&D Manager

Cc Prof John Wann, Head of Psychology, Royal Holloway – University of London

South West London and St George's NHS
Mental Health NHS Trust

Human Resources Directorate

Date: 25th September 2013

Dear Emmeline Goodby

Letter of Access for Research

As an existing NHS employee you do not require an additional honorary research contract with this NHS organisation. We are satisfied that the research activities that you will undertake in this NHS organisation are commensurate with the activities you undertake for your employer. Your employer is responsible for ensuring such checks as are necessary have been carried out. This letter confirms your right of access to conduct research through South West London & St George's Mental Health NHS Trust for the purpose and on the terms and conditions set out below. This right of access commences on 25th September 2013 ends on 18th September 2014 unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this NHS organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

You are considered to be a legal visitor to South West London & St George's Mental Health NHS Trust premises. You are not entitled to any form of payment or access to other benefits provided by this organisation to employees and this letter does not give rise to any other relationship between you and this NHS organisation, in particular that of an employee.

While undertaking research through South West London & St George's Mental Health NHS Trust you will remain accountable to your employer, East London NHS Foundation Trust but you are required to follow the reasonable instructions of your nominated manager in this NHS organisation or those given on her/his behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by this NHS organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with South West London & St George's Mental Health NHS Trust policies and procedures, which are available to you upon request, and the Research Governance Framework.

You are required to co-operate with South West London & St George's Mental Health NHS Trust in discharging its duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on South West London & St George's Mental Health NHS Trust premises. Although you are not a contract holder, you must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of a contract holder and you must act appropriately, responsibly and professionally at all times.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

South West London & St George's Mental Health NHS Trust will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against you and/or your substantive employer.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that this NHS organisation accepts no responsibility for damage to or loss of personal property.

We may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of this NHS organisation or if you are convicted of any criminal offence. Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you

If your circumstances change in relation to your health, criminal record, professional registration or any other aspect that may impact on your suitability to conduct research, or your role in research changes, you must inform the NHS organisation that employs you through its normal procedures. You must also inform your nominated manager in this NHS organisation.

Yours sincerely

Daran Golby
Recruitment & Workforce Development – South West London & St George's Mental Health NHS Trust

CC: Enitan Eboda - Research & Development office – Division of Mental Health, St. Georges', University of London 6th Floor, Hunter Wing, Cranmer Terrace, London SW17 0RE

West London Mental Health NHS
NHS Trust

We care to make the difference

Dr Emmeline Goodby
Trainee Clinical Psychologist
Department of Psychology
Royal Holloway, University of London
Egham
Surrey TW20 0EX

West London Mental Health Trust R&D Office
Medway Lodge
K Block 1st Floor
St Bernard's Wing
Uxbridge Road
Middlesex UB1 3EU

Tel: 020 8354 8738
Fax: 020 8354 8733
Email: rd.office@wlmht.nhs.uk

15 January 2014

Dear Dr Goodby

Re: Future-directed thinking in first episode psychosis
LREC Ref: 13/LO/0876
R&D Reference Number: GOOEW1301

I am pleased to confirm that the above study has now received a full R&D approval, and you may continue your research in **West London Mental Health Trust**. May I take this opportunity to remind you that during the course of your research you will be expected to ensure the following:

- **Patient contact:** only trained or supervised researchers who hold the appropriate Trust/NHS contract (honorary or full) with each Trust are allowed contact with that Trust's patients. If any researcher on the study does not hold a contract please contact the R&D office as soon as possible.
- **Informed consent:** original signed consent forms must be kept on file. A copy of the consent form must also be placed in the patient's notes. Research projects are subject to random audit by a member of the R&D office who will ask to see all original signed consent forms.
- **Data protection:** measures must be taken to ensure that patient data is kept confidential in accordance with the Data Protection Act 1998
- **Health & safety:** all local health & safety regulations where the research is being conducted must be adhered to.
- **Serious Adverse events:** adverse events or suspected misconduct should be reported to the R&D office and the Research Ethics Committee.
- **Project update:** you will be sent a project update form at regular intervals. Please complete the form and return it to the R&D office.
- **Publications:** it is essential that you inform the R&D office about any publications which result from your research.
- **Ethics:** R&D approval is based on the conditions set out in the favourable opinion letter from the Research Ethics Committee. If during the lifetime of your research project, you wish to make a revision or amendment to your original submission, please contact both the Research Ethics Committee and R&D Office as soon as possible.
- **Monthly/Annual Progress report:** you are required to provide us and the Research Ethics Committee with a progress report and end of project report as part of the research governance guidance.
- **Recruitment data:** if your study is a portfolio study, you are required to upload the recruitment data on a monthly basis in the website: http://www.crncc.nihr.ac.uk/about_us/processes/portfolio/p_recruitment/
- **Amendments:** if your study requires an amendment, you will need to contact the Research Ethics Committee. Once they have responded, and confirmed what kind of amendment it will be defined as, please contact the R&D office and we will arrange R&D approval for the amendment.
- **Audits:** each year, West London Mental Health Trust selects 10% of the studies from each service we have approved to be audited. You will be contacted by the R&D office if your study is selected

for audit. A member of the governance team will request you complete an audit monitoring form before arranging a meeting to discuss your study.

We would like to wish you every success with your project.

Yours sincerely

Maria Tsappis

Maria Tsappis
Research Governance Officer

Trust Headquarters, West London Mental Health NHS Trust, Uxbridge Road, Southall, UB1 3EU
Tel: 020 8354 8354 | Web: www.wlmht.nhs.uk

Appendix 3

Information sheet for patient participants

Doctoral Course in Clinical Psychology
Department of Psychology

Participant Information Sheet – Patient Volunteer

Future-Directed Thinking in First Episode Psychosis

You are being invited to take part in a research study. Before you decide whether or not to take part it is important for you to understand why the research is being done and what it will involve. Please read the following information and discuss it with other people if you wish. We encourage you to ask questions if anything is not clear or if you would like more information. Contact details are at the end of this information sheet.

