The function of attachment in First Episode Psychosis: A theoretical integration and clinical investigation

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Abstract:

Section I - Introduction:

The thesis explores the value of attachment theory as a framework for understanding the onset of, and adaptation to the experience of psychosis. The first section of the thesis establishes the clinical and theoretical context from which this line of enquiry arises, starting with a brief historical overview of the clinical approaches towards psychosis, including the diagnosis of schizophrenia, as a nosological entity (Chapter 1). Particular attention is drawn to the role of affect in psychosis, following Bleuler's (1911/1950) conceptualisation of the splitting of cognitive and affect processes in the diagnosis of schizophrenia.

The late 20th century growth of early intervention for psychosis, a psychologically informed service model, is discussed, in order to contextualise the service model explored for the second empirical study in the thesis. The parameters of the onset of psychotic difficulties, and subsequent adaptation to the experience of psychosis are then discussed (Chapter 2).

Following this, the current literature on premorbid (i.e. before the onset of psychotic difficulties) functioning in psychosis and duration of untreated psychosis (DUP) is reviewed. The data finds no significant relationship between DUP and premorbid adjustment, and suggests that the role of social and academic functioning has been undervalued, particularly with regard to negative symptomatology and quality of life, with poorer adjustment relating to increased negative symptomatology and poorer quality of life. The importance of adolescent premorbid functioning is also highlighted. As premorbid adjustment concerns functioning prior to the onset of psychotic symptomatology, the review suggests scope for a reappraisal of the role of psychodevelopmental factors in psychosis (Chapter 3).

This forms the rationale for viewing attachment theory as a theory par excellence in forwarding a psychodevelopmental understanding of psychosis, particularly given the relevance of contemporary perspectives on attachment theory (focussing on insecure attachment representations) in aiding the understanding of psychopathology in general (Chapter 4).

Concluding the first section, a theoretical integration offers a framework for applying the principles of attachment theory, and the related constructs of mentalisation and affect regulation (e.g. Fonagy, Gergely, Jurist & Target, 2002) to the study of psychosis (Chapter 5). In particular the relevance of attachment and mentalisation to help-seeking, adaptation to psychosis and psychotic phenomenology is highlighted. It was hypothesised that secure attachment would associate with shorter DUP and better engagement, compared to insecure attachment classifications. Higher levels of mentalisation (operationalised as Reflective Function, RF) were also hypothesised to associate with shorter DUP, better help-seeking and better adjustment. Secure attachment was hypothesised to associate with higher RF.

Section II – First Empirical study

The second section of the thesis (Chapter 6) presents a short test of the theoretical validity of applying attachment theory to psychosis, using an analogue study to investigate the role of attachment in the phenomenology of paranoia and hallucinations. The results suggest attachment and a strategy of interpersonal distancing predict higher levels of paranoia, whereas hallucinatory phenomena were predicted by latent constructs representing interpersonal dependence and avoidance strategies (including attachment anxiety and avoidance).

Section III – Second Empirical study

The third section of the thesis builds on the first study by exploring the role of attachment in a clinical sample of individuals in the first year of treatment for a first

episode psychosis, recruited from early intervention services in Glasgow and Edinburgh. The study utilises a cross-sectional cohort design (Chapter 7). The sample is characterised in terms of symptomatology, quality of life, DUP, help-seeking, premorbid adjustment, psychological variables, attachment states of mind (using the AAI) and mentalisation (Chapters 8).

Premorbid adjustment and DUP are included to facilitate investigation of the relationships outlined in Chapter 3. Levels of psychotic symptomatology and the median DUP were all comparable with contemporary FEP cohort studies. Contrary to the findings of Chapter 3, results of the study with regard to premorbid adjustment suggest that this construct is significantly correlated with DUP, particularly in the social domain, in the direction of poorer adjustment associating with longer DUP,. Poorer premorbid social adjustment was significantly associated with greater negative symptoms and greater general psychopathology. Poorer premorbid adjustment was not associated with help-seeking, but was associated with poorer engagement with services after initiation of treatment. Longer DUP was not associated with greater positive symptomatology, or poorer engagement, but was associated with more help-seeking (Chapter 9).

Attachment and mentalisation (RF) was investigated in a sub-sample of the main cohort. In contrast to chronic psychosis samples, both secure and insecure Attachment classifications were found in the FEP sample. Both secure and insecure/preoccupied attachment classifications were associated with higher RF. Attachment and RF were not related to psychotic symptomatology. However, higher RF was associated with poorer psychological quality of life. No significant relationships emerged between attachment and premorbid adjustment, DUP or help-seeking. No relationships between these variables emerged for RF. Attachment (but not RF) was significantly related to engagement, with secure attachment being associated with better engagement, and insecure/preoccupied attachment being associated with poorer engagement (Chapter 10).

Section IV – Discussion

The thesis represents a comprehensive assessment of theoretical links between attachment and psychosis, encompassing both phenomenological and clinical variables. The analogue study demonstrates the validity of the link between attachment and psychotic phenomenology, albeit limited by the use of self report measures of attachment. The clinical study is the first characterisation in Scotland of an FEP sample recruited from an early intervention cohort. The limitations of the clinical study are discussed in terms of small sample size, risk of Type I and II errors, and possible selection bias with regard to the attachment sub-sample. The low incidence of Unresolved attachment representations is also acknowledged. Theoretical implications of both studies are discussed in terms of the repositioning affect as an important factor in psychosis and the role of psychodevelopmental factors (including attachment, mentalisation and premorbid adjustment) in influencing onset and adaptation to psychosis. Clinical implications are discussed with regard to possible links with recovery trajectories, integrating attachment principles into treatment, and links to primary prevention of mental health problems in general (Chapter 11).

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Angus MacBeth, Glasgow, 14th September 2008.

“Life is not what one lived, but what one remembers and how one remembers it in order to recount it.”

Gabriel Garcia Marquez, *Living to Tell the Tale, 2003.*

Not a word was spoke between us, there was little risk involved
Everything up to that point had been left unresolved.
Try imagining a place where it's always safe and warm.
"Come in," she said,
"I'll give you shelter from the storm."

Bob Dylan, *Shelter from the Storm*, 1974.

Section I:

Introduction

The theoretical rationale for applying attachment theory to psychosis.

Chapter 1:

What is psychosis? Phenomenology and symptomatology.

Introduction

The experience of psychosis is one of the most distressing, and debilitating of mental health difficulties. For the individual experiencing psychosis, difficulties arise from not only the experience of psychotic symptoms, but also the associated emotional and cognitive difficulties which often precipitate significantly compromised quality of life (e.g. Bleuler 1978; Hegarty, Baldessarini, Tohen, Waternaux, & Oepen 1994; Liberman, Kopelowicz, Ventura, & Gutkind, 2002). This is compounded by the experience of stigma and prejudice that is all too often associated with a mental health difficulty (Read & Haslam, 2004). Psychosis also has a pervasive impact upon the lives of loved ones and carers. Furthermore, psychosis also poses a complex problem for the clinical team involved in the individual's care, *vis a vis* implementing a treatment programme that reflects the demands of the individual's clinical presentation and needs, but also remains respectful of the individual's integrity and identity.

The most severe manifestation of psychosis – traditionally labelled as "schizophrenia" (Bleuler 1911) – although affecting less than 1% of the population, has a substantial economic impact both in terms of health care costs, and in the wider societal sphere of impact upon the family, social care, and the workplace (Knapp, Managalore & Simon, 2004). The WHO/NIH Global Burden of Disease Study placed active psychosis third in a list of the most disabling health conditions - disability being defined in terms of impaired quality of life (Üstün, Rehm, Chatterji, Saxena, Trotter, Room, et al., 1999). After the first episode of psychosis, there is also a substantial challenge for individuals, their family and loved ones, and service providers in achieving and sustaining recovery – particularly as relapse in psychosis occurs in 20-35% of cases at 1 year, 50-65% at 2 years and 80% at 5 years (Robinson, Woerner, Alvir, Bilder, Goldman, Geisler, et al., 1999). Relapse is associated with more intractable psychotic

symptoms and greater impairment in quality of life (Wiersma, Nienhuls, Sloof, & Giel, 1998; Hogarty, Anderson, Reiss, Kornblith, Greenwald, Ulrich, et al., 1991). Thus, the first five years after the onset of treatment for psychosis have been hypothesised as a "critical period" for determining long-term outcome (Birchwood, Todd & Jackson, 1998).

Given the pervasive impact of both psychosis and the specific diagnosis of schizophrenia, from the outset this thesis aims to address the clinical presentation of schizophrenia within the range of mental health problems covered to a greater or lesser extent by the classification of "the psychoses". This relationship between psychosis and schizophrenia also reflects a long-standing debate regarding the mapping of the phenomenology of psychosis onto diagnostic categories. Indeed, until the last years of the 20th century, mainstream psychiatric nosology had held that schizophrenia was a non-affective condition characterised by a chronic, degenerative course (reified in clinical lore as "Kraepelinian schizophrenia", see below) and poor outcome, with a putative underlying biological cause (Kraepelin, 1919, Weinberger, 2002) although this could only be confirmed with certainty at the end state of the 'illness' process (e.g. Kelip Waniek, Goldman, Zemishlany, Alexander, Gibbon, et al., 1995). This is in contrast to psychoses with an affective component "*characterized by the recurrence of groups of mental symptoms throughout the life of the individual, not leading to mental deterioration"* (Kraepelin 1902; p. 381). The historical context in which the phenomenology and nosology of psychosis has emerged will be addressed later in this chapter; however it is first necessary to establish what the term "psychosis" denotes.

What is psychosis?

Psychosis is defined by the Oxford English Dictionary (Murray, Simpson, Weiner, 1989) as "*any kind of mental affection or derangement; especially one which cannot be ascribed to organic lesion or neurosis. In modern use, any mental illness or disorder that is accompanied by hallucinations, delusions, or mental confusion and a loss of contact*

with external reality, whether attributable to an organic lesion or not" (retrieved from http://dictionary.oed.com; 20th July 2008). Indeed, the crux of the definition and the basis of the clinical diagnosis of psychosis rests upon the individual's "loss of contact with *external* reality" (words in italics added by author). The phenomenology of psychosis encompasses the experience of a variety of *unusual beliefs and experiences*, congruent with the above, such as:

Hallucinations: This phenomenon denotes a perception of a stimulus or stimuli occurring in the absence of objective evidence of said stimulus. Hallucinations occur in all sensory modalities, (auditory, visual, tactile and olfactory) but are most commonly expressed in the auditory domain, where the phenomenon can also be referred to as "hearing voices". Auditory hallucinations comprise arguably the most prevalent symptom in the diagnosis of schizophrenia (World Health Organization, 1973), and can be experienced in both external and internal space. Auditory hallucinations can range from unidentifiable noises, through whispering, to clear speech. Voice hearers may experience hearing conversations as part of the hallucination, or experience the voice giving commands. There is a substantial psychological component to the experience of voices, as beliefs about the voices' power and omnipotence may lead to feelings of powerlessness, helplessness and increased affective disturbance (Chadwick & Birchwood, 1994, Birchwood & Chadwick 1997). Data from the NIMH Epidemiologic Catchment Area Program (Tien, 1991) suggested that lifetime prevalence of hallucinations (not related to drugs or medical problems) was 10% for men and 15% for women, with overall rates similar for visual, auditory, and tactile hallucinations.

Delusional beliefs: This phenomenon denotes a category of fixed false belief, which is held with a substantial degree of conviction, is still held after exposure to contradictory evidence, and is held by a majority of observers to be implausible, bizarre or patently untrue (Jaspers, 1919/1963; American Psychiatric Association 1994). Delusions can include persecutory beliefs (see below), grandiose delusions of power or fame, bizarre beliefs (e.g. believing one is dead), and beliefs that one's thoughts are being tampered with, communicated or removed by an external agent

or force. Garety and Hemsley (1994) suggest that delusional beliefs are evaluations of internally or externally generated mental events, and that it is the *evaluation* itself that is the root of the delusion.

Paranoid/persecutory beliefs: These phenomena denote a specific subgroup of delusional belief, which constitute a substantial proportion of delusional beliefs in any given clinical sample of psychotic individuals (Ndetei & Vadher, 1984; Garety, Everitt & Hemsley, 1988; Jorgensen &Jensen, 1994; Stompe et al., 1999). Wing, Cooper & Sartorius (1974) have defined persecutory beliefs as follows: "*The subject believes that someone, or some organisation, or some force or power, is trying to harm him (sic) in some way: to damage his reputation, to cause him bodily injury, to drive him mad or to bring about his death* (p.10). Freeman & Garety (2000) add the further clarification that the individual experiencing the persecutory delusion must believe that harm is ongoing or anticipated in the future.

Speech and communication that is bizarre, disorganised, or grossly derailed (commonly labelled as "thought disorder"): This set of phenomena refers to speech, which to listeners appears jumbled or incoherent, with loosened semantic associations. In more severe manifestations it leaves the listener unable to evaluate the meaning that the individual is trying to impart. As Bentall discusses (2003; pp. 378 – 401) jumbled speech has often erroneously been equated with disorganised thinking, hence the misnomer of thought disorder.

These phenomena form the core of the clinical definition of *positive* psychotic symptoms (Crow, 1980; Lewine, Fogg & Meltzer, 1983), and can be contrasted with the group of difficulties labelled "negative symptoms" (Andreasen, 1982). These symptoms represent aspects of the individual's functioning that are diminished in comparison to individuals who have not experienced psychosis. They comprise the following phenomena:

Affective flattening: where the subjective experience and expression of emotion appears restricted in variety, intensity and frequency. The individual appears to others as "flat" with modulations of expression and affect diminished or forced, decreased spontaneous movement and speech, poor eye contact, and monotone conversation. However, although affective flattening may be a difficulty in emotionally valenced communication, it does not necessarily indicate a deficit in the subjective experience of emotion (e.g. Berenbaum & Oltmans, 1992; Kring, Kerr, Smith & Neale, 1993; Myin-Germeys, Delespaul & de Vries, 2000).

Anhedonia: the diminished ability to experience pleasure or enjoyment – this can be further subdivided into physical and social anhedonia (Chapman, Chapman, & Raulin, 1976; Blanchard, Meuser & Bellack, 1998)

Poverty of speech (alogia): This phenomenon pertains to diminished spontaneity, fluency, and content of verbal communication.

Diminished volition and lack of energy (avolition): This phenomenon refers to the lack of desire, drive, or motivation to pursue everyday tasks, social interactions and life goals.

What is schizophrenia?

In terms of clinical nosology, using DSM-IV (American Psychiatric Association, 1994) – the diagnosis of schizophrenia is indicated by the presence of two or more of the following 'characteristic' symptoms: delusions, hallucinations, disorganised speech, grossly disorganised behaviour, and negative symptoms (e.g. poverty of speech or diminished emotional reactivity) persisting for a duration of the majority of one month. Only one of these characteristics is required if delusional content is

adjudged to be bizarre, or auditory hallucinations consist of a continuous running commentary, or more than two distinct voices experienced as in conversation. Furthermore, deterioration in functioning, compared to functioning before the onset of difficulties, delineated in terms of an individuals' capacity to work, interpersonal relationships or self care must also be observed. Finally, this clinical picture must be apparent for at least six months, including more than one month where diagnostically significant 'characteristic symptoms' must be evident. That said, psychotic symptoms are not limited to the diagnosis of schizophrenia, and nor has the psychiatric conceptualisation of schizophrenia remained static over the last 100 years. It is to these facets of the phenomenology of psychosis, which has in part been determined by historical nosology of mental disorder, to which I now turn.