What is the purpose of the study?
This in an educational study that is being done to try and find out more about early psychosis, in particular the links between views about the future, hopelessness, and suicide. We also aim to try to find out whether there is a link between views of the future and the 'negative' symptoms of psychosis such as lack of energy, feeling less emotional and lack of motivation.

Why have I been invited?
You have been chosen because you have had a first episode of psychosis within the last 12 months.

Do I have to take part?
It is up to you to decide to join the study. We will describe the study and go through this information sheet with you. If you agree to participate you will be asked to sign a consent form. This does not place you under any obligation, and if at a later point you want to stop participating you will be able to do so without having to explain why. Your decision will not affect any future treatment by the NHS.

What will happen to me if I take part?
If you decide to take part you will need to meet with a researcher at your care team's base to complete some psychological tests and some questionnaires about your illness and symptoms. You do not need to have any knowledge of the tests or questionnaires beforehand. The session should take between 45-60 minutes, and you can take breaks.

Expenses and payment
We will pay you £10 to compensate you for your time and travel costs.

Involvement of the General Practitioner/Family Doctor (GP)
If we feel it is appropriate we will write to your GP telling him/her of your decision to participate, unless you ask us not to. We will ask you before we do this, and you are free to say no.

Will my taking part in the study be kept confidential?
Paper documents relating to the study will not have your name on them and nobody except the researcher will know they relate to you. Electronic documents relating to the study will be kept on a securely encrypted memory stick, and only the chief investigator will have access to this.

Everything you tell the researcher will be kept confidential within the research study. As is normal in research studies, the only exception to this is if the researcher becomes concerned that there is a significant risk of harm either to you or to someone else. In this case, the researcher will be obliged to inform your care coordinator or another appropriate professional so that they can help to keep anyone at risk safe. The researcher will make every effort to tell you before they do this.

What will happen to any information I give?
Anonymised information from the study may be used:

- By storing and analysing it electronically to find out what this study is telling us.
- By sharing it with groups that check that research is done properly.
- By publishing the results of the study (this will not include any information that identifies you to people outside the study).

All personal information will be destroyed after the end of the study.

Who has reviewed this 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 research study has been reviewed and given a favourable opinion by the Camberwell St Giles Research Ethics Committee.

What if there is a problem?
If you have a concern about any aspect of this study, in the first instance you should speak to the researcher who will do their best to answer your questions (contact details below). If you remain unhappy and wish to complain formally the researcher will be able to provide details of how to do this. In the unlikely event of anything untoward happening insurance has been taken out with Zurich Municipal to cover this study.

Further information and contact details
We would be very happy to answer any questions you have. Please don't hesitate to contact us using the details given below.

Dr Emmeline Goodby
Doctorate Course in Clinical Psychology
Department of Psychology
Royal Holloway, University of London
Egham, TW20 0EX
07936 888454
emmeline.goodby.2011@live.rhul.ac.uk

Thank you for considering volunteering for this study.

Appendix 4

Poster and leaflet advertisements for control participants

Royal Holloway University of London

Doctoral Course in Clinical Psychology
Department of Psychology

Win a cash prize!

Volunteers Wanted for a Research Study:
Future Thinking in First Episode Psychosis

We are looking for volunteers between the ages of 18 and 35 to take part in a short research study. You could win up to £100!

What is the purpose of the study?
This study is being done to try and find out more about early psychosis. Psychosis is an illness that commonly involves the experience of hallucinations, delusions and/or paranoia, and is associated with an increased risk of suicide in the first years of the illness. The study will focus on the links between views about the future, hopelessness, and risk of suicide in early psychosis. We also aim to try to find out whether there is a link between views of the future and a particular type of symptoms of psychosis.

What will happen if I take part?
Participants will be required to complete straightforward psychological tests and questionnaires at a convenient location, taking between 45-60 minutes.

Who can take part?
Men and women without psychosis between the ages of 18 and 35 are potentially eligible to take part. People who are currently suffering from clinical anxiety or depression are not eligible to take part.

Compensation
Community volunteers will be entered into a prize draw to win one of three cash prizes.

1st prize: £100, 2nd prize: £50, 3rd prize: £25

You will have a better than one-in-ten chance of winning a prize!

Interested?
If you are interested in participating or would like more information please contact:

Dr Emmeline Goodby
07936 888454
emmeline.goodby@nhs.net

Community Volunteer Publicity Poster, version 2, 23rd January 2013

Royal Holloway University of London

Doctoral Course in Clinical Psychology
Department of Psychology

Win a cash prize!

Volunteers Wanted for a Research Study: Future Thinking in First Episode Psychosis

We are looking for volunteers between the ages of 18 and 35 to take part in a short research study. You could win up to £100!

Full details are overleaf.
If you are interested, contact:
Dr Emmeline Goodby
07936 888454
emmeline.goodby@nhs.net

Community Volunteer Publicity Leaflet, version 1, 23rd January 2014

What is the purpose of the study?
This study is being done to try and find out more about early psychosis. Psychosis is an illness that commonly involves the experience of hallucinations, delusions and/or paranoia, and is associated with an increased risk of suicide in the first years of the illness. The study will focus on the links between views about the future, hopelessness, and risk of suicide in early psychosis. We also aim to try to find out whether there is a link between views of the future and a particular type of symptoms of psychosis.

What will happen if I take part?
Participants will be required to complete straightforward psychological tests and questionnaires at a convenient location, taking between 45-60 minutes.

Who can take part?
Men and women without psychosis between the ages of 18 and 35 are potentially eligible to take part. People who are currently suffering from clinical anxiety or depression are not eligible to take part.

Compensation
Community volunteers will be entered into a prize draw to win one of three cash prizes.

1st prize: £100, 2nd prize: £50, 3rd prize: £25

You will have a better than one-in-ten chance of winning a prize!

Appendix 5

Information sheet for control participants

Doctoral Course in Clinical Psychology
Department of Psychology

Participant Information Sheet – Community Volunteer

Future-Directed Thinking in First Episode Psychosis

You are being invited to take part in a research study. Before you decide whether or not to take part it is important for you to understand why the research is being done and what it will involve. Please read the following information and discuss it with other people if you wish. We encourage you to ask questions if anything is not clear or if you would like more information. Contact details are at the end of this information sheet.

What is the purpose of the study?
This is an educational study that is being done to try and find out more about early psychosis. Psychosis is an illness that commonly involves the experience of hallucinations, delusions and/or paranoia, and in previous research the rate of suicide in this group has been shown to be higher than in people without psychosis. The study will focus on the links between views about the future, hopelessness, and risk of suicide in early psychosis. We also aim to try to find out whether there is a link between views of the future and particular symptoms of psychosis.

Who can take part?
Men and women without psychosis between the ages of 18 and 35 are potentially eligible to take part. People who are currently suffering from clinical anxiety or depression are not eligible to take part.

Do I have to take part?
It is up to you to decide to join the study. We will describe the study and go through this information sheet with you. If you agree to participate you will be asked to sign a consent form. This does not place you under any obligation, and if at a later point you want to stop participating you will be able to do so without having to explain why. Your decision will not affect any future treatment by the NHS.

What will happen to me if I take part?
If you decide to take part you will need to complete a brief telephone questionnaire to find out whether you are eligible to take part in the study. You will then meet with a researcher to complete some psychological tests and questionnaires. You do not need to have any knowledge of the tests or questionnaires beforehand. The session should take between 45-60 minutes, and you can take breaks.

Expenses and payment
Not every participant will be paid. Instead, all 26 community volunteers will be entered into a prize draw to win one of three cash prizes. 1st prize: £100, 2nd prize: £50, 3rd prize: £25. You will have a better than one-in-ten chance of winning a prize.

Involvement of the General Practitioner/Family Doctor (GP)
If we feel it is appropriate we will write to your GP telling him/her of your decision to participate, unless you ask us not to. We will ask you before we do this, and you are free to say no.

Will my taking part in the study be kept confidential?
Paper documents relating to the study will not have your name on them and nobody except the researcher will know they relate to you. Electronic documents relating to the study will be kept on a securely encrypted memory stick, and only the chief investigator will have access to this.

Everything you tell the researcher will be kept confidential within the research study. As is normal in research studies, the only exception to this is if the researcher becomes concerned that there is a significant risk of harm either to you or to someone else. In this case, the researcher will be obliged to inform your GP or another appropriate professional so that they can help to keep anyone at risk safe. The researcher will make every effort to tell you before they do this.

What will happen to any information I give?
Anonymised information from the study may be used:

- By storing and analysing it electronically to find out what this study is telling us.
- By sharing it with groups that check that research is done properly.
- By publishing the results of the study (this will not include any information that identifies you to people outside the study).

All personal information will be destroyed after the end of the study.

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 Camberwell St Giles Research Ethics Committee.

What if there is a problem?
If you have a concern about any aspect of this study, in the first instance you should speak to the researcher who will do their best to answer your questions (contact details below). If you remain unhappy and wish to complain formally the researcher will be able to provide details of how to do this. In the unlikely event of anything untoward happening insurance has been taken out with Zurich Municipal to cover this study.

Further information and contact details
We would be very happy to answer any questions you have. Please don't hesitate to contact us using the details given below.

Dr Emmeline Goodby
Doctoral Course in Clinical Psychology
Department of Psychology
Royal Holloway, University of London
Egham, TW20 0EX
07936 888454
emmeline.goodby.2011@live.rhul.ac.uk

Thank you for considering volunteering for this study.

Appendix 6

Ofqual educational equivalence levels

Level	NQF Qualifications examples	QCF Qualifications examples	Framework for Higher Education examples
Entry	▪ Entry level certificates ▪ Skills for Life at Entry level	Entry level VQs: ▪ Entry level awards, certificates and diplomas ▪ Foundation Learning Tier pathways ▪ Functional Skills at Entry level	-
1	▪ GCSEs graded D-G ▪ NVQs at level 1 ▪ Key Skills level 1 ▪ Skills for Life ▪ Foundation Diploma	Level 1 VQs: ▪ BTEC awards, certificates and diplomas at level 1 ▪ Functional Skills level 1 ▪ OCR Nationals ▪ Foundation Learning Tier pathways	-
2	▪ GCSEs graded A*-C ▪ NVQs at level 2 ▪ Level 2 VQs ▪ Key Skills level 2 ▪ Skills for Life ▪ Higher Diploma	Level 2 VQs: ▪ BTEC awards, certificates and diplomas at level 2 ▪ Functional Skills level 2	-
3	▪ AS/A levels ▪ Advanced Extension Awards ▪ International Baccalaureate ▪ Key Skills level 3 ▪ NVQs at level 3 ▪ Cambridge International Awards ▪ Advanced and Progression Diploma	Level 3 VQs: ▪ BTEC awards, certificates and diplomas at level 3 ▪ BTEC Nationals ▪ OCR Nationals	-