Historical perspectives on psychosis and the role of affect

"Dementia Præcox" & the Kraepelinian Dichotomy

Emil Kraepelin's definition of the clinical presentation called Dementia Præcox (1919), rested on the two features indicated in its title: *Dementia* (a deterioration or degeneration, of functioning) *Præcox* (occurring prematurely i.e. in early adulthood). The cardinal feature in Kraepelin's formulation was the degenerative component, manifest in "weak-mindedness" - itself a combination of "*drivelling dullness, mannerisms, indifference, lack of volition, poor judgement, diminished work capacity, and overall lack of emotional reactivity*" (Kraepelin, 1919; quoted in McGlashan, 2006). The positive symptoms were in themselves secondary to this primary degenerative process, itself a reflection of an endogenous neurobiological deterioration. Crucially, and of critical importance to the current thesis, this formulation of psychosis divided psychotic disorders according to the absence (dementia præcox/schizophrenia) or presence (manic-depressive illness/bipolar disorder) of affective disturbance – entering clinical lore as "The Kraepelinian Dichotomy". Indeed, in the 6th revision of his *Psychiatrie*, Kraepelin asserted that dementia præcox was caused by a "*severe disease process in the cerebral cortex*" (Kraepelin, 1907; p.219), whereas manic depression was a disorder with an aetiology based on faulty heredity (Greene, 2006). Intriguingly, even Kraepelin raised doubts over this dichotomy, stating in the 8th

revision of *Psychiatrie* that "*we cannot satisfactorily distinguish between these two diseases. The suspicion remains that we are asking the wrong questions*" (Kraepelin, 1920; p. 527). From the 5th revision of *Psychiatrie* onwards Kraepelin also delineated a third disorder of *paranoia* – indicative of a chronic and fixed delusional belief, without the deterioration of other faculties, such as clarity of thinking that characterised the diagnosis of dementia præcox. Consistent with Kraepelin's vacillation over the manic depression/ dementia præcox dichotomy, at the 8th revision of *Psychiatrie* he acknowledged that paranoia may not necessarily follow a chronic course.

Bleulerian "Schizophrenia" and the position of affect

Bleuler, in his monograph *Dementia Præcox, or the Group of Schizophrenias* (1911/1950), amended Kraepelin's formulation to take into account the observation that the symptoms of dementia præcox did not always occur in adolescence to young adulthood, and did not inevitably lead to terminal dementia. He instead emphasised the splitting of the experience of loss of contact with reality from its affective consequences – hence, in the Greek *schizein* (σχίζειν, "to split") and *phrēn*, (φρήν, "mind") or *schizophrenia*. Bleuler also gave greater emphasis to psychological aspects of psychosis (the influence of Freudian psychoanalytical principles on his thinking was acknowledged by Bleuler in the preface to *Dementia Præcox)* characterising schizophrenia according to four principles: the loosening of associations, ambivalence, autism and inappropriate affect. In contemporary psychiatry, the first of these phenomena could be viewed as the positive psychotic symptom of *thought disorder*, with ambivalence and autism manifestly similar to negative symptoms of affective flattening, and social withdrawal.

With regard to the fourth phenomenon of inappropriate affect, several observations can be made. Firstly Bleuler, in emphasising the splitting of the cognitive loss of reality from affect, simultaneously minimised the primacy of hallucinations and delusions, suggesting these were psychological sequelae of the disorder. Secondly, of

particular importance to the current thesis is the weight Bleuler gave to the affective characteristics of psychosis – be that via the dysregulation of affect in bipolar/manic depressive psychosis, or the apparent absence or decoupling of affect and cognition observed in the schizophrenic psychosis. Indeed, Bleuler states that "*It has been known since the early years of modern psychiatry that an "acute curable" psychosis becomes "chronic" when the affects begin to disappear"* (1911/1950; p. 40,). This inappropriate affectivity is characterised by indifference towards situations that would normally be affectively valenced, contrasted with unpredictable excessive lability or discharge of affect e.g. anger, and irritability. Importantly, Bleuler does not presuppose an absence of affect in schizophrenia – "*Thus there can be no doubt at all that the psyche's capacity to produce affects has not disappeared in schizophrenia. Therefore it should be no cause for surprise to find one or the other affect still well preserved even in the severe cases"* (p. 47) – it is the distortion of both cognitive processes and affect, coupled with their disjunction from each other that is fundamental to Bleulerian schizophrenia. It is also pertinent that Bleuler's observations were made in the context of a treatment model of long term institutional care. The cycle of affective lability, discharge, and modulation to a purported 'disappearance' of affect is analogous to the cycle of protest, despair and detachment observed by Robertson & Bowlby (1952) in their study of responses to separation in long-term institutionalised infants.

In considering factors implicated in the onset of psychosis Bleuler notes various affectively valenced phenomena: "*the inconstancy and irritability often preceded by many years the more definite and significant symptoms. . . in the beginning stages of schizophrenia, neurasthenic symptoms dominated the picture (*neurasthenia being an early grouping of psychological and physiological symptoms encompassing fatigue, anxiety, headache, impotence, neuralgia and depression) *(p.253); "chronic as well as acute depressions are found more frequently in the beginning of an outspoken illness than any other syndromes" (p. 254)* Finally, Bleuler also departed from the Kraepelinian dichotomy in placing manic depression and schizophrenia on the same continuum – with the diagnostic distinction based on the predominance or otherwise of Bleulerian schizophrenia symptoms (Bleuler 1924, Bentall 2003). This early outlining

of a dimensional approach to psychosis mirrors the stance adopted by the current thesis.

Jaspers, Schneider and First Rank Symptoms

The next historical development in the nosology of psychosis was the contribution of Jaspers (1919/1963) who proceeding from a philosophical line of enquiry asserted that diagnosis should proceed from the form of a symptom rather than the content i.e. the presence of auditory hallucinations is itself diagnostically significant, with the content of said hallucinations merely accessory. Jasper's classification of schizophrenia rested on the hypothesis that the inner life of the individual was "ununderstandable", when compared with that of the individual with a purely affective disorder. The use of the term "ununderstandable" in this context refers to the inability of the physician to empathise with the psychotic individual. Jasper's asserts that "*when we trace back behaviour, activities and the general conduct of life in an individual and try* ***to understand*** (emphasis in original) *all this psychologically and* ***with empathy*** *we always come up against* ***certain limits*** *but with schizophrenic psychic life we reach limits at a point where normally we can still understand and we find ununderstandable what strikes the patients as not at all but on the contrary well founded"* (Jaspers 1919; p.581). In contrast to the problem of establishing empathy with the individual, Jasper's conceptualisation of diagnosis rested upon establishing the presence or absence of disorder - based of combinations of symptoms. In this understanding of the phenomenology of psychosis, an interpersonal aspect can be detected – *vis a vis* the problem of establishing a shared, understandable language between the individual experiencing psychosis and their interlocutors. This mentalisation problem will be returned to in Chapters 4 and 5, albeit from the perspective of the individual experiencing psychosis, rather than the clinician. In a point of contact with the current thesis, Jaspers also gave considerable emphasis to the biographical method of assessment – whereby the symptoms and presentation of the psychiatric disorder were contextualised as part of the individual's life history (Jaspers 1910). This stance followed from Jaspers' aim of separating out mental health difficulties reflecting maladaptive personality processes (and thus potentially

understandable with reference to the individual's psyche and psychological functioning) from those caused by illnesses of putatively biological origin (Kolle 1957, Bentall 2003). Therefore, in establishing this distinction, there is a necessary need to consider both psychological functioning in general and the individual's psychodevelopmental history in particular – an approach not dissimilar to the theoretical stance of the current thesis.

Further amendments to the diagnosis of schizophrenia were made by Kurt Schneider, himself following Jasper's (1919/1963) philosophical model. This led Schneider to classify the necessary and sufficient diagnostic symptoms of psychosis as the "First Rank symptoms" (Schneider, 1959):

- Audible thoughts
- Voices heard arguing
- Voices heard commenting on one's actions
- The Experience of influences playing on the body
- Thought withdrawal
- Thought insertion - Thoughts are ascribed to other people who intrude their thoughts upon the patient
- Thought Broadcast
- Delusional perceptions

It is of note that the above symptoms mirror Kraepelinian nosology, in the exclusion of affective components. Schneiderian first rank symptoms are emphasised in the diagnostic criteria for schizophrenia in both the ICD (e.g. ICD-10; World Health Organization, 1992) and DSM (e.g. DSM-IV; American Psychiatric Association, 1994) classification systems. The DSM system in the USA has also emphasised the role of the Kraepelinian dichotomy, in part based on the "neo-Kraepelinian" assertion that

reified mental illnesses as psychopathological entities with underlying biological origins (Klerman 1978).

The positive negative distinction and diagnostic specificity

An alternative position was articulated by Crow (1980) who emphasised the division between positive symptoms such as hallucinations and delusions, and negative symptoms, similar to those delineated by Andreasen (1983). The positive/negative distinction rests upon a conceptualisation of phenomena and behaviour in psychosis as either present but undesired (positive symptoms) or absent but desired (negative symptoms). In Crow's conceptualisation, it is negative symptoms that are biologically derived, and lead to the chronic course characterising the diagnosis of schizophrenia. Furthermore, under Crow's rubric all psychoses are located on one dimension (1986), from purely affective psychoses at one pole, to schizophreniform psychoses with profound negative symptomatology occupying the opposite pole. Subsequent to Crow's hypothesis, a further clustering of symptoms – "*disorganization*" - has also been proposed, representing aspects of thought disorder, alogia, attentional difficulties, poverty of thought content, disorganised behaviour and incongruent displays of affect (Liddle 1987). However, robust statistical evidence for distinct factors in psychosis has not to date been demonstrated. Although the division between positive and negative symptoms has demonstrable validity (e.g. Malla et al., 1993; Lenzenweger & Dworkin, 1996), attempts to categorise patients by predominance of positive or negative symptoms appear to be of limited validity (Andreasen 1985) i.e. most individuals present with a mix of both symptom clusters, rather than "pure" negative or positive symptoms. Furthermore, statistical attempts to delineate underlying factors beyond the positive/negative symptom dichotomy (mostly involving samples of individuals with a diagnosis of schizophrenia) have so far failed to produce consistent findings e.g. Peralta, Cuesta & Farre, 1997; Nakaya, Suwa & Ohmor, 1999).

A further unhelpful consequence of the Kraepelinian dichotomy has been to reify the division between affective and non-affective psychoses. However, this has repeatedly been shown to proceed from faulty logic (Greene 2007). For instance, consistent with Crow (1986) there appears to be no point of discontinuity between schizophrenia and bipolar disorder (Kendell & Brockington, 1980; Kendell 1991), Diagnostic criteria for psychotic disorders also include a proliferation of diagnoses that include elements of both Kraeplinian schizophrenia and manic-depressive psychoses. These include a categorisation where both affective and psychotic disturbance are present – the diagnosis of "Schizoaffective disorder" (Kasanin, 1933). The ICD-10 category of "Acute and Transient Psychotic Disorders" and DSM-IV "Brief Psychosis" also transcends the Kraepelinian dichotomy, and indeed this diagnosis is based on several prior classifications of cycloid psychoses, *boufée délirante*, reactive/psychogenic psychosis, emotional psychosis, and good prognosis/remitting schizophrenia (Marneros & Pillman, 2004, Marneros 2006). Importantly, these brief psychoses also seem to have a substantial social environmental component – e.g. the onset may be linked to psychosocial stressors rather than an endogenous 'disease' process (Strömgren 1986).

In addition, other diagnostic categories not featured within the traditional diagnostic range of psychosis (e.g. the ICD-10 F.20 –F.29 and DSM-IV Psychoses; Codes 295 – 299) feature psychotic symptoms. For instance, delusional beliefs, particularly with a persecutory or punishment based theme, are observable in cases of severe depression (Kuhs, 1991; Lattuada, Serretti, Cuskin & Gasperinni, 1999). Voice hearing has been shown to be present in bipolar disorder (Goodwin & Jamieson, 1990), Post Traumatic Stress Disorder (PTSD; Butler, Meuser, Sprock & Braff 1996), borderline personality disorder (e.g. Zanarini, Gunderson & Frankenburg, 1990; Yee, Korner, McSwiggan, Meares & Stevenson 2005); and in dissociative disorders, to a greater degree than in diagnoses of schizophrenia (e.g. Ellason & Ross 1995). Reciprocally, psychosis has also been shown to have strong co-morbidity with depression, (Siris, 2001), PTSD symptomatology (Morrison, Frame & Larkin, 2003) and dissociative phenomena (e.g. Hunter, Sierra & David 2004; Gumley & Liotti, 2008). Indeed, it would appear that complex mental health difficulties display significant overlap in

terms of clinical features, suggesting that there may be common aetiological factors which influence the phenomenology of different psychopathologies, although the precise psychobiosocial mechanisms by which such factors exert their influence presumably differ.

Furthermore, the mainstream psychiatric conceptualisation of psychosis and particularly schizophrenia has been repeatedly critiqued over time particularly in terms of its validity and utility in treating the sufferer's distress, with numerous researchers and clinicians advocating a focus on the subjective nature and content of the presenting symptoms (e.g. Laing, 1959; Boyle, 1990; Bentall, 1990; 2003). Indeed, the concept of schizophrenia has been repeatedly criticised on the grounds that it lacks reliability and validity – as a result of gross inconsistencies in symptom profile, aetiology, prognosis and consistency of treatment (summarised in Bentall, Jackson, & Pilgrim, 1988; Read, 2004). Congruent with the above inconsistencies in nosology, it has been repeatedly proposed that a more valid and constructive way of grouping and investigating psychotic experiences is to emphasise dimensional constructs of phenomena and their effects on behaviour, thoughts and feelings, rather than focussing on discrete categories (e.g. McGorry, 1998; Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001; Bentall 2003; Pilgrim 2000). Again echoing Crow's (1986) unidimensional psychosis, the disjunction between the diagnostic status of the psychoses and research into symptomatology/phenomenology has fuelled a long standing debate regarding whether psychotic symptoms are discrete and categorical from "normal" behaviour" or dimensional, on a continuum from "normal" behaviour to highly maladaptive actions (Strauss. 1969; Maher 1974; Bentall 1990. 2003). This critique is also supported by research suggesting that psychotic phenomena are experienced, at a more attenuated level within non-clinical population (Johns & van Os, 2001; Freeman et al., 2008).

Finally, the diagnostic pessimism inherent in the description of Kraeplinian schizophrenia/dementia præcox model may also be erroneous, particularly in the early stages of psychosis. Indeed, counterpoints to this pessimism have been apparent

since shortly after Kraepelin articulated his theory. Bleuler stated that although "*the general direction of the course of this disease is toward a schizophrenic deterioration. . . constant advances, halts, recrudescences, or remissions are possible at any time*" (1911/1950; p.245). Pioneering American psychiatrist Harry Stack Sullivan stated: "*The Kraepelinian diagnosis by outcome has been a great handicap, leading to much retrospective distortion of data, instead of careful observation and induction" (*1927; p. 760*)*. This historical critique is also supported by modern outcome literature, particularly with reference to the early stages of psychosis.

Modern perspectives on psychosis and outcome

In contrast to the clinical picture implicit in the Kraepelinian tradition, in the last 20 years evidence has accumulated suggesting that long-term outcome in psychosis and schizophrenia is subject to considerable variation within samples – with complete recovery in historical samples varying from 30 – 72% (Bleuler, 1972; Ciompi, 1980, 1984; Harding et al., 1987; McGlashan, 1988; Harrison, Hopper, Craig, Laska, Siegel, Wanderling, et al., 2001; Torgalsboen, 1999). There is also considerable heterogeneity of outcome between samples in different cultures and geographic areas, (e.g. Jablensky, Sartorius, Ernberg, Anker, Korten, Cooper, et al., 1992; Harrison et al., 2001) – with data suggesting that outcome in developing areas is better than in the developed world although this proposition has been challenged on methodological grounds. (Warner, 1985; Cohen, Thara, Patel & Gureje 2008; Jablensky & Sartorius 2008). Furthermore, historical suggestions that intensive clinical interventions may ameliorate psychotic symptomatology, and maximise potential for recovery (e.g. Sullivan, 1927; Cameron, 1938; Meares, 1959; Docherty 1978) have received renewed emphasis, enshrined within an ethos of "early intervention" in the first episode of psychosis (FEP) (see Edwards & McGorry 2002; Addington, 2007). Early intervention for FEP proceeds from a theoretical position *"that psychotic disorders are dynamic, psychobiosocial, reversible processes, where the psychotic breakdown is only one stage in the illness process, which can be prevented, delayed and reversed"* (Johannessen, 2004 p.318). Furthermore, early intervention is aimed at focussing treatment resources at the first five years after the onset of

psychosis, particularly the first 3 years – the timeframe which constitutes the "Critical Period" (Birchwood, Todd & Jackson 1998) - where treatment efficacy may be maximised in terms of primary outcomes such as reducing the potential for psychotic relapse and also ameliorating the likelihood of secondary disabilities such as post psychotic depression (Iqbal 2000a), social anxiety (Karatzias, Gumley, Power & O'Grady 2007), PTSD (Jackson, Knott, Skeate & Birchwood 2004), and preserving quality of life (Malla & Payne 2005). As Addington summarises: "*the possible benefits of early intervention might include reduced morbidity, more rapid recovery, better prognosis, preservation of social skills, family and social supports and decreased need for hospitalisation"* (2007; p. 294).