Level	NQF Qualifications examples		QCF Qualifications examples	Framework for Higher Education examples
4	▪ NVQs at level 4 ▪ Key Skills level 4 ▪ Certificates of higher education		Level 4 VQs: ▪ BTEC Professional Diplomas, Certificates and Awards	Certificates of higher education
5	▪ Higher national diplomas ▪ Other higher diplomas ▪ NVQs at level 4*	Original NQF Level 4*	Level 5 VQs: ▪ HNCs and HNDs ▪ BTEC Professional Diplomas, Certificates and Awards	Diplomas of higher education and further education, foundation degrees and higher national diplomas
6	▪ National Diploma in Professional Production Skills ▪ NVQs at level 4*		Level 6 VQs: ▪ BTEC Advanced Professional Diplomas, Certificates and Awards	Bachelor degrees, graduate certificates and diplomas
7	▪ Postgraduate certificates and diplomas ▪ BTEC advanced professional awards, certificates and diplomas ▪ Fellowships and fellowship diplomas ▪ Diploma in Translation ▪ NVQs at level 5*	Original NQF Level 5*	Level 7 VQs: ▪ Advanced professional awards, certificates and diplomas	Masters degrees, postgraduate certificates and diplomas
8	▪ NVQs at level 5*		Level 8 VQs: ▪ Award, certificate and diploma in strategic direction	Doctorates

Note. **Adapted from (Office of Qualifications and Examinations Regulation, 2012).**

Appendix 7

Beck Hopelessness Scale

(not included due to copyright restrictions)

Appendix 8

Beck Scale for Suicide Ideation

(not included due to copyright restrictions)

Appendix 9

Scale for the Assessment of Negative Symptoms

SCALE FOR THE ASSESSMENT OF NEGATIVE SYMPTOMS

(SANS)

Nancy C. Andreasen, M.D., Ph.D.

Department of Psychiatry
College of Medicine
The University of Iowa
Iowa City, Iowa 52242

(SAS Variable Name edition: 2000)

AFFECTIVE FLATTENING OR BLUNTING

Affective flattening or blunting manifests itself as a characteristic impoverishment of emotional expression, reactivity, and feeling. Affective flattening can be evaluated by observation of the subject's behavior and responsiveness during a routine interview. The rating of some items may be affected by drugs, since the Parkinsonian side-effect of phenothiazines may lead to mask-like facies and diminished associated movements. Other aspects of affect, such as responsivity or appropriateness, will not be affected, however.

Unchanging Facial Expression

The subject's face appears wooden, mechanical, frozen. It does not change expression, or changes less than normally expected, as the emotional content of discourse changes. Since phenothiazines may partially mimic this effect, the interviewer should be careful to note whether or not the subject is on medication, but should not try to "correct" the rating accordingly.

Not at all: Subject is normal or labile	0	SS11
Questionable decrease	1	
Mild: Occasionally the subject's expression is not as full as expected	2	
Moderate: Subject's expressions are dulled overall, but not absent	3	
Marked: Subject's face has a flat "set" look, but flickers of affect arise occasionally	4	
Severe: Subject's face looks "wooden" and changes little, if at all throughout the interview	5	

Decreased Spontaneous Movements

The subject sits quietly throughout the interview and shows few or no spontaneous movements. He does not shift position, move his legs, move his hands, etc., or does so less than normally expected.

Not at all: Subject moves normally or is overactive	0	SS12
Questionable decrease	1	
Mild: Some decrease in spontaneous movements	2	
Moderate: Subject moves three or four times during the interview	3	
Marked: Subject moves once or twice during the interview	4	
Severe: Subject sits immobile throughout the interview	5	

Paucity of Expressive Gestures

The subject does not use his body as an aid in expressing his ideas, through such means as hand gestures, sitting forward in his chair when intent on a subject, leaning back when relaxed, etc. This may occur in addition to decreased spontaneous movements.

Not at all: Subject uses expressive gestures normally or excessively	0	SS13
Questionable decrease	1	
Mild: Some decrease in expressive gestures	2	
Moderate: Subject uses body as an aid in expression at least three or four times	3	
Marked: Subject uses body as an aid in expression only once or twice	4	
Severe: Subject never uses body as an aid in expression	5	

Poor Eye Contact

The subject avoids looking at others or using his eyes as an aid in expression. He appears to be staring into space even when he is talking.

Not at all: Good eye contact and expression	0	SS14
Questionable decrease	1	
Mild: Some decrease in eye contact and eye expression	2	
Moderate: Subject's eye contact is decreased by at least half of normal	3	
Marked: Subject's eye contact is very infrequent	4	
Severe: Subject almost never looks at interviewer	5	

Affective Nonresponsivity

Failure to smile or laugh when prompted may be tested by smiling or joking in a way which would usually elicit a smile from a normal individual. The examiner may also ask, "Have you forgotten how to smile?" while smiling himself.

Not at all	0	SS15
Questionable decrease	1	
Mild: Slight but definite lack in responsivity	2	
Moderate: Subject occasionally seems to miss the cues to respond	3	
Marked: Subject seems to miss the cues to respond most of the time	4	
Severe: Subject is essentially unresponsive, even on prompting	5	

__ __3

Lack of Vocal Inflections

While speaking the subject fails to show normal vocal emphasis patterns. Speech has a monotonic quality, and important words are not emphasized through changes in pitch or volume. Subject also may fail to change volume with changes of subject so that he does not drop his voice when discussing private topics nor raise it as he discusses things which are exciting or for which louder speech might be appropriate.

Not all all: Normal vocal inflections	0	SS16
Questionable decrease	1	
Mild: Slight decrease in vocal inflections	2	
Moderate: Interviewer notices several instances of flattened vocal inflections	3	
Marked: Obvious decrease in vocal inflections	4	
Severe: Subject's speech is a continuous monotone	5	

Global Rating of Affective Flattening

The global rating should focus on overall severity of affective flattening or blunting. Special emphasis should be given to such core features as unresponsiveness, inappropriateness, and an overall decrease in emotional intensity.

No flattening: Normal affect	0	SS17
Questionable affective flattening	1	
Mild affective flattening	2	
Moderate affective flattening	3	
Marked affective flattening	4	
Severe affective flattening	5	

Inappropriate Affect

Affect expressed is inappropriate or incongruous, not simply flat or blunted. Most typically, this manifestation of affective disturbance takes the form of smiling or assuming a silly facial expression while talking about a serious or sad subject. (Occasionally subjects may smile or laugh when talking about a serious subject which they find uncomfortable or embarrassing. Although their smiling may seem inappropriate, it is due to anxiety and therefore should not be rated as inappropriate affect.) Do not rate affective flattening or blunting as inappropriate.