Indeed early intervention programmes have become an established part of mental health services in many liberal democracies, including the UK, and clinical guidelines for the treatment of FEP have been formulated (e.g. International Early Psychosis Association Writing Group, 2005). However, it is regrettable that integrated early intervention treatment models are not as yet *de rigeur*. Indeed, medication driven treatment is still the dominant intervention in many countries, as evidenced by the economic data regarding prescription patterns for anti-psychotic medication in the USA (Mosher, Gosden, & Beder, 2004). Early intervention also deviates from pioneering integrated treatment models such as the Soteria Project (Mosher, 1999; Bola & Mosher, 2003), Soteria Bern (Ciompi, 1997) and the Finnish Needs-Adapted Approach (Lehtinien, Aaltonen, Koffert, Räkköläinen, Syvälahti, & Vuorio, 1996), in adopting a comparatively greater emphasis on early provision of antipsychotic medication, and in cases of inpatient admissions relying on hospital based care. However, reflect the UK emphasis on increased provision of early intervention (Department of Health, 2000), this paradigm represents the clinical context in which this thesis is grounded, from which the aim is to explore the value of applying an established theoretical construct (attachment theory, Bowlby, 1969, 1973, 1982, 1988) to FEP, presenting a novel perspective upon the psychological processes involved in the development of, and adjustment to the experience of psychosis.

Emotion and affect in psychosis

If one follows the observations of Bleuler (1911/1950) on the role of affect in schizophrenia, and Jaspers' (1919/1963) emphasis on the problem of empathy, it seems paradoxical to assert that schizophrenia is "non-affective". Furthermore, given the renewed interest in psychological factors in psychosis, it is pertinent that most psychologically informed theories of psychopathology, regardless of the clinical problem under consideration, proceeded from the understanding that affect and cognition are reciprocally linked (e.g. Freud, 1895, 1911; Beck 1977; Ciompi, 1988). It has therefore been argued that schizophrenia is no different, as Birchwood states: *"emotional dysfunction is pervasive in non-affective psychosis"* (2003; p.273). In addition to the experience of positive psychotic symptoms, individuals with non-affective psychosis also experience depression, social anxiety, PTSD, suicidal thinking, and feelings of shame, guilt and hopelessness relating to their experiences (e.g. Drayton, Birchwood & Trower, 1998; Birchwood, Iqbal, Chadwick & Trower, 2000; Cosoff & Hafner, 1998). One study reported that 45% of a recently hospitalised, acutely psychotic sample, naïve to anti-psychotic medication, displayed depressed mood (Leff, Tress & Edwards, 1988). In addition, the phenomenon of Post Psychotic Depression appears to occur in around 50% of first episodes of psychosis (Birchwood et al., 2000), and the 'prodrome' of schizophrenia often includes affective disturbance (e.g. Häfner, Nowotony, Löffler, an der Heiden, & Maurer, 1995).

A further persuasive line of evidence for the significance of affective dysfunction and dysregulation in psychosis arises from studies of the early signs of relapse in psychosis (e.g. Docherty, Van Kammen, Siris, Marder, 1978; Herz & Melville, 1980; Birchwood, Smith, Macmillan, Hogg, Prasad, Harvey, et al., 1989; Tait, McNay & Gumley 2002). A consistent finding in these studies was that relapse in psychosis was preceded by emotionally driven early signs such as increasing fear, anxiety, helplessness, behavioural sequelae such as poor sleep, irritability and social withdrawal; leading to increasing fragmentation of psychological well-being, disorganisation and loss of agency, and finally the (re) –emergence of frank psychotic symptoms. Following on from the observation that the early detection of relapse is

improved when the detection strategy encompasses monitoring of low-level psychotic experiences, Gumley and Schwannauer (2006) suggest symptoms and behaviours consistent with the experience of emotional distress may represent the emotional reaction to the re-emergence of psychotic experiences. Again, the close interplay between psychotic experiences and affective dysregulation is implicit within this formulation.

Indeed, the experience of positive symptoms such as hallucinations and delusions themselves appear to have an emotional component – a facet of psychotic symptoms acknowledged even by Eugen Bleuler, writing that "*The usual occurrence is that the 'voices' threaten, curse, criticize and console in short sentences or abrupt words. . . It is in this way that they express ever the same wishes, hopes and fears"* (1919/1950; p.96)". Freeman & Garety (2003) have outlined the numerous points of convergence between neurotic and psychotic disorders, with the aim of highlighting the value of considering emotional processes in the formation, and maintenance of psychotic difficulties. Indeed, in a wholesale reversal of Jaspers' and Schneiderian dogma, they propose that the content of delusions and hallucinations may in some cases, be directly representative of the emotional state of the individual. Thus the content is as important, if not more so than the structure of the psychotic belief. In Freeman & Garety's conceptualisation the form of delusional beliefs is a reflection of the underlying emotional state, and to a lesser extent auditory hallucinations also reflect the emotional state.

However, Freeman and Garety stop short of giving primacy to affective disturbance in psychosis, instead viewing emotion as more akin to a mediating filter between the expression of psychotic symptoms and a primary dysfunction in cognitive processing: "*common to both psychotic symptoms* (hallucinations and delusions) *may be the importance of emotional processes in the appraisal of delusions and hallucinations, as has been found in the case of panic disorder"* (Freeman & Garety, 2003; p. 941). Furthermore, this treatment of emotion also fails to appraise the complexity of emotional states such as anger, guilt, and fear – and the interpersonal context in which these emotions arise e.g. in response to loss, trauma and other stressful life

events. On a neurobiological level, the neural substrates of emotional processing are evolutionarily and phyllogenetically older than the higher order cognitive functions (e.g. MacLean, 1990; LeDoux 1996). Therefore, it follows that if emotional states are of relevance to the understanding of psychotic phenomena and symptoms, it is at least possible that emotional dysfunction drives the maladaptive socio-cognitive processing expressed in the content of psychotic symptoms. As I expand upon in the following chapters, the symptoms and sequelae of psychosis are often interpersonal in nature, and also potentially linked to affect (dys)regulation.

Cognitive models of symptoms

Cognitive models of psychosis take as their starting point the observation that the clinical approach to treatment of psychosis can best be interpreted according to the most prominent symptoms displayed by the individual, in tandem with the emotional dysfunction and distress displayed by individual as a consequence of their experience of psychosis, and that this distress can is often driven by the *interpretation* the individual makes of their experiences (e.g. Bentall, 2003; Morrison 2003). This approach is grounded within a symptom-based, dimensional conceptualisation of psychosis. In particular, the work of Bentall, Garety and their colleagues and collaborators was integral in articulating theoretical models of the positive symptoms of psychosis, grounded in contemporary cognitive psychological concepts including inferential reasoning biases (Garety & Freeman, 1999); attributional biases (reviewed in Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001), faulty source monitoring (Hemsley 1994), and social cognitive impairments in understanding the mental states of others (Frith 1992; and see Chapter 5 for a more extensive discussion from a developmental perspective).

With regard to delusions, Garety and Freeman (1999) reviewed evidence that individuals with delusional ideation (including paranoia), display a socio-cognitive reasoning bias towards "jumping to conclusions" – that is to say that the individuals makes decisions about social situations quicker, and with less supporting evidence than non-delusional controls. This has been interpreted from an evolutionary

perspective, as a maladaptive strategy for attending to potential threat, with the side-effect of precipitating a confirmatory reasoning bias towards perceiving threat to be present (Dudley & Over, 2003). This is supported by evidence suggesting that the jumping to conclusions bias is stronger in relation to emotionally salient stimuli (Dudley, John, Young, & Over, 1997; Young & Bentall 1997). Frith (1992) articulated the argument, grounded in cognitive neuropsychiatry, that individuals with psychosis display subtle "Theory of mind" deficits, particularly in the area of social cognition, i.e. persons who are experiencing acute persecutory paranoia have difficulties understanding the intentions and motivations of others, a proposition that has subsequently been empirically confirmed (see Sprong, Schothorst, Vos, Hox, & van Engeland 2007 for a meta-analysis).

Bentall and colleagues (2001) have also presented considerable evidence that individuals with paranoid delusions display a significantly exaggerated "self-serving bias" compared to non-deluded controls, ergo, paranoid individuals make notably *external* attributions for negative events, usually attributed to other people (e.g. "I was late for the lecture because *the City Council* changed all the traffic lights on my way to red"), and heightened internal attributions for positive events (Kaney & Bentall 1989; Kinderman & Bentall 1997). Interestingly, there is an overlap between the aforementioned theories in the observation that individuals with persecutory delusions have a bias towards selective attention and recall of threat related information (Kaney, Wolfenden, Dewey, & Bentall, 1992). Therefore, it would appear individuals experiencing paranoid delusions find social interactions difficult to interpret, attend to negative information more readily, reach conclusions regarding the intentions of others quickly (and possibly erroneously) and attribute negative outcomes to others.

In terms of auditory hallucinations, psychological models have centred on explaining the misattribution of one's internal monologue to an external "alien" source. Evidence from experimental studies where participant's speech is manipulated to be played back to them has indicated that individuals who experience hallucinations are more likely to identify the source of the replayed voice as being someone else, rather than themselves (Johns, Rossell, Frith, Ahmad, Hemsley & Kuipers, et al., 2001).

Furthermore, it has been suggested that individuals who hear voices experience hallucinations as anomalous intrusions into conscious awareness of material (possibly triggered by situational factors) arising from deficits in moment-by-moment integration of new input with stored memories (Hemsley 2005). The content of voices is also emotionally valenced, as evidenced by findings that that the majority of individuals hearing voices also display low self-esteem and negative voice content (Close & Garety 1998), and the observation that emotional distress in individuals with voices is most closely tied to beliefs about the voices (Chadwick & Birchwood 1994). Finally, Morrison (1998) has pursued a programme of research into voice hearing which has considered the factors which maintain voice hearing experiences suggesting that threatening misinterpretations of voices are themselves anxiogenic, thus provoking the experience of hallucinations. Furthermore, these misinterpretations are maintained by heightened self-focus and the use of maladaptive safety behaviours that also serve to reinforce the vicious cycle (Morrison 1998). Although the cognitive conceptualisation has been of theoretical and clinical value, particularly informing psychological approaches to treatment (see below), the role of affect within psychosis remains underdeveloped. Although emotional distress is by no means neglected, the primary focus of cognitive models of symptoms is the interpretation and appraisal of experiences, rather than the interpersonal and emotional context in which these experiences may arise. Echoing the earlier critique of Freeman and Garety (2003), it may be of value to explore the various factors that may influence the emergence of affective distress in psychosis; and therefore how this affective dysregulation then interacts with cognitive appraisals and misinterpretations in psychosis.

Psychological Interventions for Psychosis

One consequence of the renewed interest in psychological approaches to psychosis concerns the use of psychologically informed therapeutic interventions, particularly family therapy and Cognitive Behavioural Therapy (CBT). Family therapy has been rigorously evaluated in schizophrenia, particular with a view to enhancing relapse

prevention. A meta-analysis of 25 studies of family interventions for relapse suggested that family interventions yielded benefits above routine care at 6,9,12,18 and 24 months after therapy, with better results for longer interventions, compared with short term (less than 3 months) treatment programmes (Pitschel-Walz, Leucht, Bäuml, Kissling & Engel, 2001). In five studies cited by Pitschel-Walz and colleagues, the combination of family and individual intervention was significantly more efficacious than routine care, although there was no significant difference in relapse rates when compared to family intervention alone (Cranach, 1981; Kelly & Scott, 1990; Hogarty, et al., 1991; Buchkremer et al. 1997; Pitschel-Walz, Kissling & Bäuml, 1998). Furthermore, family interventions have also been demonstrated to have efficacy in preventing relapse in bipolar disorder (e.g. Clarkin, Carpenter, Hull, Wilner & Glick, 1998; Colom, Vieta, Martinez-Aran, Reinares, Goikolea, Benabarre, et al., 2003; Miklowitz, Simoneau, George & Richards, 2000, Miklowitz, George, Richards, Simoneau, &,Suddath, 2003; Rea, Tompson, Miklowitz, Goldstein, Hwang, & Mintz, 2003).

Since the early 1990's numerous studies have reported on the use of CBT in the treatment of psychosis, focussing on a multitude of outcome domains including: drug-resistant positive symptoms (e.g. Durham, Guthrie, Morton, Reid, Treliving, Fowler, et al., et al., 2003; Garety, Kuipers, Fowler, Chisholm, Freeman, Dunn, et al., 1998; Lecompte, 1996; Pinto, Mennella, Giorgio, & DeSimone, 1999; Sensky Turkington, Kingdon, Scott, Scott, Siddle, et al., 2000; Tarrier, Haddock, Morrison, Hopkins, Drake & Lewis, 1999; Trower, Birchwood, Meaden, Byrne, Nelson & Ross, 2004; Turkington, Kingdon & Turner, 2002), the development of insight (Kemp & David 1996; Turkington et al., 2002), and the prevention of relapse or readmission (Bach & Hayes, 2002; Buchkremer, Klingberg, Holle, Schulze-Monking, & Hornung, 1997; Gumley, O'Grady, McNay, Reilly. Power & Norrie 2003; Hogarty et al., 1997), Furthermore, CBT interventions have been delivered in the acute phase of psychosis (Drury et al., 1996; Haddock, Tarrier, Morrison, Hopkins, Drake, & Lewis, 1999; Lewis, Tarrier, Haddock, Bentall, Kinderman, Kingdon, et al., 2002; Startup, Jackson & Bendix, 2004); in a sample of individuals with comorbid substance abuse difficulties (Barrowclough, Haddock, Tarrier, Lewis, Moring, O'Brien, et al., 2001; Haddock,

Barrowclough, Tarrier, Moring, O`Brien, Schofield, et al., 2003), at group as opposed to individual level (Bechdolf, Knost, Kuntermann, Schiller, Klosterkotter, Hambrecht et al., 2004; Daniels, 1998), and with the aim of preventing transition to psychosis (McGorry, Yung, A, Phillips, Yuen, Francey, Cosgrave, et al., 2002; Morrison, French, Walford, Lewis, Kilcommons, Green, et al., 2004), The EDIE study of Morrison and colleagues (2004), in contrast to McGorry and colleagues (2002) is also notable for showing favourable outcomes in preventing transition to psychosis without the provision of antipsychotic medication.

CBT is now viewed as a clinically effective treatment for the distress caused by the experience of psychosis (e.g. Dickerson, 2000, 2004; NHS Centre for Reviews and Dissemination, 2000; Rector & Beck, 2001; Thornicroft & Susser, 2001; Pilling, Bebbington, Kuipers, Garety, Orbach & Morgan, 2002; Gould, Meuser, Bolton, Mays & Goff 2001; Tarrier & Wykes, 2004; Addington & Gleeson, 2005b; Pfametter, Junghan & Brenner, 2004; Zimmerman, Favrod, Trieu & Pomini 2005; Gaudiano, 2006). However, in a fine-grained meta-analytic review of 30 papers considering the results of 19 trials of clinical randomized control trials of CBT for schizophrenia, the results suggest scope for further refinement of the treatment (Jones, Cormac, Silveira da Mota Neto & Campbell, 2008). Although CBT was effective in improving mental state over medium term, these results were not significantly different from control conditions at 1 year. Similarly, although CBT did significantly decrease the risk of staying in hospital, it did not significantly reduce relapse and readmission compared to standard care. Therefore, the author's of this review make the recommendation that further research is needed to fully evaluate the benefits of CBT for psychosis. It is of note that they also observe that *"data on quality of life, social functioning, occupational status, general impression of carer/other, unwanted effects, such as anxiety, depression and dependence on the relationship with the therapist, staff fatigue and economic outcomes would be very welcome"* (Jones et al., 2008; p.15). This position is supported by the largest meta-analysis of CBT for psychosis to date, involving a synthesis of findings from thirty four trials (Wykes, Steel, Everitt, & Tarrier, 2008). The authors again report a robust modest effect of CBT on positive symptomatology, with additional evidence for small to moderate effect sizes for improvements in

negative symptomatology, global functioning, mood and social anxiety. In addition, this meta-analysis also reported that CBT did not lead to improvements in level of hopelessness, and in three of the four studies included in the analysis in fact produced a negative effect. Finally, a review of long-term follow-up studies of CBT in Scotland reported that, for psychosis, poorer long-term outcomes were associated with being younger, having a longer duration of illness, elevated scores on general psychopathology at post-treatment and poorer social adjustment prior to treatment (Durham, Chambers, Power, Sharp, Macdonald, Major, et al., 2005). With regard to bipolar disorder a recent meta analysis involving five studies of comparing CBT to treatment as usual (Cochran, 1984; Lam, Bright, Jones, Hayward, Schuck, Chisham, et al., 2000; Lam, Hayward, Watkins, Wright, & Sham, 2005; Scott, Paykel, Morriss, Bentall, Kinderman, Johnson, et al., 2006) and one study comparing against waiting room control (Scott, Garland & Moorhead 2001) suggested this intervention showed significant gains over control conditions in preventing relapse (Benyon, Woolacott, Duffy, & Geddes, 2008).

Although CBT has received considerable attention with regard to the psychological treatment of psychosis, it would be remiss to present it as the only psychotherapy for psychosis. Research into outcomes for psychodynamic treatment approaches, although limited by small sample sizes, suggest that this treatment approach is also linked to improvements in overall functioning for individuals with a diagnosis of schizophrenia, with or without the provision of antipsychotic medication (Gottdiener & Haslam, 2002). Furthermore treatment paradigms grounded within a psychological approach such as the Soteria model (Mosher, 1999), report better outcomes in symptomatology, overall functioning, and employment than comparable treatment as usual (Bola & Mosher, 2003). These treatment approaches place a comparatively greater emphasis on interpersonal processes than CBT interventions. By extension, developing psychological therapies for psychosis that are efficacious in improving outcome in these domains may require further scrutiny of emotional, interpersonal and psychodevelopmental aspects of psychosis – an observation already made in the literature on psychotherapeutic approaches to recovery and staying well in psychosis (e.g. Gumley & Schwannauer 2006). ,

In summary, the clinical presentation of psychosis has undergone several revisions over the course of the 20th century into the 21st century, with the Kraepelinian dichotomy of schizophrenic and manic depressive psychoses as unrelated diagnostic entities increasingly untenable. This position creates three important consequences. Firstly, there is now a substantial body of evidence suggesting psychotic phenomenology and symptomatology lie on a continuum (e.g. Johns & van Os, 2001). Secondly, in contrast to viewing psychotic symptoms purely in terms of form, it may be of value to consider individual psychotic symptoms in the context of how both their *content* and *form* impact on the individual's functioning. Finally, returning to Bleuler's (1911//1950) position, there are grounds for a reappraisal of the role of affect/emotions in psychosis. The growth in interest in the application of psychological models to the phenomenology and treatment of psychosis holds considerable promise for yielding new insights into the symptoms of the disorder. Furthermore, clinical resources and research aims in psychosis are increasingly targeted towards the early phases of psychosis, particularly the first episode, and the five years following from the index episode – the "critical period" (Birchwood, et al., 1998). It is to this "critical period" that I wish to turn in the following chapter.

Chapter 2:

Early Intervention for Psychosis and "The Critical Period"

The unfolding of early intervention as a treatment paradigm

The *raison d'être* of early intervention for psychosis is to promptly offer a broad range of treatments, both pharmacological and psychological, to individuals who, usually in early adulthood, have just received a first diagnosis of schizophrenia or other psychotic disorders (Addington, 2007). The paradigm emerged in the early 1990's as a response to concerns regarding treatment delay, and lack of access to the full range of treatment options for psychosis (McGorry, Edwards, Mihalopoulos, Harrigan, & Jackson, 1996; Lehman & Steinwachs, 1998). In addition, the individual experiencing a first episode of psychosis also presents with substantial subjective distress (Vracotas, Schootz, Joober, & Malla, 2007). By intervening at first point of diagnosis, with interventions appropriate to the individual's age, initial presentation, and life circumstances, the goal of early intervention is to create a treatment plan that maximises the possibilities for amelioration of psychotic symptoms, and preserves or restores quality of life, thus improving prognosis in the first five years which constitute the "critical period" for recovery (Birchwood, Todd & Jackson, 1998).

Furthermore, early intervention seeks to ameliorate the effects and/or prevent the emergence of secondary difficulties such as depression (e.g. Birchwood et al., 2000), social anxiety (Cosoff & Hafner, 1996), substance misuse (Cantwell, Brewin, Glazebrook, Dalkin, Fox, Medley, et al., 1999; Verdoux, Tournier & Cougnard, 2005), and suicidality (e.g. Mortensen & Juel, 1993). In addition, early intervention aims to address the crucial issue of relapse in psychosis. Relapse occurs in 20-35% at 1 year, 50-65% at 2 years and 80% at 5 years (Robinson et al., 1999). Recovery from subsequent episodes of psychosis is less satisfactory than the first, with individuals being more likely to experience persisting and distressing psychotic experiences (Wiersma, et al., 1998). Therefore, one of the areas for early intervention in terms of

promoting recovery and staying well is in assisting the individual in identifying the early signs of relapse, including cognitive and emotional early signs (e.g. Gumley & Schwannauer 2006), and providing timely and prompt intervention to prevent full blown relapse from occurring.

Evaluation of early intervention treatment paradigms remains an ongoing process, with evaluation encompassing both more traditional monitoring of symptom improvement, and a renewed emphasis on broader outcome domains such as social functioning, and quality of life (reviewed by Malla & Payne, 2005). Two randomised control trials of early intervention paradigms compared to treatment as usual have been published, representing data on 691 individuals with a first episode of psychosis (Petersen, Jeppesen, Thorup et al., 2005; Craig, Garety, Power et al., 2004). The Danish OPUS trial produced 1 and 2-year follow-up data suggesting that the early intervention group had better treatment adherence, reduced positive and negative symptoms, significantly lower levels of hopelessness, and better overall outcome – as measured by a collated global outcome measure of symptoms, substance use, GAF rating, employment/education and accommodation (Thorup, Petersen, Jeppesen, Øhlenschlæger, Christensen, Krarup, et al., 2005a; Nordentoft, Jeppesen, Abel, Kassow, Petersen, Thorup et al., 2002). The second study, the London-based LEO trial, investigated the effect of early intervention versus standard community mental health team intervention upon remission and relapse. This study reported no difference between treatment models on relapse; however readmission and drop-out rates were lower for the early intervention group. Although limited by reliance on casenote data, improvements in social relationships, vocational functioning and medication adherence were also noted in the early intervention group (Garety, Craig, Dunn, Fornells-Ambrojo, Colbert, Rahaman, et al., 2006).

Uncontrolled studies of FEP services, or historical comparisons with prior treatment models have reported improvements from dedicated FEP interventions in terms of reduced hospitalisation – both in frequency (Cullberg, Mattsson, Levander, Holmqvist, Tomsmark, Elingfors, et al., 2006) and duration (Power, Elkins, Adlard, Curry,

McGorry, & Harrigan, 1998, Carbone, Harrigan, McGorry, Curry, Elkins, 1999); improvements in terms of positive symptoms, negative symptoms, social and functional outcome (e.g. Cullberg et al., 2006; Addington, Young & Addington; Addington, Van Mastrigt, & Addington, 2003b, 2004; Malla, Norman, Manchanda, et al., 2002a; Malla, Norman, Manchanda & Townsend, 2002b; Malla, Norman, Schmitz, Manchanda, Ardevans, Takhar, et al, 2006). However, as I will discuss in this and the next chapter, outcome in FEP is mediated by several other factors including Duration of Untreated Psychosis (DUP; Marshall, Lewis, Lockwood, Drake, Jones & Croudace, 2005; Perkins, Gu, Boteva, & Liebermann, 2005), and premorbid functioning (see Chapter 3). Furthermore, as Addington (2007) acknowledges, ongoing challenges remain, particularly in terms of how long "early" intervention should last, and also how longitudinal outcomes are maintained in the medium to long term. To date there have been few follow-ups of dedicated FEP intervention services beyond 2-3 years (for an 8 year follow-up of the Australian EPPIC cohort, see Harris, Henry, Harrigan, Purcell, Schwartz, Farrelly, et al., 2005).

From the above précis of the early intervention rationale one can construct a theoretical trajectory of an individual's progress through the early stages of psychosis, reflected in the phase specific goals of early intervention. Firstly, the acutely distressing experience of positive psychotic symptoms requires alleviation. Thereafter, the individual enters a phase of adjustment to the experience of psychosis and the effect of the disorder on his/her life circumstances, wherein engagement between the individual and early intervention services is paramount. It is in this phase that intervention focuses on reducing secondary difficulties. The current thesis also contends that it is in this phase that the individual adapting to the experience of psychosis may begin to reflect upon the circumstances of the emergence of his/her psychosis and their route into treatment. The next and final phase of early intervention is to assist the individual in minimising the risk of relapse, and encouraging staying well; grounded in sensitivity to, and understanding of the personal and societal context of the individual. It is also fundamental to early intervention strategies that there is an appreciation of the fluidity of these stages - that there are a multitude of trajectories into, and out of psychosis and therefore the

temporal context of adjustment and recovery will vary between individuals. In addition, clinical and social recovery are desynchronous and partially independent (Strauss & Carpenter, 1977; Shepherd, Watt, Falloon, & Smeaton, 1989; Birchwood et al., 1998). Indeed, neither baseline clinical symptoms nor age or gender predict social outcome in FEP at five years, although social functioning prior to onset of FEP does predict social outcome (Schubart, Krumm, Biehl & Schwartz, 1986; Biehl, Maurer, Schubart, Krumm, & Jung, 1986). Thus it is the contention of the current thesis that understanding the individual context of the emergence of psychosis, and an individual's social circumstances prior to psychosis, are of value both in understanding adjustment and recovery in FEP.

Adjustment to psychosis: Engagement, recovery, and emotional adaptation

As articulated in the work of Birchwood and colleagues (1998, 2000) one of the key aspects of the critical period is represented by adjustment to psychosis, and engagement with clinical services. Indeed, one facet of the literature on recovery in psychosis has focussed on how individuals adjust to the experience of psychosis, and following from this, how they engage with the reciprocal therapeutic interchange between themselves and mental health services. Indeed, the quality of the engagement between the individual and mental health services is a key facet of maximising potential for a good outcome. Poor engagement with mental health services and unplanned discontinuation of medication have been shown to be risk factors for relapse and poor outcome generally (e.g. Robinson, Woerner, Alvir, Bilder, Hinrichsen, & Lieberman, 2002,). McGlashan and colleagues proposed that engagement with services, and attitudes towards treatment could be broadly defined by a binary distinction between two forms of coping with the experience of psychosis: "Integration" and "Sealing Over". (e.g. McGlashan, Levy, & Carpenter, 1977; McGlashan 1987)

In this context, "Sealing Over" can be conceptualised as an avoidant stance towards the experience of psychosis, whereby symptomatic and functional impact upon the

individual is down-played and minimised, reminders of the experience of acute illness, or precipitant 'triggers' of the first episode are avoided, and there is a reticence towards exploring possible underlying emotional difficulties. In contrast, an individual with an "Integrative" stance is more likely to assimilate and contextualise the experience of psychosis according to their sense of self, interactions with others and the individual's socio-environmental circumstances at the time of the first episode. The integrative stance is also characterised by proactive attempts to manage any ongoing difficulties, take active steps towards minimising relapse, and facilitating recovery. However, the two constructs are not mutually exclusive, and evidence derived from a self report measure of sealing over and integration has shown that an individual may move from an integrative stance to a sealing over stance over the first 6 months or vice versa (Tait, Birchwood, & Trower, 2003). Furthermore, the sealing over stance was not related to the severity of psychotic symptoms or insight into ones condition, but was indicative of poorer engagement with services - as indicated by lower levels of help-seeking, collaboration, availability and treatment adherence, compared with those with an integrative stance. The same authors noted that sealing over at 3 months after onset of treatment predicted poor engagement with health services at 6 months. However, a shift towards a sealing over style between 3 and 6 months post treatment initiation was also predictive of an improvement in psychotic symptomatology.

A further facet of adjustment to psychosis concerns emotional function and dysfunction. In a study of 105 individuals with FEP, elevated levels of subjective distress were significantly associated with heightened levels of depression, anxiety and lower self-esteem (Vracotas et al., 2007). Depression, which becomes prominent after the resolution of acute psychotic symptoms was a feature of more than 50% of a recent sample of FEP clients (Birchwood et al., 2000). In addition, in the Northwick Park study (Johnstone, Crow, Johnston & MacMillan, 1986), depressive *delusions* were associated with a *low* rate of early relapse; whereas depression and hopelessness was associated with *higher* rates of relapse. Birchwood and colleagues (2000) noted that depression following psychosis was associated with the individual's psychological construction of the experience of psychosis, particularly when viewing psychosis as a

frightening and uncontrollable entity, over which the individual lacks agency and control. In further studies of post psychotic depression, risk of depression was associated with greater endorsement of feelings of entrapment, loss and blame relating to the experience of psychosis (Rooke & Birchwood 1998). Furthermore, beliefs about psychosis during the acute episode and at recovery, as measured using the Personal Beliefs About Illness Questionnaire (PBIQ; Birchwood, Mason, MacMillan, & Healy, 1993), were predictive of later post psychotic depression. In particular, post-psychotic depression was predicted by appraisals of psychosis as entrapping, humiliating, caused by the individual, and linked to loss of autonomy and social role (Iqbal, Birchwood, Chadwick, & Trower, 2000). These findings can be viewed from a social ranking perspective (Gilbert 1992), whereby the experience of psychosis is viewed as causing a loss of cherished roles, damage to social status through disruption of relationships, and is perceived as uncontrollable, thus becoming depressogenic via loss of social status and agency.

Similarly, the effect of positive psychotic symptoms on the individual's level of affective distress can also be viewed from a social ranking perspective, whereby appraisals of social power and rank form organizing schema underlying the relationship between voice hearing and the individual. Persecutory voices are thus appraised as powerful, dominant, shaming/insulting persecutor(s) which subordinate and shame the voice hearer. Evidence from structural equation modelling suggests the degree of powerlessness experienced in relation to the dominant persecutory voice is associated with levels of distress and depression, Furthermore, a broader interpersonal context is indicated by the finding that the power and characteristics of the persecutory voice is associated with the powerlessness and inferiority that voice-hearers experience in their relationships with others in general (Birchwood, Gilbert, Gilbert, Trower, Meaden, Hay, et al., 2004). Therefore, the evidence suggests the role of affect in psychosis, be it in terms of positive symptoms or in relation to the experience of psychosis as a life event, appears to be a powerful factor in determining an individual's adaptation to psychosis, with corresponding implications for recovery and staying well. Following from this it would seem logical that this

issue would be of particular import in the "critical period" – which therefore also represents a crucial window of opportunity for intervention.