Not at all: Affect is not inappropriate	0	SS18
Questionable	1	
Mild: At least one instance of inappropriate smiling or other inappropriate affect	2	
Moderate: Subject exhibits two to four instances of inappropriate affect	3	
Marked: Subject exhibits five to ten instances of inappropriate affect	4	
Severe: Subject's affect is inappropriate most of the time	5	

__ __4

ALOGIA

Alogia is a general term coined to refer to the impoverished thinking and cognition that often occur in subjects with schizophrenia (Greek a = no, none; logos = mind, thought). Subjects with alogia have thinking processes that seem empty, turgid, or slow. Since thinking cannot be observed directly, it is inferred from the subject's speech. The two major manifestations of alogia are nonfluent empty speech (poverty of speech) and fluent empty speech (poverty of content of speech). Blocking and increased latency or response may also reflect alogia.

Poverty of Speech

Restriction in the amount of spontaneous speech, so that replies to questions tend to be brief, concrete, and unelaborated. Unprompted additional information is rarely provided. Replies may be monosyllabic, and some questions may be left unanswered altogether. When confronted with this speech pattern, the interviewer may find himself frequently prompting the subject in order to encourage elaboration of replies. To elicit this finding, the examiner must allow the subject adequate time to answer and to elaborate his answer.

No poverty of speech: A substantial and appropriate number of replies to questions include additional information	0	SS19
Questionable poverty of speech	1	
Mild: Occasional replies do not include elaborated information even though this is appropriate	2	
Moderate: Some replies do not include appropriately elaborated information, and some replies are monosyllabic or very brief--("Yes." "No." "Maybe." "I don't know." "Last week.")	3	
Marked: Answers are rarely more than a sentence or a few words in length	4	
Severe: Subject says almost nothing and occasionally fails to answer questions	5	

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Poverty of Content of Speech

Although replies are long enough so that speech is adequate in amount, it conveys little information. Language tends to be vague, often over-abstract or over-concrete, repetitive, and stereotyped. The interviewer may recognize this finding by observing that the subject has spoken at some length but has not given adequate information to answer the question. Alternatively, the subject may provide enough information, but require many words to do so, so that a lengthy reply can be summarized in a sentence or two. Sometimes the interviewer may characterize the speech as "empty philosophizing."

Exclusions: This finding differs from circumstantiality in that the circumstantial subject tends to provide a wealth of detail.

Example: Interviewer: "Why is it, do you think, that people believe in God?" Subject: "Well, first of all because he uh, he are the person that is their personal savior. He walks with me and talks with me. And uh, the understanding that I have, um, a lot of peoples, they don't really, uh, know they own personal self. Because, uh, they ain't, they all, just don't know they personal self. They don't, know that he uh, seemed like to me, a lot of 'em don't understand that he walks and talks with them."

No poverty of content	0	SS20
Questionable	1	
Mild: Occasional replies are too vague to be comprehensible or can be markedly condensed	2	
Moderate: Frequent replies which are vague or can be markedly condensed to make up at least a quarter of the interview	3	
Marked: At least half of the subject's speech is composed of vague or incomprehensible replies	4	
Severe: Nearly all the speech is vague, incomprehensible, or can be markedly condensed	5	

Blocking

Interruption of a train of speech before a thought or idea has been completed. After a period of silence which may last from a few seconds to minutes, the person indicates that she/he cannot recall what he had been saying or meant to say. Blocking should only be judged to be present if a person voluntarily describes losing his thought or if, upon questioning by the interviewer, the person indicates that that was the reason for pausing.

No blocking	0	SS21
Questionable	1	
Mild: A single instance noted during a forty-five minute period	2	
Moderate: Occurs twice during forty-five minutes	3	
Marked: Occurs three or four times during forty-five minutes	4	
Severe: Occurs more than four times in forty-five minutes	5	

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Increased Latency of Response

The subject takes a longer time to reply to questions than is usually considered normal. He may seem "distant" and sometimes the examiner may wonder if he has even heard the question. Prompting usually indicates that the subject is aware of the question, but has been having difficulty in formulating his thoughts in order to make an appropriate reply.

Not at all	0	SS22
Questionable	1	
Mild: Occasional brief pauses before replying	2	
Moderate: Often pauses several seconds before replying	3	
Marked: Usually pauses at least ten to fifteen seconds before replying	4	
Severe: Long pauses prior to nearly all replies.	5	

Global Rating of Alogia

Since the core features of alogia are poverty of speech and poverty of content of speech, the global rating should place particular emphasis on them.

No alogia	0	SS23
Questionable	1	
Mild: Mild but definite impoverishment in thinking	2	
Moderate: Significant evidence for impoverished thinking	3	
Marked: Subject's thinking seems impoverished much of the time	4	
Severe: Subject's thinking seems impoverished nearly all of the time	5	

AVOLITION-APATHY

Avolition manifests itself as a characteristic lack of energy, drive, and interest. Subjects are unable to mobilize themselves to initiate or persist in completing many different kinds of tasks. Unlike the diminished energy or interest of depression, the avolitional symptom complex in schizophrenia is usually not accompanied by saddened or depressed affect. The avolitional symptom complex often leads to severe social and economic impairment.

Grooming and Hygiene

The subject displays less attention to grooming and hygiene than normal. Clothing may appear sloppy, outdated, or soiled. The subject may bathe infrequently and not care for hair, nails, or teeth--leading to such manifestations as greasy or uncombed hair, dirty hands, body odor, or unclean teeth and bad breath. Overall, the appearance is dilapidated and disheveled. In extreme cases, the subject may even have poor toilet habits.

How often do you bathe or shower?

Do you change your clothes every day?

How often do you do laundry?