Early signs of psychosis, DUP and Pathways to care

One possibility which this thesis wishes to explore is how the unfolding of an individual's difficulties and their pathway into psychosis may provide insight's into how the individual then adapts to the experience of psychosis. This echoes Huber and colleagues (1980) stance that the phenomenology of onset of psychotic symptoms is of value in predicting symptomatology after initiation of treatment, such as residual symptomatology. Following from this, the critical period, and the context of early intervention is a potentially productive setting in which to ask this question, being a timeframe where the potentially psycho-toxic effects of relapse and secondary disability have not emerged, and the events leading up to the onset of treatment are still relatively recent, and thus more amenable to recall. Two elements of the literature are of relevance here: findings on the early signs of psychosis; and with some conceptual overlap, the substantial literature around Duration of Untreated Psychosis (DUP). In these introductory chapters I wish to focus on the first episode psychosis group, as opposed to the At Risk Mental State (ARMS) group (as reviewed by Olsen & Rosenbaum 2006). An At Risk Mental State is conceptualised as "*a state-risk factor for full-blown psychosis. . .the presence of the syndrome implies that the affected person is at that time more likely to develop psychosis in the near future than someone without the syndrome*" (Yung, 2007; p.225). The At Risk Mental State is operationalised via the factors defined as Ultra High Risk Criteria (Yung, Phillips, Yuen & McGorry, 2004) These criteria constitute three factors indicating an individual to be at increased risk of psychosis: brief limited psychotic symptoms ("BLIPs") which are at frank psychotic intensity for less than 1 week; subthreshold attenuated psychotic symptoms present over a 1 year period; or a trait and state risk conferred by a diagnosis of schizotypal personality disorder or a first degree relative with a diagnosis of psychotic disorder *and* decline in functioning over the previous year.

Investigation of ARMS using UHR criteria is of considerable value in identifying novel treatment approaches that may help prevent transition to full psychosis. However, the current thesis focuses on aspects of already diagnosed first episode psychosis, by definition entailing retrospective investigation of factors relevant to onset. *Ergo,* the population under consideration have already made transition to a first episode, possibly, but not definitely having experienced an At Risk Mental State prior to onset of full-blown psychosis. In contrast, ARMS samples, by definition, include individuals who may not make transition to full blown psychosis – and assessment and intervention is focussed on a pre-specified group (Yung 2003). Therefore, conceptual points of contact not withstanding, the focus herein will be on the First Episode Psychosis literature, with reference to relevant findings from ARMS' studies.

Early signs

Research into the early signs of psychosis suggests that the onset of psychosis is often presaged by non-specific changes in affect, cognition and behaviour (e.g. Cameron, 1938; Parnas, 1999; Møller, 2001). Studies using well characterised FEP cohorts suggest the most common early signs include anxiety; labile or depressed mood; disordered sleep; anger and irritability; social withdrawal; amotivation and anergy; and interpersonal distrust (e.g. Yung & McGorry, 1996; an der Heiden & Häfner, 2001; Gourzis et al., 2002; Norman, Scholten, Malla, & Ballageer, 2005b). In an analysis of early signs data for 96 FEP patients, collected by interview with patients and family, Norman et al., (2005b) noted impaired role functioning was present in 74% of cases, social withdrawal in 57.3% of cases and anxiety, suspiciousness concentration difficulties, depression and irritability were reported in 47.9% of cases. Factor analysis of all early signs yielded five factors: dysphoric mood and anomalous experiences; impaired social and interpersonal functioning; psychobiological impairment; suspiciousness and concentration difficulties; and irritability/aggression. Impaired social functioning was significantly correlated with negative symptoms and psychomotor poverty at presentation, but not 1 year-follow-up. The psychobiological factor, which reflected anergy, sleep disturbance and

restlessness, was negatively correlated with positive symptoms, reality distortion and disorganization at 1 year follow-up, but not at first presentation. This factor was also significantly correlated with the dysphoric mood factor (r=-44; $p<0.001$). It is of interest that the authors suggest that this reflects an interaction between psychobiological changes and underlying mood changes in the early stages of psychosis, and may also reflect a reactive response to life stressors. Møller (2001) interviewed 19 individuals and their families, in the first 2 years of the individuals' treatment for FEP, investigating the trajectory of early signs of psychosis, focussing on the evolution of symptomatology from mild to severe levels of intensity and/or distress. He noted that 11 symptom dimensions were reported as continuously developing from mild through to severe levels: encompassing changes in though content, processes and perceptions, exaggerated suspiciousness, emotional and social withdrawal, diminished personal contact, stereotyped thinking, poor concentration, lack of insight and preoccupation with internal mental experiences. A further five symptoms were reported as subjectively continuous i.e. the participant reported an escalation in their frequency and relevance, although this was not necessarily mirrored in the family account. These symptoms included exaggerated self opinion (grandiosity), blunted affect, depression, unusual thought content, and active social avoidance. These data underscore the importance of considering both the objective and subjective factors active in the evolution of psychotic symptoms, and also highlight that the number and intensity of psychotic experiences also broadens over the period of untreated psychosis. This paper presents a potential conceptual bridge between the literature on early signs and DUP.

Duration of Untreated Psychosis

Following from Wyatt's (1991) seminal examination of prognosis and neuroleptic treatment in schizophrenia, one of the key determinants of outcome in early psychosis appears to be the length of time from the onset of diagnosable psychotic symptoms to the initiation of appropriate treatment. The initiation of treatment and thus the endpoint of the duration of untreated psychosis was defined by psychiatric consensus as the prescription of antipsychotic medication at a therapeutically

effective dose and for a period of time usually greater than 1 month; with hospitalisation comprising an aspect of treatment but not a necessary or sufficient condition for the end of DUP. Evidence from meta-analyses of first episode cohorts firmly supports the validity of the DUP concept, and suggests a moderate association between DUP and a variety of outcome variables (Marshall et al., 2005; Perkins et al., 2005). At 6-month follow-up, meta-analytic data suggested that longer DUP was associated with impaired outcome, as measured by total symptomatology, positive symptoms, overall functioning, and quality of life (Marshall, et al., 2005). There was also weaker evidence for correlations between shorter DUP and greater response to anti-psychotic medication (Perkins, et al., 2005), while longer DUP appeared to correlate with reduced likelihood of remission (Marshall, et al., 2005). Furthermore, the results of the meta-analyses support the conceptual validity of DUP, and also support the reliability of DUP as a predictor of outcome, even after controlling for methodological variation (Marshall, et al., 2005).

Compton and colleagues (2007) highlight that the challenge for future studies of DUP lies in standardising definitions, operationalisation and measurement of the construct. Indeed, Compton et al., (2007) note that equal durations of untreated psychosis can obscure significant differences within each given DUP in terms of frequency and severity of symptomatology. In terms of operationalisation, several authors have (e.g. Larsen, Moe, Vibe-Hansen, & Johannessen, 2000; Addington, Van Mastrigt, Hutchinson & Addington, 2002) have adopted a threshold for onset of DUP based on presence of positive psychotic symptoms at diagnostically significant level for the majority of the time over at least one weeks duration. Offset remains more difficult to operationalise, as currently most definitions consider initiation of pharmacological treatment for at least a month, as the endpoint of DUP. However, this does not take into account the time for symptom resolution, which may extend beyond the onset of criterion antipsychotic treatment. Therefore the period from onset of treatment to symptom remission would hypothetically constitute the duration to therapeutically effective treatment.

Intriguingly, the only study to date that has measured the DUP in terms of duration to initiation of *psychosocial* treatment, rather than pharmacological treatment has suggested that this delay to psychological treatment may be of greater significance than DUP as measured by initiation of medication, particularly in terms of addressing negative symptoms (de Haan, Linszen, Lenoir, de Win, & Gosira, 2003). Furthermore, consistent with the findings of Möller (2001) it seems appropriate to add that exploring the complexities of potential mediating and moderating factors in relation to DUP remains an underexplored area of research in FEP.

One key indicator of subsequent adaptation to psychosis and engagement with health services may be the individual's pathway into treatment. A substantial body of evidence has accrued suggesting that GP attendance is a frequent factor in the pathway in to treatment for psychosis (e.g. Johnstone et al., 1986; Lincoln, Harrigan & McGorry 1998, Häfner, Löffler, Maurer, Hambrecht, & an der Heiden, 1999; Skeate, Jackson, Birchwood, & Jones, 2002; Addington et al., 2002; Platz, Umbricht, Cattapan-Ludewig, Dvorsky, Arbach, Brenner, et al., 2006) although it may not directly lead to identification of a psychotic disorder. Indeed it is often one of the earliest help-seeking contacts (Lincoln, et al., 1998). Singh and Grange (2006) reviewed 15 studies of first episode psychosis that identified pathways into care, highlighting that there is considerable variability in pathways, and also noting that delay in treatment caused by the failure of health care services and carers to recognise the emerging signs of psychosis. The above review also identified a dichotomy in the factors associated with pathways into care. Successful help-seeking was often facilitated by marked changes in social or occupational functioning (Sartorius., et al., 1986; Larsen, Johannessen, & Opjordsmoen, 1998; Addington et al., 2002) which accentuated the individuals' difficulties and accelerated the pathway into care. These changes included the presence of positive psychotic symptoms such as delusional thinking (Addington et al., 2002; Norman, Malla, Verdi, Hassall & Fazekas, 2004), incomprehensible speech (Sartorius et al., 1986), suicidal ideation (Addington et al., 2002), and risk of harm to self or others (Bhugra, Hilwig, M., Mallett, R., Corridan, B., Leff, J., Neehall, J., et al, 2000). These phenomena can all conceptualised as noticeably at variance with normal functioning. In contrast, factors associated with delay in

help-seeking represented characteristics of avoidance and the absence of close supports such as withdrawal and lack of a social network (Larsen et al., 1998), being single (Cole, Leavey, King, Johnson-Sabine, & Hoar, 1995), being unemployed (Morgan, Mallett, Hutchinson, Bagalkote, Morgan, Fearon, et al., 2005a; Burnett, Mallett, Bhugra, Hutchinson, Der, & Leff, 1999), living alone, living in public housing (Burnett et al., 1999) and ethnic minority status (Morgan, Mallett, Hutchinson, Bagalkote, Morgan, Fearon, et al., 2005b). Beiser and colleagues (1993) noted that changes in behaviour characterised by *"self-destructiveness"* were *"the behavioural flare most likely to call public attention to psychosis"*(1993; p.1352). It is of note that Bleuler presages these observations when examining the lack of correlation between onset and outcome: "*It is the acute syndrome which makes for the earliest hospitalisation whether the condition raised by the patient be mild or severe. The chronic cases, particularly the simple deteriorated patient, only come to the hospital when the degree of deterioration makes it necessary. Thus right off, these cases are a selection of the severely ill"* (1911/1950; p.261).

Furthermore, preliminary associations between help-seeking and DUP have been identified. Skeate and colleagues (2002) established that individuals with a short DUP (< 1month) had significantly more frequent attendance at their GP in the 6 years preceding onset, compared to individuals with a long DUP (> 6 months). Thus, the above evidence suggests that investigating the context in which individuals seek help, and associations with other mediating factors may help elucidate different pathways into treatment.

Other Predictors of onset, initial presentation and outcome

Several other predictors of onset which are relevant to the current thesis should be given mention. These factors are notably heterogeneous; however, several are linked via a psychodevelopmental and/or psychosocial context.

Demographics – age and gender

With regard to demographics, Kraepelins' (1896) proposition that psychosis is a disease of young adulthood has by and large been supported, although empirical

studies have suggested that the median age range for the peak onset of psychosis is generally in the decade from 20-30 years of age (Häfner, Maurer, Löffler & Reichler-Rossler, 1993). This peak incidence is mirrored in the empirical data pertaining to bipolar disorder (Goodwin & Jamison, 1993). Furthermore, the younger an individuals age of onset of psychosis the greater the potential of a poor outcome, in terms of residual symptomatology and impaired quality of life (e.g. Hollis 2000; Jarbis & van Knoring, 2003). Harrop & Trower (2003) have suggested a psychodevelopmental rational for the high incidence of psychosis, particularly schizophrenia, in late adolescence and early adulthood. They suggest that age distribution of psychosis is in part a reflection of psychological difficulties in negotiating an autonomous self identity, differentiated from the family structure. This formulation will be returned to in Chapter 5 with reference to attachment theory.

There are also differences in symptom profiles between genders (Leung & Chue 2000, Read 2004), with men displaying greater negative symptoms, cognitive deficits and poorer premorbid functioning (Leung & Chue 2000; Maric, Krabbendam, Vollebergh, de Graaf, & van Os, 2003), whereas women have greater affective and paranoid symptomatology (Read 2004). Age of onset also differs between genders: with men having an earlier peak range of onset than women (18-25 years compared with 25 – 30 years of age; Salem & Kring, 1998; Castle, 2000; Goldstein & Lewine, 2000). However, the differences between genders in incidence risk vary as a function of age. Childhood onset schizophrenia is 2-3 times more common in boys than girls (Read 2004), and schizophrenia is more commonly diagnosed in men rather than women from late adolescence to the early thirties (Orr & Castle 2003). However, the rates are approximately equivalent between genders in early adolescence, and again from age 30-40 (Orr and Castle, 2003). Furthermore, outcome, as measured by symptom remission, treatment response and frequency and duration of admission, appears to be superior in women compared to men (Read 2004).

The social environment and stressors

A further set of risk factor for psychosis concerns the social environment, and has in recent years centred on findings from large scale epidemiological studies. However,

the proposition that the development of psychosis is at least partially mediated by the social environment is not new – indeed the finding that psychosis and schizophrenia is more prevalent in inner city areas dates back to Farris and Dunham's (1939) pioneering survey of psychosis incidence in Chicago. Using modern epidemiological techniques, Sundquist and colleagues (2004) reported that increasing levels of urbanisation were associated with increased rates of psychosis; with those living in the most densely populated areas having a 66-77% increase in risk of developing psychosis. Van Os and colleagues (2004) reported that the effect of family history on later risk of schizophrenia increased with the level of urbanicity; suggesting that the interaction of urbanicity was the key factor in approximately 30% of those individuals who later received a diagnosis of schizophrenia. The developmental context of the social environment is highlighted by Wicks and colleagues (2005), who used population data from Sweden to report a dose-response relationship between exposure to social adversity and risk of later schizophrenia. After adjusting for age and gender hazard ratios for psychosis were reported for all childhood socioeconomic indicators, (from lowest to highest hazard ratio): living in a rented apartment, low socioeconomic status, single parent households, unemployment, and households receiving social welfare benefits. Hazard ratios increased with an increasing number of adverse social factors present, with individuals with four measures of adversity having a 2.7-fold higher risk of schizophrenia than those with none.

A further sub-set of social risk factors is the conjunction of migration, minority status and discrimination. Selten and colleagues (2001), found increased incidence of psychotic disorders, relative to the indigenous population, in several migrant groups to the Netherlands. In particular, ratios for immigrants from Morocco, Surinam, Netherlands Antilles, and other non-Western countries were elevated, whereas ratios for Turkish and other Western migrants were not sufficiently increased. The authors rejected the hypothesis that increased ratios were caused by selective migration of those at risk of psychosis (further supported by a case note comparison with a time-matched comparison in Surinam; Selten, Feller, Blom, Schols, Camoenië, et al., 2005). These findings are supported by meta-analytic data (Cantor-Grae & Selten, 2005) suggesting that the mean weighted relative risk of receiving diagnosis of

schizophrenia among first-generation migrants was 2.7 (95% confidence interval [CI]= 2.3–3.2). Consistent with the above findings, the relative risk for second-generation migrants was 4.5 (95% CI=1.5–13.1). Furthermore, there were significantly greater effect sizes reported for migrants from developing versus developed countries (relative risk=3.3, 95% CI=2.8–3.9) and for migrants from areas where the majority of the population was black (relative risk=4.8, 95% CI=3.7–6.2), as compared to where the population was predominantly white. These authors suggest that these elevated incidence levels may in part be explained by the experience of negative and intrusive social disadvantages such as discrimination. This is supported by data from the Netherlands (Janssen, Bak, Bijl, de Graaf, Vollebergh, et al., 2005), demonstrating that perceived ethnic discrimination was associated with the subsequent development of delusional persecutory ideation at 3-year follow-up. Furthermore, Cantor-Grae and Selten (2005) suggest a biopsychosocial integration of social defeat described as "*the chronic stressful experience of outsider status*" (p.21), leading to the entrapping experience of subordinate status – a conceptualisation consistent with Gilbert's evolutionary conceptualisation of subordination and social rank in psychopathology (e.g. Gilbert 2001). In addition, experiences of discrimination, minority status and social adversity impact on the development of resilience, potentially leaving the individual feeling vulnerable, threatened and less able to rely on others (Wicks, et al., 2005). Therefore, the research findings on the social environment, with their emphasis on the individual's long term experience of a sub-optimal psychosocial milieu as a risk factor for psychosis present a strong argument for further investigation of how these factors may impact on the individual's psychological functioning, particularly with regard to the individual's capacity to adapt and adjust to the experience of psychosis.