No evidence of poor grooming and hygiene	0	SS24
Questionable	1	
Mild: Some slight but definite indication of inattention to appearance, i.e., messy hair or disheveled clothes	2	
Moderate: Appearance is somewhat disheveled, i.e., greasy hair, dirty clothes	3	
Marked: Subject's attempts to keep up grooming or hygiene are minimal	4	
Severe: Subject's clothes, body and environment are dirty and smelly	5	

Impersistence at Work or School

The subject has had difficulty in seeking or maintaining

No evidence of impersistence at work

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employment (or schoolwork) as appropriate for his or her age and sex. If a student, he/she does not do homework and may even fail to attend class. Grades will tend to reflect this. If a college student, there may be a pattern of registering for courses, but having to drop several or all of them before the semester is completed. If of working age, the subject may have found it difficult to work at a job because of inability to persist in completing tasks and apparent irresponsibility. He may go to work irregularly, wander away early, complete them in a disorganized manner. He may simply sit around the house and not seek any employment or seek it only in an infrequent and desultory manner. If a housewife or retired person, the subject may fail to complete chores, such as shopping or cleaning, or complete them in an apparently careless and half-hearted way. *Have you been having any problems at (work, school)?* *Do you ever start some project and just never get around to finishing it?*	or school	0 SS25
	Questionable	1
	Mild: Slight indications of impersistence, i.e., missing a couple days of school or work	2
	Moderate: Subject often has poor performance at work or school	3
	Marked: Subject has much difficulty maintaining even a below normal level of work or school	4
	Severe: Subject consistently fails to maintain a record at work or school	5
<u>Physical Anergia</u> The subject tends to be physically inert. He may sit in a chair for hours at a time and not initiate any spontaneous activity. If encouraged to become involved in an activity, he may participate only briefly and then wander away or disengage himself and return to sitting alone. He may spend large amounts of time in some relatively mindless and physically inactive task such as watching TV or playing solitaire. His family may report that he spends most of his time at home "doing nothing except sitting around". Either at home or in an inpatient setting he may spend much of his time sitting in his room. *Are there times when you lie or sit around most of the day?* *(Does this ever last longer than one day?)*	No Evidence of Physical Anergia	0 SS26
	Questionable	1
	Mild Anergia	2
	Moderate: Subject lies in bed or sits immobile at least a quarter of normal waking hours	3
	Marked: Subject lies in bed or sits immobile at least half of normal waking hours	4
	Severe: Subject lies in bed or sits immobile for most of the day	5
<u>Global Rating of Avolition - Apathy</u> The global rating should reflect the overall severity of the avolition symptoms, given expectational norms for the subject's age and social status or origin. In making the global rating, strong weight may be given to only one or two prominent symptoms if they are particularly striking.	No Avolition	0 SS27
	Questionable	1
	Mild, But Definitely Present	2
	Moderate Avolition	3
	Marked Avolition	4
	Severe Avolition	5

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ANHEDONIA-ASOCIALITY

This symptom complex encompasses the schizophrenic subject's difficulties in experiencing interest or pleasure. It may express itself as a loss of interest in pleasurable activities, an inability to experience pleasure when participating in activities normally considered pleasurable, or a lack of involvement in social relationships of various kinds.

Recreational Interests and Activities

The subject may have few or no interests, activities, or hobbies. Although this symptom may begin insidiously or slowly, there will usually be some obvious decline from an earlier level of interest and activity. Subjects with relatively milder loss of interest will engage in some activities which are passive or non-demanding, such as watching TV, or will show only occasional or sporadic interest. Subjects with the most extreme loss will appear to have a complete and intractible inability to become involved in or enjoy activities. The rating in this area should take both the quality and quantity of recreational interests into account.

Have you felt interested in the things you usually enjoy?

(Have they been as fun as usual?)

Have you been watching TV or listening to the radio?

No Inability to Enjoy Recreational Interests or Activities	0	SS28
Questionable	1	
Mild Inability to Enjoy Recreational Activities	2	
Moderate: Subject often is not "up" for recreational activities	3	
Marked: Subject has little interest in and derives only mild pleasure from recreational activities	4	
Severe: Subject has no interest in and derives no pleasure from recreational activities	5	

Sexual Interest and Activity

The subject may show a decrement in sexual interest and activity, as judged by what would be normal for the subject's age and marital status. Individuals who are married may manifest disinterest in sex or may engage in intercourse only at the partner's request. In extreme cases, the subject may not engage in any sex at all. Single subjects may go for long periods of time without sexual involvement and make no effort to satisfy this drive. Whether married or single, they may report that they subjectively feel only minimal sex drive or that they take little enjoyment in sexual intercourse or in masturbatory activity even when they engage in it.

Have you noticed any changes in your sex drive?

No Inability to Enjoy Sexual Activities	0	SS29
Questionable Decrement in Sexual Interest and Activity	1	
Mild Decrement in Sexual Interest and Activity	2	
Moderate: Subject occasionally has noticed decreased interests in and/or enjoyment from sexual activities	3	
Marked: Subject has little interest in and/or derives little pleasure from sexual activities	4	
Severe: Subject has no interest in and/or derives no pleasure from sexual activities	5	

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Ability to Feel Intimacy and Closeness

The subject may display an inability to form close and intimate relationships of a type appropriate for his age, sex, and family status. In the case of a younger person, this area should be rated in terms of relationships with the opposite sex and with parents and siblings. In the case of an older person who is married, the relationship with spouse and with children should be evaluated, while older unmarried individuals should be judged in terms of relationships with the opposite sex and any family members who live nearby. Subjects may display few or no feelings of affection to available family members. Or they may have arranged their lives so that they are completely isolated from any intimate relationships, living alone and making no effort to initiate contacts with family or members of the opposite sex.

Have you been having any problems with your (family, spouse)?

How would you feel about visiting with your (family, parents, spouse, etc.)?