Trauma

A further important aspect of the literature on FEP concerns the role of trauma as a risk factor for subsequent psychosis. This area, which had previously been overlooked as a plausible avenue of enquiry, has recently received renewed interest, underlined by a recent review of the links between trauma and psychosis (Read, van Os, Morrison & Ross 2005). These authors reviewed forty-six studies of female patients, representing both inpatient and outpatient samples where at least 50% of

the sample had a "psychosis" diagnosis (n = 2604) and reported that 48% had been subjected to childhood sexual abuse (CSA) and 48% to childhood physical abuse (CPA). The majority (69%) had been subjected to either CSA or CPA. The respective figures from the 31 studies pertaining to men, using the same eligibility criteria (n = 1536), yielded figures of 28% for CSA, 50% for CPA, and 59% for either CSA or CPA. In terms of individual symptoms the review reported that the strongest specific association between early relational trauma and psychosis was for hallucinations, with 19 of the 39 studies investigating this relationship between trauma and hallucinations reporting statistically significant associations. Furthermore, heightened exposure to trauma in psychosis is not confined to the experience of childhood physical and sexual abuse. Elevated levels of childhood neglect have also been reported in several studies of psychosis, with Read and colleagues (2004) reporting rates for adult inpatients ranging from 22% to 62%. Furthermore, Compton and colleagues (2004), in a sample of first episode inpatients reported rates of 94% for emotional abuse, 89% for emotional neglect and 89% for physical neglect.

Additional data supporting the association between trauma and later psychosis comes from the British Comorbidity survey (n=8580; Bebbington, Bhugra, Brugha, Singleton, Farrell, Jenkins, et al., 2004) which reported that the experience of sexual abuse was associated with an odds ratio of 15.47 (95% CI=8.2- 29.2) for the later development of psychosis. Even when controlling for the inter-relationship with other negative life events, current level of depression and the interaction of other events and depression a highly significant odds ratio remained (OR=3.9, 95% CI=1.8-8.6; OR=7.4 85% CI=3.6-15.2; OR= 2.90 95%CI 1.3-6.4). In the Dutch NEMESIS Study, which followed 4045 participants over 2 years of follow-up, Janssen and colleagues (2004) reported a "*dose effect*" for the relationship between childhood abuse and psychosis whereby risk of developing psychosis increased as a function of frequency of reported childhood sexual abuse. Those who reported abuse in the higher frequency category were more than 30 times more likely to have a diagnosis of psychosis compared to those who had not experienced abuse. Finally, in a predominantly male FEP sample, Compton, Furman & Kaslow (2004) reported rates of 39% for CSA and 78% for CPA respectively, also noting that 94% of the sample reported emotional abuse, 89% emotional neglect and 89% reported physical neglect.

Furthermore, this American sample was compromised exclusively of individuals of African-American ethnicity, therefore introducing the further psychological risk factor of having potentially experienced discrimination. This emerging link between trauma and psychosis is of particular import with regard to the current thesis in light of the strong links between trauma and psychodevelopmental theory, which I will consider in greater detail in Chapters 4 and 5.

Variation in Outcome

The literature on outcome in FEP gives substantial weight to the suggestion that the diagnosis of psychosis and schizophrenia is heterogeneous with regard to outcome and that progressive degeneration of function and a "chronic" presentation is the exception rather than the norm. Data from the International Study of Schizophrenia (ISoS) study suggested the first 2-years of an individual's experience of psychosis was the strongest predictor of 15-year outcome, with a rate of 50% favourable outcome in the schizophrenia subsample (Harrison, et al.,. 2001). In bipolar disorder, 35-year follow-up of individuals with a first hospitalisation for mania reported complete recovery in 64% of cases, and continued impairment in 22% of cases (Tsuang, Woolson & Fleming 1979). Meta-analysis of long term follow-up studies of first episode psychosis, averaging 5.6 years although not necessarily under early intervention paradigms, reported that the majority of outcomes are good to intermediate, with only 27.1% of individuals classified as having a poor outcome (Menezes, Arenovich & Zipursky, 2006). Crucially for early intervention paradigms, good clinical outcome and improved employment and educational function were predicted by a combination of medication and psychosocial based interventions (including psychotherapy). However, no significant predictors emerged for relapse, when based on the criteria of readmission. Another facet to variability in outcome concerns the causal model adopted by individuals to explain their experience of psychosis – with bio-genetic models of illness and associated diagnosis being linked to lower control over an individual's condition, and higher levels of depression (Birchwood, et al. 1993). In contrast, an explanatory model of psychosis which gives weight to psychosocial factors was associated with a greater motivation to change one's circumstances than the provision of a bio-genetic explanatory model (Fisher &

Farina, 1979). This is of importance to the current thesis given its focus on psychodevelopmental factors.

Conclusion

One approach to improving understanding of adjustment to psychosis, and thus by extension predictors of prognosis and outcome, may be to scrutinise the factors leading to onset of psychosis. As discussed above, the construct of DUP has emerged as a powerful predictor of prognosis in the critical period, and similarly, the individuals' pathway into care is also of import. After the onset of treatment, an individual's engagement with services appears to be a key driver in their emotional adaptation to the experience of psychosis, with corresponding implications for levels of psychotic symptomatology. One of the striking aspects of the phenomenology of the onset of psychosis and the process of adaptation after initiation of treatment is the importance of context: encompassing cognitive, affective, interpersonal and behavioural factors. In addition to the familial and societal circumstances of the individual. DUP and pathways into care are in part determined by how and when an individual, or those concerned with the individuals' welfare seek help – an act which is by definition interpersonal (e.g. Beiser, et al., 1993; Haley, Drake, Lewis, & Bentall, 2003). After the initiation of treatment, an individual's willingness and ability to engage with clinicians is a key aspect of adaptation to psychosis – a process again influenced by the context of the individuals' circumstances (Tait, et al., 2003). It seems not unreasonable to propose that factors that effect helpseeking and the initiation of treatment prior to onset of treatment (i.e. during the DUP) will also exert an effect after the onset of treatment, reflected in engagement and adjustment to psychosis. Helpseeking/pathways to care and engagement/adaptation to psychosis can thus be viewed as two sides of the same coin.

Furthermore, as I have briefly highlighted above, several risk factors for psychosis involve an interpersonal aspect – specifically involving insults to the integrity of one's psychological capacity to rely on others – e.g. the experience of trauma (Read

et al., 2005) and victimisation (e.g. Bebbington, et al., 2003, Janssen, et al., 2003). Furthermore, these risk factors often have their roots in early development – such as the experience of childhood adversity (Wicks, et al., 2005). Therefore, it becomes necessary to investigate what developmentally-grounded or "premorbid" factors have been identified in the FEP literature, particularly those involving social and interpersonal functioning, and whether specific factors are of impact upon specific aspects of clinical presence during the DUP, at first presentation and at follow-up. The next chapter addresses this question, adopting a systematic review approach.

Chapter 3:

A Systematic Review and Critical Appraisal of First Episode Psychosis: The case for a psychodevelopmental approach

Introduction

There is a long-standing recognition that sub-optimal psychosocial functioning is a risk factor for subsequent schizophrenia (Kraepelin, 1896/1919; Bleuler, 1911/1950). Historically, a substantial body of evidence links poor or deteriorating intellectual and psychosocial functioning (prior to onset of psychosis) with poorer short and long-term prognosis (e.g. Gittelman-Klein & Klein, 1969; Harrow, Tucker & Bromet, 1969; Bleuler, 1972/1978; Evans, Goldstein, & Rodnick, 1973; Bromet, Harrow, Kasl, 1973; Strauss & Carpenter, 1974a,b; Bland & Orn, 1978; Fenton & McGlashan, 1987). Poorer premorbid adjustment has been linked to greater severity of overall symptomatology (e.g. Kay & Lindemayer, 1987); negative symptoms (Shtasel, Gur, Gallacher, Heimberg, Cannon & Gur, 1992)); and social functioning (Torgalsboen, 1999). Additionally, deteriorating premorbid functioning from childhood, and through adolescence, has been linked to earlier onset of schizophrenia (Malmberg, Lewis, David, & Allenbeck, 1998; Davidson, Reichenberg, Rabinowitz, Weiser, Kaplan, & Mark, 1999; Rabinowitz, Reichenberg, Weiser, Mark, Kaplan, 2000) and more pronounced negative symptoms after onset (Mukherjee, Reddy, Schnur, 1991; Kelley, Gilbertson, Mouton & Van Kammen, 1992). However, to date, the majority of studies of premorbid adjustment have utilised non-representative, chronic samples (e.g. Gittelman-Klein & Klein, 1969; Torgalsboen, 1999, 2005; Kolakowska, Williams, Ardern et al., 1985; Keefe, Mohs, Losonczy et al., 1989). Furthermore, with a few exceptions (e.g. Amminger, Resch, Mutschlechner, Friedrich, Ernst, 1997; Rabiner, Wegner, Kane, 1986) studies have tended to focus on schizophrenia, rather than the broader spectrum of psychotic disorders.

In contrast, the recent growth in early detection strategies, geared towards early intervention and prevention of chronicity (e.g. McGorry, 2000; Department of Health, 2000), has emphasised the importance of the duration of untreated psychosis

(DUP). As I have outlined in Chapter 2, evidence from meta-analyses of first episode cohorts firmly supports the validity of DUP (Marshall, et al., 2005; Perkins, et al., 2005); showing DUP was associated with impaired outcome as measured by total symptomatology, positive symptoms, negative symptoms and overall functioning, at 6 months and 1 year follow-up. Longer DUP was also associated with reduced likelihood of remission (Marshall, et al., 2005). Marshall and colleagues (2005) also refuted the argument that DUP represents an artefact of poor or degenerating premorbid functioning (Verdoux, Liraud, Bergey, Assens, Abalan, van Os, 2001; Malla, et al., 2002a) finding that DUP was associated with outcome *independent* of premorbid adjustment. However, a substantial number of studies reviewed by Marshall and colleagues did not measure premorbid adjustment.

DUP, in terms of florid psychotic symptoms, can be reliably defined using guidelines based on diagnostic threshold criteria (e.g. Beiser, et al., 1993; Larsen, et al., 1998; Malla, et al., 2002b), However, there is conceptual ambiguity in defining the boundaries between duration of untreated psychiatric illness (DUI), prodromal symptomatology, and premorbid functioning (Norman & Malla, 2001). The current status of studies of prodromal symptomatology and attendant conceptual difficulties has been comprehensively reviewed by Olsen & Rosenbaum (2006), and are outwith the parameters of the current enquiry. However, Hafner and colleagues (1995; 1999) have argued that factors such as decline in social and occupational functioning, withdrawal and affective symptoms also represent the early phase of psychotic illness - predating onset of diagnostically significant positive psychotic symptoms by a significant margin – therefore conceptualising poor premorbid adjustment as an early manifestation of psychotic illness. Alternatively, premorbid adjustment can be viewed as a measure of functioning, prior to onset of symptomatology e.g. "*social, interpersonal, school and work functioning in the period before the onset of the illness . . . marked by the appearance of positive symptoms*" (Addington & Addington, 2005, p.40).

Mindful of the association between DUP and outcome (Marshall et al., 2005; Perkins et al., 2005) it would be of interest to explore whether premorbid adjustment is associated with different symptomatic variables, when disaggregated from the effect of DUP upon outcome. It is therefore the intention to re-evaluate the corpus of

studies on first episode psychosis (FEP), considering only those studies that have adequately measured *both* DUP and premorbid adjustment. The following questions will be addressed:

1) What is the strength of the relationship between DUP and premorbid adjustment?

2) Is there an association between premorbid adjustment and symptomatology at initial presentation, and after a first episode of psychosis?

3) If there are associations between premorbid adjustment and symptomatology, are they accounted for by DUP?

Method

Data source, selection and extraction

Relevant studies were initially identified by searching the following databases: CINAHL (Cumulative Index to Nursing and Allied Health) (January 1982 – December, Week 4, 2006), EMBASE (January 1980 – December, Week 52, 2006), MEDLINE (January 1966 – December, Week 4, 2006), and PsychINFO (January 1967 – December, Week 4, 2006). The sensitivity of the search was analysed by scrutiny of the reference lists of the relevant studies identified by the search strategy. The search strategy was based upon the approach adopted by Marshall et al., (2005). The reference lists of all relevant articles were screened by the current author and reviewed by the Doctoral Supervisor to ensure no studies were overlooked. Where there was disagreement regarding the suitability of a study for inclusion, eligibility was resolved by review of the full article by both authors.

Studies were eligible for inclusion in the review according to the following criteria:

a) Sample was of a first episode psychosis cohort e.g. patients had their first contact with clinical services for psychosis, or first admission to hospital for psychosis.
b) A standardised diagnostic system was specified (e.g. DSM, ICD, RDC)

c) Study criteria was a minimum mean age of 14 and maximum age of 65 (in order to incorporate adolescent onset psychoses, while excluding geriatric samples, mirroring the peak incidence range for psychosis (Jablensky et al., 1992)
d) Specification of duration of untreated psychosis using either a structured assessment tool or clearly defined clinical assessment procedure
e) Factors relating to premorbid adjustment measured using a structured assessment procedure.

Studies were excluded if:

1) The sample was not exclusively comprised of FEP patients.
2) Studies included participants with psychosis due to a medical condition, or sample included participants with learning difficulties.
3) Studies were published in a language other than English.
4) Study not published in a peer-reviewed publication, e.g. conference abstracts, book chapters, dissertations.
5) Mode of onset was the sole measure of untreated psychosis. This is a theoretically different approach to measuring the development of psychotic symptoms (see Cannon-Spoor, Potkin & Wyatt, 1982). Morgan et al., (2006) comment on the difficulties in clearly demarcating prodromal symptoms and DUP using mode of onset, particularly if onset is "insidious".
6) Data were analysed using an imputation formula to estimate missing data. As the review focuses on outcome data, studies had to report observed data. (e.g. Perkins, Lieberman, Gu et al., 2004))

To test reliability of the review process 20% of the articles in the final data set were reviewed by a second reviewer, independent to the previous reviewers, with 92% agreement regarding data extracted.

Data Synthesis

An extraction pro-forma was created and piloted on several relevant studies to ensure all relevant variables were captured (See Appendix 1). Effect sizes for correlational data were reported using correlation coefficients (*r*). Effect sizes for

reporting of premorbid typologies (e.g. stable adjustment compared with deteriorating adjustment; long DUP against short DUP) were transformed using standardised mean differences (Cohen's *d*) or converted using guidelines for deriving R^2 values for group comparisons and converted to F^2 values according to the formula given below (Murphy & Myors, 2004). Effect sizes for regression equations were reported using F^2 values.

Results

Study selection, sampling and measurement of premorbid adjustment

The search strategy yielded 1138 articles, of which 101 potentially fulfilled the eligibility criteria. After scrutiny of these abstracts, 76 studies were excluded. Articles representing 13 cohorts were excluded due to no measure of DUP being present (Kay & Lindemayer, 1987, Torgalsboen, 1999, Malmberg, et al., 1998, Amminger et al., 1997; Georghe, Baloescu & Grigorescu, 2004; Vazquez-Baquerro, Cuesta, Castanedo, Lastra, Herran & Dunn, 1995; Reichenberg, Rabinowitz, Weiser, Mark, Kaplan, & Davidson, 2000; Preston, Orr, Date, Nolan & Castle, 2002; Gureje & Barnidele, 1998; Strakowski, Peck, McElroy et al., 1998; Bailer, Braver & Rey, 1996; Goldstein, 1978; Horan, Subotnik, Snyder & Neuchterlein, 2006). The reference sections of the remaining 24 studies were reviewed for relevant articles not identified by the search strategy, yielding 5 additional articles. (see Figure 3.1). The final sample consisted of 29 articles meeting all eligibility criteria, representing 19 cohorts (Table 3.1). This sample involved 2263 participants in total. Mean age at presentation was 26.22 years of age, with men comprising 57.4% of the sample. The Mean DUP was 57.3 *w*eeks (median DUP = 26 weeks). Thirteen cohorts reported data from participants with schizophrenia spectrum disorders only; 4 cohorts reported data for all psychoses and 1 study reported data for all psychoses, and a separated subset representing schizophrenia diagnoses. Where multiple reports were derived from the same cohort (e.g. Addington & Addington, 2005, Addington, Van Mastrigt & Addington, 2004, Addington, Young & Addington, 2003) a pragmatic approach was adopted, considering each report to be drawn from the same total pool of individuals in the relevant cohort.