No Inability to Feel Intimacy and Closeness	0 SS30
Questionable Inability	1
Mild, But Definite Inability to Feel Intimacy and Closeness	2
Moderate: Subject appears to enjoy family or significant others but does not appear to "look forward" to visits	3
Marked: Subject appears neutral toward visits from family or significant others. Brightens only mildly	4
Severe: Subject prefers no contact with or is hostile toward family or significant others	5

Relationships with Friends and Peers

Subjects may also be relatively restricted in their relationships with friends and peers of either sex. They may have few or no friends, make little or no effort to develop such relationships, and choose to spend all or most of their time alone.

Have you been spending much time with friends?

Do you enjoy spending time alone, or would you rather have more friends?

No Inability to Form Close Friendships	0 SS31
Questionable Inability to Form Friendships	1
Mild, But Definite Inability to Form Friendships	2
Moderate: Subject able to interact, but sees friends/acquaintances only two to three times per month	3
Marked: Subject has difficulty forming and/or keeping friendships. Sees friends/acquaintances only one to two times per month	4
Severe: Subject has no friends and no interest in developing any social ties	5

Global Rating of Anhedonia-Asociality

The global rating should reflect the overall severity of the anhedonia-asociality complex, taking into account the norms appropriate for the subject's age, sex, and family status.

No Evidence of Anhedonia-Asociality	0 SS32
Questionable Evidence of Anhedonia-Asociality	1
Mild, But Definite Evidence of Anhedonia-Asociality	2
Moderate Evidence of Anhedonia-Asociality	3
Marked Evidence of Anhedonia-Asociality	4
Severe Evidence of Anhedonia-Asociality	5

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ATTENTION

Attention is often poor in schizophrenics. The subject may have trouble focusing his attention, or he may only be able to focus sporadically and erratically. He may ignore attempts to converse with him, wander away while in the middle of an activity or task, or appear to be inattentive when engaged in formal testing or interviewing. He may or may not be aware of his difficulty in focusing his attention.

Social Inattentiveness

While involved in social situations or activities, the subject appears inattentive. He looks away during conversations, does not pick up the topic during a discussion, or appears uninvolved or unengaged. He may abruptly terminate a discussion or a task without any apparent reason. He may seem "spacy" or "out of it". He may seem to have poor concentration when playing games, reading, or watching TV.

No Indication of Inattentiveness	0	SS33
Questionable Signs	1	
Mild, But Definite Signs of Inattentiveness	2	
Moderate: Subject occasionally misses what is happening in the environment	3	
Marked: Subject often misses what is happening in the environment; has trouble with reading comprehension	4	
Severe: Subject unable to follow conversation, remember what he's read, or follow TV plot	5	

Inattentiveness During Mental Status Testing

The subject may perform poorly on simple tests of intellectual functioning in spite of adequate education and intellectual ability. This should be assessed by having the subject spell "world" backwards and by serial 7's (at least a tenth grade education) or serial 3's (at least a sixth grade education) for a series of five subtractions. A perfect score is 10.

No Errors	0	SS34
Questionable: No errors but subject performs in a halting manner or makes/corrects an error	1	
Mild, But Definite (One Error)	2	
Moderate (Two Errors)	3	
Marked (Three Errors)	4	
Severe (More Than Three Errors)	5	

Global Rating of Attention

This rating should assess the subject's overall ability to attend or concentrate, and include both clinical appearance and performance on tasks.

No Indications of Inattentiveness	0	SS35
Questionable	1	
Mild, But Definite Inattentiveness	2	
Moderate Inattentiveness	3	
Marked Inattentiveness	4	
Severe Inattentiveness	5	

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Appendix 10

Calgary Depression Scale for Schizophrenia

Interviewer: Ask the first question as written. Use follow up probes or qualifiers at your discretion. Time frame refers to last two weeks unless stipulated. **N.B.** The last item, #9, is based on observations of the entire interview.

1. Depression: How would you describe your mood over the last two weeks? Do you keep reasonably cheerful or have you been very depressed or low spirited recently? In the last two weeks how often have you (own words) every day? All day?

0. Absent	
1. Mild	Expresses some sadness or discouragement on questioning.
2. Moderate	Distinct depressed mood persisting up to half the time over last 2 weeks: present daily.
3. Severe	Markedly depressed mood persisting daily over half the time interfering with normal motor and social functioning.

2. Hopelessness: How do you see the future for yourself? Can you see any future? - or has life seemed quite hopeless? Have you given up or does there still seem some reason for trying?

0. Absent	
1. Mild	Has at times felt hopeless over the last two weeks but still has some degree of hope for the future.
2. Moderate	Persistent, moderate sense of hopelessness over last week. Can be persuaded to acknowledge possibility of things being better.
3. Severe	Persisting and distressing sense of hopelessness.

3. Self Depreciation: What is your opinion of your self compared to other people? Do you feel better, not as good, or about the same as others? Do you feel inferior or even worthless?

0. Absent	
1. Mild	Some inferiority; not amounting to feeling of worthlessness.
2. Moderate	Subject feels worthless, but less than 50% of the time.
3. Severe	Subject feels worthless more than 50% of the time. May be challenged to acknowledge otherwise.

4. Guilty Ideas Of Reference: Do you have the feeling that you are being blamed for something or even wrongly accused? What about? (Do not include justifiable blame or accusation. Exclude delusions of guilt.)

0. Absent	
1. Mild	Subject feels blamed but not accused less than 50% of the time.
2. Moderate	Persisting sense of being blamed, and/or occasional sense of being accused.
3. Severe	Persistent sense of being accused. When challenged, acknowledges that it is not so.

5. Pathological Guilt: Do you tend to blame yourself for little things you may have done in the past? Do you think that you deserve to be so concerned about this?