Figure 3.1: Flow diagram of the process of selecting articles for inclusion

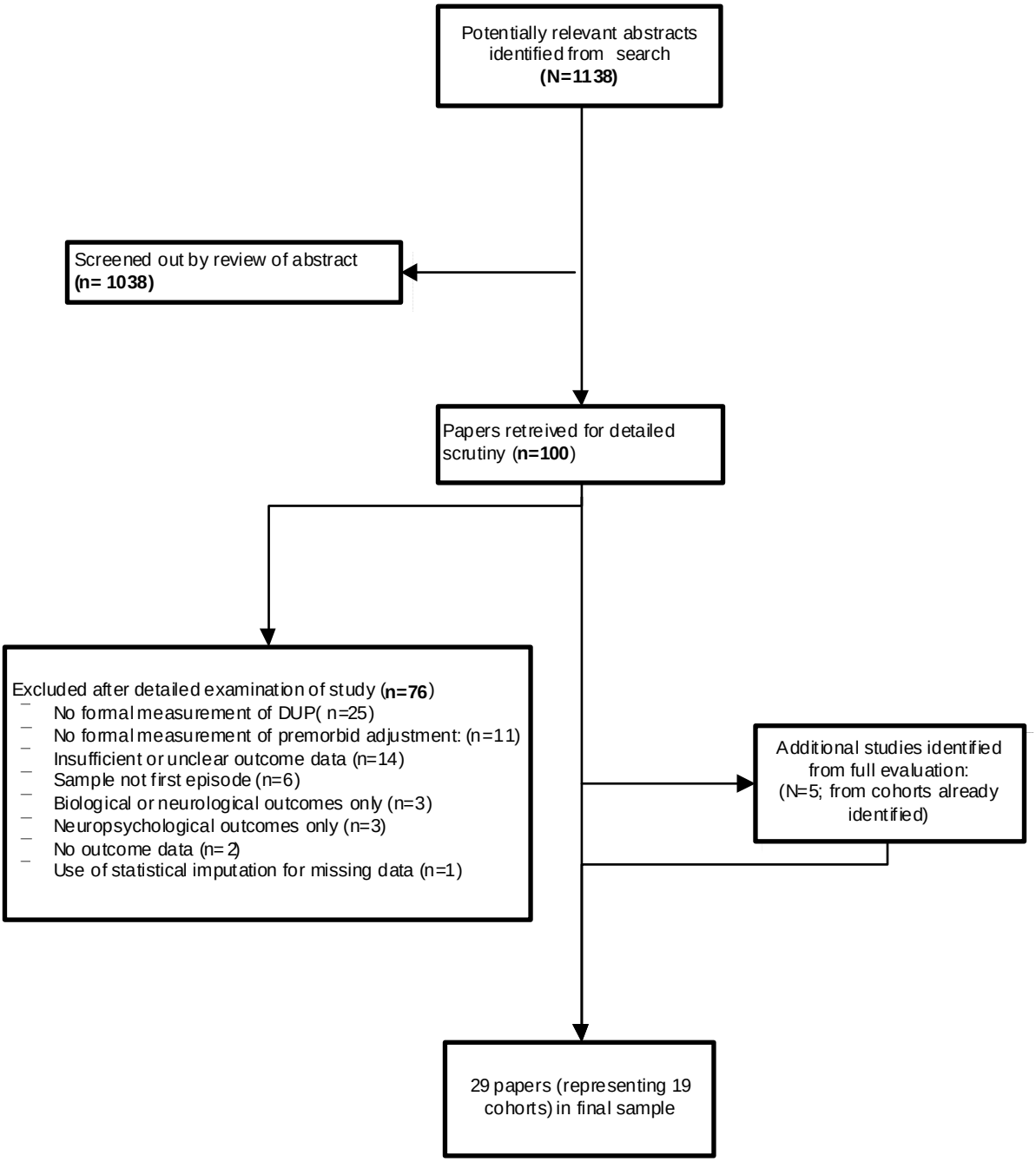


Table 3.1: Selected Cohorts and Demographics

Study Cohort	Year recruitment began	Study analysis time points	Cohort size, No	Diagnostic Method	Sample Composition	Premorbid Adjustment Measure
FEPP, London Ontario, Canada.						
Malla et al, 2004a	1999	Baseline, 1 year	71	DSM-IV	All psychoses + subst.	PAS
Malla et al 2004b		Baseline	88			
Malla et al 2002a.		Baseline, 1 year	88			
Malla et al 2002b.		Baseline, 1 year	66			
Rogaland County, Norway.						
Larsen et al, 1996a, b, 2000.	1993	Baseline, 1 year	43	DSM-III-R/SCID	All psychoses	PAS
TIPS, Rogaland & Oslo Counties, Norway & Roskilde County, Denmark.						
Melle et al 2004, 2005	1997	Baseline, 3 months	281	DSM-IV/SCID	All psychoses	PAS
Norwegian Combined Sample. Rogaland & TIPS studies (see above)						
Larsen et al 2004	1993;	Baseline, 3				

	1997	months	335	DSM-IV	All psychoses	PAS
Early Psychosis Prevention and Intervention Centre, Sydney, Australia **Harrigan et al 2003** **Harris et al 2005**	1989; 1993	Baseline, 1 year Baseline, 8 years	354 250	DSM-III/RPMI	All psychoses + subst.	PAS
Hillside Hospital, New York, USA **Strous et al 2004**	1986	Baseline	118	RDC	Schizophrenia Spectrum	PAS
Early Psychosis Program, Calgary, Canada **Addington et al, 2003a, 2005** **Addington et al, 2003b, 2004**	1999	Baseline, 1 year, 2 year	317 200	DSM-IV	All psychoses +subst.	PAS
Iowa Longitudinal Prospective Study of Recent-onset Psychoses, Iowa City, USA. **Ho et al, 2000**	1988	Baseline, 6 months	155	DSM-IV (CASH)	Schizophrenia Spectrum	MPAS
Suffolk County Mental Health Project, NY, USA **Bromet et al 1996**	1989	Baseline, 6 months	202	DSM-IIIR/SCID	All psychoses	PAS
Cluain Mhuire Family Centre, Dublin, Eire **Browne et al, 2000**	1995	Baseline	53	DSM-IV/SCID	Schizophreniform	PSA

Hong Kong Island, Hong Kong **Chen et al 2005**	1997	Baseline	131	DSM -- IV	All psychoses + subst	PSA & PSST
First episode schizophrenia Follow-up Project, Istanbul , Turkey **Ucok et al 2004, 2006**	1996	Baseline, 1 year	79, 74	DSM-IV/SCID	Schizophrenia	PAS
Western Psychiatric Institute, Pittsburgh, USA. **Keshavan et al 2003**	2000	Baseline, 1 year, 2 year	104	DSM-IV/SCID	All psychoses	PAS
Psychiatric Hospital, Ludwig Maximillians Uni., Bonn **Bottlender et al, 2002**	2002	Baseline, discharge	196	ICD-10	Schizophrenia Spectrum	Phillips
Mexican First Episode Psychosis Study, Mexico City, Mexico. **Apiquian et al 2002**	1997	Baseline	63	DSM-IIIR/SCAN	All psychoses	PAS
Kupittaa & Keroputaa Hospitals, (Turku & Tornio) Finland **Kalla et al 2002**	1992	Baseline	49	DSM-IIIR	All psychoses	Interview *
University General Hospital, Madrid, Spain **Kalla et al 2002**	1997	Baseline	37	DSM-IV/SCID	All psychoses	Interview *
Payne Whitney Clinic, New York Hospital, NY,						

USA **Haas & Sweeney, 1992**	Unclear	Baseline	71	DSM-IIR/SCID	All psychoses	PAS
Clinic for Child and Adolescent Psychiatry, Essen, Germany **Ropcke & Eggers, 2005**	1979	Baseline, 15 years	39	ICD-9	Schizophrenia Spectrum	MPAS

Notes: *Premorbid Adjustment Measures:* MPAS, (Modified Premorbid Adjustment Scale, Gupta et al., 1995); PAS: (Premorbid Adjustment Scale; Cannon-Spoor et al., 1982); Phillips (Abbreviated Phillips Premorbid Functioning Scale; Phillips, 1953).PSA: (Premorbid Social Adjustment Scale; Foerster et al., 1991); PSST: (Premorbid Schizoid and Schizotypal Trait Scale; Forester et al., 1991); **Diagnostic Measures:** CASH (Comprehensive Assessment of Symptoms and History; Andreasen, Flaum & Arendt 2002) RDC (Research Diagnostic Criteria, Endicott & Spitzer 1978); RPMI: (Royal Park MultiDiagnostic Instrument; McGorry et al., 1990); SCAN: Schedules for Clinical Assessment in Neuropsychiatry.

Sample Composition: Schizophrenia: only schizophrenia diagnoses; Schizophreniform: sample included schizophreniform disorders; Schizophrenia Spectrum: also included schizoaffective disorders; All psychoses: study included affective psychoses; +subst.: also included substance induced psychoses.

Notes: * = Semi structured interview from Finnish National Schizophrenia Project, (Salokangas, Rakkoläinen, &Alanen 1985)

Measurement of premorbid adjustment

The principal measure of premorbid adjustment, employed by 12 of the 19 included cohorts, was the Premorbid Adjustment Scale (PAS; Cannon-Spoor, Potkin, & Wyatt., 1982). The structure of the PAS allows ratings to be made by developmental stage (childhood, early adolescence, late adolescence and adulthood), academic and social outcomes, and overall mean score. Cluster analysis can be used to derive premorbid adjustment typologies (Addington & Addington, 2005, Addington, van Mastrigt & Addington, 2003a, Larsen, Friis, Haahr, Johannessen, Melle, Opjordsmoen, et al., 2004). Four cohorts used more than one approach to quantify data (Malla, et al., 2002a, b, Addington & Addington, 2005, Addington et al., 2003a; 2004; Larsen et al., 2004; Strous, Alvir, Robinson, Gal, Sheitman, & Chakos, 2004; Addington, Young & Addington, 2003b).

The remaining seven cohorts used a range of standardised assessments of premorbid functioning. Two cohorts (Browne, Clarke, Gervin, Waddington, Larkin & O'Callaghan 2000, Chen, Dunn, Miao, Yeung, Wong, & Chan, et al., 2005) used the Premorbid Social Adjustment Scale (Foerster, Lewis, Owen, & Murray, 1991), a modification of the PAS, focussing solely on social functioning restricted to childhood and early adolescence (Chen et al., 2005) also used the Premorbid Schizoid and Schizotypal Trait Scale (Foerster et al., 1991). Two cohorts (Ho, Andreasen, Flaum, Nopoulos & Miller, 2000, Ropcke & Eggers, 2005) used the Modified Premorbid Adjustment Scale (MPAS; Gupta, Rajaprabhakaran, Arndt, Flaum & Andreasen, 1995), an updated version of the Premorbid Asocial Adjustment Scale (Gittelman-Klein & Klein 1969), incorporating elements of the Elgin Prognostic Scale (Wittman 1941). The MPAS is divided into two timepoints – childhood and adolescence, predominately focussed on psycho-social functioning, ending 1 year before first admission, or appearance of florid psychotic symptomatology. Bottlender and colleagues (2002) utilised the abbreviated Phillips Scale (Phillips 1953; Harris, 1975) – an assessment of premorbid sexual and personal social adjustment. The two cohorts included in Kalla et al., (2002) used a comprehensive semi-structured questionnaire developed for the Finnish National Schizophrenia Project 1982 – 1992

(Salokangas, Rakkoläinen & Alanen, 1985) evaluating adolescent psychosocial and sexual functioning.

Association of Premorbid Adjustment and DUP

Of the 15 cohorts that measured the strength of association between premorbid adjustment and DUP (see Table 3.2), 4 cohorts did not report detailed statistical data, precluding the calculation of effect sizes (Larsen, McGlashan, Johannessen, & Vibe-Hansen, 1996a; Strous et al., 2004; Ucok, Polat, Genc, Cakir & Turan 2004; Chen et al., 2005). However, all four of the aforementioned cohorts stated DUP and premorbid adjustment were not significantly correlated. The remaining 11 cohorts reported correlations ranging from negligible to medium/large (See Table 3.2). There was considerable heterogeneity in the treatment of the premorbid adjustment variable, suggesting no consistent relationship between premorbid adjustment and DUP. For measures of social premorbid adjustment, the only study using the MPAS (Ho et al., 2000) reported negligible correlations with DUP (r= - 0.0001 to r=0.07). Similarly, Larsen and colleagues (2004) reported a negligible effect of premorbid social course upon DUP. In contrast, the two samples using Salokangas and colleagues' (1985) structured assessment reported a medium to large effect size for lack of peer relations in adolescence (Kalla, Aaltonen, Wahlstrom, Lehtinen, Garçia Cabeza, & Gonzalez de Chavez, 2002). Melle and colleagues (2004) also reported a small effect size for overall social adjustment. When data from the PAS was reported by developmental point, a consistent small to medium effect size on DUP was observed for adolescent premorbid adjustment (Malla, et al., 2002a, Strous et al., 2004, Browne et al., 2000).

Table 3.2: Relationship between premorbid adjustment and Duration of Untreated Psychosis

Cohort	DUP measurement	Premorbid measurement	Association	Significance	Effect Size
Melle et al 2004	Median DUP (n=281)	Social PAS Academic PAS	*r*=0.16 *r* =0.24	P<0.01 P<0.01	Small Small - Medium
Apiquian et al 2002	Mean DUP (n=63)	Mean Score	*r* =0.33	P=0.003	Medium
Harrigan et al 2003	Log transformed DUP (n=364)	Mean PAS Score	*r* =0.14	P=0.007	Small
Harris et al 2005	Log transformed DUP (n=318)		*r* =0.14	P=0.012	Small
Kalla et al 2002	Median DUP (n=49)	Finnish Premorbid Measure			
Finnish sample		Few Peer relations	*r* =0.4	0.006	Medium– Large
		Frequent asocial behaviour	*r* =0.04	N.s.	Negligible
		Poor sexual adjustment	*r* =0.01	N.s.	Negligible
Kalla et al 2002	Median DUP (n=37)	Finnish Premorbid Measure Few Peer relations	*r* =0.11	N.s.	Small
Spanish sample		Frequent asocial behaviour	*r* =-0.03	N.s.	Negligible
		Poor sexual adjustment	*r* =-0.12	N.s.	Small
Strous et al 2004	Mean DUP (n=111)	Early Adolescent PAS	*r* =-0.22	CI (-0.40, -0.02)	Small - Medium
		Typologies	N/C	N.S.	
Malla et al 2002a	Log_2DUP (n-=88)	Childhood PAS	N/C	N.S.	N/A
		Early Adolescent PAS			Small –

		Late Adolescent PAS	*r* = 0.28	P<0.02	Medium
			r =0.30	P<0.01	Medium
Larsen et al 1996[1]	Median DUP (n=43)	All developmental points/Typologies	N/C	N.S.	N/A
Addington et al 2004	Log_{10}DUP (n=200; 164)	Childhood, Early, Late Adolescence	N/C (no data)	N.S.	N/A
Addington et al 2005	Log_{10}DUP (n=194)	Typologies	N/C	N.S.	N/A
Ho et al 2000	Mean/Median (unclear) DUP n=74	MPAS total score	*r* = 0.02	P=0.90	Negligible
		Childhood subscore	*r* =0.07	P=0.54	Negligible
		Adol/Young adult score	*r* =-0.001	P=0.99	Negligible
Chen et al 2005	Mean and Median DUP (n=131)	PSA/PSST	N/C	N.S.	N/A
Ucok et al 2004	Median DUP (n=79)	Developmental points	N/C	N.S.	N/A
Larsen et al 2004	Median DUP (n=335)	Childhood Social:			
		Good (n=229) vs. Intermediate (106)	*d*=0.01	P=0.014	Negligible
	Median DUP (n=335)	Social course:			
		Stable (n=191) vs. Deteriorating (144)	*d*=0.01	P<0.001	Negligible

	Median DUP (n=335)	Childhood Academic:			
		Good (n=213) vs. Intermediate (n=66) vs. Poor (n=56)	N/A	P=0.001	N/A
	Median DUP (n=334)	Academic Course:			
		Stable (n=257) vs. Deteriorating (n=77)	*d*=0.00	P=0.40	Negligible
Haas & Sweeney 1992	Long (n=41) vs. Short (n=30) DUP	Mean PAS Score	*d*=0.29	n.s.	Small
Browne et al 2000	Long (n23) vs. short (n=30) DUP	Childhood PSA	*d*= - 0.21; *r*=0.10	n.s.	Small
		Adolescent PSA	*d*= -0.38; *r*=0.18	n.s.	Small - Medium

Notes: [1]Data split by gender, not reported for full sample

Abbreviations: N/A: Not applicable/Insufficient data for calculation; N/R: Not reported; N/C: Not correlated; N/S: No significant difference between groups; r: correlation coefficient;

Key to abbreviations for Tables 3.2- 3.6:

N/A: Not applicable/Insufficient data for calculation; N/E: No effect; N/R: Not reported; N/C: Not correlated; N/S: No significant difference between groups; *r*: correlation coefficient; *d:* Cohen's d effect size measure for t-tests; f^2=Cohen's effect size measure for multiple regression

Notes:

Positive effect sizes indicate poorer premorbid adjustment, or longer DUP.