0. Absent	
1. Mild	Subject sometimes feels over guilty about some minor peccadillo, but less than 50% of time.
2. Moderate	Subject usually (over 50% of time) feels guilty about past actions the significance of which he exaggerates.
3. Severe	Subject usually feels s/he is to blame for everything that has gone wrong, even when not his/her fault.

6. Morning Depression: When you have felt depressed over the last 2 weeks have you noticed the depression being worse at any particular time of day?

0. Absent	No depression.
1. Mild	Depression present but no diurnal variation.
2. Moderate	Depression spontaneously mentioned to be worse in a.m.
3. Severe	Depression markedly worse in a.m., with impaired functioning which improves in p.m.

7. Early Wakening: Do you wake earlier in the morning than is normal for you? How many times a week does this happen?

0. Absent	No early wakening.
1. Mild	Occasionally wakes (up to twice weekly) 1 hour or more before normal time to wake or alarm time.
2. Moderate	Often wakes early (up to 5 times weekly) 1 hour or more before normal time to wake or alarm.
3. Severe	Daily wakes 1 hour or more before normal time.

8. Suicide: Have you felt that life wasn't worth living? Did you ever feel like ending it all? What did you think you might do? Did you actually try?

0. Absent	
1. Mild	Frequent thoughts of being better off dead, or occasional thoughts of suicide.
2. Moderate	Deliberately considered suicide with a plan, but made no attempt.
3. Severe	Suicidal attempt apparently designed to end in death (i.e.: accidental discovery or inefficient means).

9. Observed Depression: Based on interviewer's observations during the entire interview. The question "Do you feel like crying?" used at appropriate points in the interview, may elicit information useful to this observation.

0. Absent	
1. Mild	Subject appears sad and mournful even during parts of the interview, involving affectively neutral discussion.
2. Moderate	Subject appears sad and mournful throughout the interview, with gloomy monotonous voice and is tearful or close to tears at times.
3. Severe	Subject chokes on distressing topics, frequently sighs deeply and cries openly, or is persistently in a state of frozen misery if examiner is sure that this is present.

Appendix 11

Generalised Anxiety Disorder questionnaire

Over the last *two weeks*, how often have you been bothered by the following problems?		Not at all	Several days	More than half the days	Nearly every day
1	Feeling nervous, anxious or on edge	0	1	2	3
2	Not being able to stop or control worrying	0	1	2	3
3	Worrying too much about different things	0	1	2	3
4	Trouble relaxing	0	1	2	3
5	Being so restless that it is hard to sit still	0	1	2	3
6	Becoming easily annoyed or irritated	0	1	2	3
7	Feeling afraid as if something awful might happen	0	1	2	3

Appendix 12

Consent form for participants

Doctorate in Clinical Psychology
Department of Psychology

CONSENT FORM

Future-Directed Thinking in First Episode Psychosis

	Tick if yes:
1. I confirm that I have read and understand the information sheet (version 2, 4th May 2013) for the above named research study and have had the opportunity to ask questions.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.	☐
3. I agree to my GP being notified of my participation in the study if appropriate.	☐
4. I would like my contact details to remain on record for up to one year after completion of the study so that I can be contacted about the results.	☐
5. I agree to take part in the above named research study.	☐

Signed:_____ Date:_____ Name:_____
(Volunteer)

Signed:_____ Date:_____ Name:_____
(Researcher)

Appendix 13

Example debrief sheet for patients and community controls

Further help

Thank you for participating in our research today. The study aims to find out about the links between views about the future, hopelessness, and suicide in people with psychosis. We also aim to try to find out whether there is a link between views of the future and the 'negative' symptoms of psychosis such as lack of energy, feeling less emotional and lack of motivation.

If the things we have talked about bring up any concerning thoughts or feelings in the future, please use the following contacts to access organisations that can support you. In an emergency call 999 or visit your local A&E department.

- Contact your GP
- NHS Direct
  For details of local crisis support services or advice on accessing local A&E
  www.nhsdirect.nhs.uk
  Tel: 111 (Mon-Sun, 24hrs)
- The Samaritans
  An emotional support line
  Tel: 08457 90 90 90 (Mon-Sun, 24hrs)
  jo@samaritans.org
  www.samaritans.org
- SANEline
  Emotional support line for people in mental distress and their family, friends and carers.
  Tel: 0845 767 8000 (Mon-Sun, 6pm-11pm)
  It is also possible to email via an online form, and access online forums.
  www.sane.org.uk
- Lifeline (Cambridge residents only)
  0808 808 2121, (Mon-Sun, 7pm-11pm)
- Mind
  Mental Health Charity
  Infoline: 0300 123 3393 for information (Mon-Fri, 9am-6pm)
  Info@mind.org.uk
  www.mind.org.uk
- Rethink Mental Illness
  Mental Health Charity
  Tel: 0300 5000 927 for practical advice and info (Mon-Fri, 10am-2pm, except Bank Holidays)
  www.rethink.org
- Anxiety UK
  www.anxietyuk.org.uk
  Helpline: 08444 775 774 (Mon-Fri, 9.30am-5.30pm)
- www.depressionuk.org/index.shtml

Help in a crisis for existing patients of

West London Mental Health NHS Trust

- During office hours, contact your care coordinator or the member of staff you usually see.
- Outside office hours, contact the service user and carer support line on 0300 1234 244 (open Mon-Sun, 24hrs).

Cambridgeshire and Peterborough NHS Foundation Trust

- During office hours, contact your care coordinator or the member of staff you usually see.
- Outside office hours, contact the out of hours telephone support service on 0800 052 2252 (Mon-Fri from 5pm-10pm; Sat, Sun and bank holidays from 8am-10pm).

South West London and St George's Mental Health NHS Trust

- During office hours, contact your care co-ordinator or the member of staff you usually see.
- Outside office hours, contact the Crisis Line on 0800 028 8000 (Mon-Fri 5pm-9am; Sat and Sun 24hrs).

In an emergency call 999 or visit your local A&E department.