[1] Premorbid data reported by gender only, no details for total sample

[2] Data combined from Rogaland (Larsen et al., 1996a, b, 2000) & TIPS (Melle et al., 2004, 2005a) studies.

Premorbid Adjustment and Outcome

Positive Symptomatology

As summarised in Table 3.3, eight cohorts (Addington, et al., 2003a, Larsen et al., 2004, Strous et al., 2004, Browne et al., 2000, Larsen et al., 1996a, Ucok et al., 2004, Melle et al., 2004, Haas & Sweeney 1992, Apiqiuian, Ulloa & Paez, 2002) reported data relating to severity of positive symptomatology at baseline, with effect sizes for poorer premorbid adjustment predominantly negligible. Of these eight cohorts, six also reported the association between DUP and positive symptoms, varying from negligible to small-medium effect size, in the direction of longer DUP associating with increased severity of positive symptoms. At one-year follow-up, four cohorts presented data on positive symptomatology (Malla, et al., 2002a, Addington & Addington, 2005, Addington, van Mastrigt & Addington, 2004, Larsen, et al., 2000, Harrigan, McGorry & Krstev, 2003) reporting small effect sizes. Where effect sizes for DUP and premorbid adjustment could be simultaneously calculated the effect of longer DUP upon positive symptomatology was consistently larger than the effect of premorbid adjustment on symptoms.

Negative Symptomatology

Eight cohorts (Addington, et al., , 2003a, Larsen, et al., 2004, Strous et al., 2004, Browne, et al., 2000, Larsen et al., 1996a, Ucok et al., 2004, Haas & Sweeney 1992, Apiquian, et al., 2002) reported baseline data pertaining to negative symptomatology (see Table 3.4). Effect sizes, where calculable, varied considerably, ranging from negligible for childhood academic adjustment (Larsen et al., 2004) to medium effect sizes for deteriorating overall premorbid course (Addington, et al., 2003a) and deteriorating premorbid *social* course (Larsen et al., 2004). Two cohorts reported data at baseline for both DUP and premorbid adjustment (Ucok et al., 2004, Haas & Sweeney, 1992).

Table 3.3: Relationship of Premorbid Adjustment and DUP to Positive symptoms

Cohort	Length of Follow-up	Type of Premorbid Rating	Premorbid Adjustment Effect		DUP Effect	
			Statistic	Size	Statistic	Size
Haas & Sweeney 1992	Baseline	Typologies	$F^2=0.05$	Small-med	d=-0.17	Negligible
Apiquian et al 2002	Baseline	Developmental	N/R	N/A	r =-0.26	Small - medium
Browne et al 2000	Baseline	Developmental	N/R	N/A	d=0.18	Negligible
Larsen et al 2004[2]	Baseline	Childhood Social	d=0.09	Negligible	N/R	N/A
		Social Course	d=0.20	Small	N/R	N/A
		Childhood Academic	N/A	Negligible (est.)	N/R	N/A
		Academic Course	d=0.0	None	N/R	N/A
Strous et al 2004	Baseline	Developmental	N/C	N/A	N/R	N/A
		Course	N/S	N/R	N/A	N/A
Larsen et al 1996a[1]	Baseline	Developmental	N/R	N/A	r=0.006	Negligible
		Typologies	N/R	N/A		
Larsen et al 2000	1 year	Childhood	r =0.03	Negligible	r=0.50	Large
		Early Adolescence	r =0.19	Small		
		Late Adolescence	r =0.22	Small		

		Adulthood	*r* =0.21	Small		
Ucok et al 2004	Baseline	Childhood	*r* =0.167	Small	*d*=-0.26	Small
		Early Adolescence	*r* =0.247	Small – medium		
		Late Adolescence	*r* =0.127	Small		
		Adulthood	*r* =0.184	Small		
Ucok et al 2006	1 Year		N/C	N/A	N/C	N/A
Malla et al 2002a	1 Year	Childhood	*r* =0.18	**Small**	*r* =0.31	Medium
		Early adolescent	*r* =0.34	Medium		
		Late adolescent	**r =0.32**	Medium		
Addington et al 2003a, 2004, 2005	Baseline	Typology	F^2=0.09	Small – medium	N/R	N/A
	1 Year	Developmental	F^2=0.08	Small – medium	F^2=0.12	Small - medium
		Typology	F^2=0.10		N/R	N/A
	2 years	Developmental	F^2=0.07	Small – medium	F^2=0.05	Small
		Typology	N/A	Small	N/R	N/A
				N/A		

Harrigan et al 2003	1 Year	Mean	N/A	N/A	F^2=0.04	Small
Harris et al 2003	8 year	Mean	N/A	N/A	F^2=0.07	Small - medium
Ropcke & Eggers 2005	15 years	Mean	N/R	N/A	N/A	N/A

Haas and Sweeney (1992) report similar effects for DUP and premorbid adjustment, indicating greater severity of negative symptoms in patients with longer DUP, and individuals with a pattern of deteriorating premorbid adjustment. In contrast, Ucok et al., (2004) reported no effect of DUP upon negative symptomatology, but did report increasingly greater effect sizes for each developmental point, indicating higher levels of negative symptoms in patients with poorer adolescent premorbid adjustment.

At 1-year follow-up, data from five cohorts (Malla et al., 2002a, Addington & Addington, 2005, Larsen et al., 2000; Harrigan, et al., 2003; Ucok, Polat & Genc, 2006) show a consistent pattern of small to medium effect size, indicating a relationship between compromised premorbid adjustment and greater negative symptomatology. Both Larsen and colleagues (2000) and Malla and colleagues (2002a) report a medium effect size for poorer adolescent premorbid adjustment. Where both DUP and premorbid adjustment are simultaneously reported, the effect sizes are comparable in magnitude (Larsen et al., 2000, Harrigan, et al., 2003). In a 1-year follow-up comparison of individuals with negative symptoms at baseline only, compared with those with persistent negative symptoms, Malla and colleagues (2004a) report significantly longer DUP in the persistent symptom group. They also report large effect sizes for sub-optimal early and late adolescent premorbid adjustment (equivalent to d=0.82 and 0.75 respectively). These results were not confounded by the presence of post-psychotic depression. Secondly, although an effect size could not be calculated, Harris et al., (2005) in their EPPIC cohort of 318 individuals with first episode psychoses, report poorer premorbid adjustment to be the strongest predictor of greater negative symptoms at 8-year follow-up.

Global Functioning

Ten cohorts reported data on global functioning, measured by the Global Assessment of Functioning (GAF) or the Global Assessment Scale (GAS; Endicott & Spitzer, 1978). Five cohorts reported data for global functioning at baseline

(Addington, et al., 2003a, Larsen et al., 2004, Strous et al., 2004, Larsen et al., 1996a, Haas & Sweeney, 1992). The effect of premorbid functioning upon global functioning was negligible; although when premorbid typologies were applied there was preliminary evidence of a small effect size, indicating better global functioning in the good premorbid adjustment group. The picture for DUP was less clear, but in the two studies that report data pertaining to DUP (Haas & Sweeney, 1992; Larsen, McGlashan & Moe, 1996b) effect sizes were of comparable magnitude to those for premorbid adjustment.

The three cohorts reported 1-year follow-up data (Larsen et al., 2000, Ucok, et al., 2006, Keshavan, Haas, Miewald, Montrose, Reddy, Schooler, et al., 2003), indicating a medium effect size for premorbid adjustment upon global functioning, particularly at late adolescence. These data suggest DUP also exerts an outcome, but there is no consistent pattern regarding the magnitude of this effect. Similar to the results for negative symptoms, the effect of premorbid adjustment appears to increase over time. However the small sample size strongly suggests replication of these findings is essential.

Table 3.4: Relationship of Premorbid Adjustment and DUP to Negative symptoms

Cohort	Length of Follow-up	Type of Premorbid Rating	Premorbid Adjustment Effect		DUP Effect	
			Statistic	Size	Statistic	Size
Haas & Sweeney 1992	Baseline	Typology	F^2=0.10	Small - medium	*d*=0.35	Small - medium
Apiquian et al 2002	Baseline	Developmental	N/R	N/A	N/R	N/A
Browne et al 2000	Baseline	Developmental	N/A	N/A	*d*=0.25	Small
Larsen et al 2004[2]	Baseline	Childhood Social:	*d*=0.29	Small	N/R	N/A
		Social course:	*d*=0.50	Medium	N/R	N/A
		Childhood Academic:		Negligible (est.)	N/R	N/A
		Academic Course:	*d*=0.23	Small	N/R	N/A
Strous et al 2004	Baseline	Childhood	*r* =0.23	Small	N/R	N/A
		Early Adolescence	N/C	N/A	N/R	N/A
		Late Adolescence	*r* =0.22	Small	N/R	N/A
		Adulthood	N/C	N/A	N/R	N/A
		Typology	N/S	N/A	N/R	N/A
Larsen et al 1996a[1]	Baseline	Developmental	N/A	N/R	*r* =0.31	Medium
		Typology	N/A	N/R		

Larsen et al 2000	1 year	Childhood (n=43) Early Adolescence (n=43) Late Adolescence (n=40) Adulthood (36)	*r* =0.01 *r* =0.37 *r* =0.40 *r* =0.64	Negligible Medium Medium Large	*r* =0.38	Medium
Ucok et al 2004	Baseline	Childhood (n=79) Early Adolescence (n=79) Late Adolescence (n=55) Mean PAS (n=79)	*r* =0.08 *r* =0.166 *r* =0.241 *r* =0.204	Small Small Small – medium Small- medium	*d*=0.04	Negligible
Ucok et al 2006	1 year	Developmental	N/C	N/A	N/C	N/A
Addington et al 2003a,2004, 2005	Baseline 1 year 2 years	Typology **Typology** Typology	F^2=0.22 F^2=0.12 F^2=0.14	Medium Small – Medium Small - medium	N/R N/R N/R	N/A N/A N/A
Malla et al 2002a, 2004a	1 year	**Childhood (n=88)** **Early adolescent (n=88)** Late adolescent (n=56)	*r* =0.20 *r* =0.35	Small – medium Medium	*r* =0.13	small

			r =0.37	Medium		
Harrigan et al 2003	1 year	Mean	N/A	N/A	F^2=0.051	Small
Harris et al 2005	8 year	Mean	N/A	N/A	F^2=0.03	Small
Ropcke 2005	15 years	Mean	N/R	N/A	N/A	N/A

Table 3.5: Relationship of Premorbid Adjustment and DUP to Global functioning

Cohort	Length of Follow-up	Type of Premorbid *Rating*	Premorbid Adjustment Effect		DUP Effect	
			Statistic	Size	Statistic	Size
Haas & Sweeney 1992	Baseline	Typology	F^2=0.02	Small	*d*=0.44	Small - medium
Addington et al 2003a	Baseline	Typology	F^2=0.09	Small - Medium	N/R	N/A
Larsen et al 2004[2]	Baseline	Childhood Social:	*d*=0.16	Negligible	N/R	N/A
	(Symptoms		*d*=0.11	Negligible	N/R	N/A
	& Functioning)	Social course:	*d*=0.05	Negligible	N/R	N/A
			d=0.13	Negligible	N/R	N/A
		Childhood Academic:		Negligible (Est.)	N/R	N/A
				Negligible (Est.)	N/R	N/A
				Negligible	N/R	N/A
		Academic Course:	*d*=0.14	Small	N/R	N/A
			d=0.24		N/R	N/A
Strous et al 2004	Baseline	Childhood (n=111)	N/C	N/A	N/A	N/A
		Early Adolescence (n=108)	*r* =-0.24	Small – medium	N/A	N/A
		Late Adolescence (n=102)	N/C	N/A	N/A	N/A
		Adulthood (n=78)	N/C	N/A	N/A	N/A
		Mean score (n=111)	N/C		N/A	N/A

		Typology	N/R	N/A N/A	N/A	N/R
Larsen et al 1996b [1]	Baseline (Last week)	Developmental	N/R	N/A	*r* =-0.007	Negligible
		Typology	N/R	N/A		
Larsen et al 2000	1 year	Late adolescent PAS	*r* =-0.35	Medium	*r* =-0.50	Large
		Adult PAS	*r* =-0.55	Large		
Bottlender et al 2002	Discharge	Mean	*d*=0.44	Small - Medium	N/A	N/R
Bromet et al 1996	6 months	***Late adolescence PAS*** Schizophrenia Diagnosis	*r =-0.37*	Medium – Large	N/R	N/A
		Psychotic Depression	*r =-0.37*		N/R	N/A
		Bipolar disorder	*r =-0.55*	Medium – Large Large	N/R	N/A
Ucok et al 2006	1 year	Late adolescent PAS	*r* =-0.33	Medium	N/C	N/A
Keshavan et al 2003	1 year	**Mean**	*r* =-0.38	Medium	*r* =-0.13	Small
	2 year	Mean	*r* =-0.29	Small - Medium	*r* =-0.28	Small - medium

Quality of Life

Four cohorts measured quality of life at baseline, (Addington, et al., 2003a, Browne, et al., 2000, Malla, Norman, McLean, MacDonald, McIntosh, Dean-Lashley, et al., 2004b, Melle, Haahr, Friis et al., 2005a, see Table 3.6) with a further cohort (Harrigan, et al., 2003, Harris et al., 2005) providing one and eight-year follow-up data. Quality of life was measured using a variety of self-report and interview methods. At baseline there was a consistent pattern of small to medium effect sizes, indicating poorer quality of life reported by individuals with poorer premorbid adjustment. This pattern was maintained in data from the three cohorts reporting 1-year follow-up data (Malla et al., 2002b, Addington & Addington, 2005, Harrigan, et al., 2003). At both baseline and follow-up the effect of adolescent premorbid adjustment upon quality of life after onset of psychosis is marked, with consistent medium effect sizes indicating that poorer adolescent premorbid adjustment is linked to compromised quality of life, whereas good adolescent premorbid functioning is linked with better quality of life.

Discussion

This review is, to the author's knowledge, the first to systematically appraise the role of premorbid adjustment in FEP, disaggregated from the influence of DUP upon outcome (Marshall et al., 2005; Perkins et al., 2005). The findings of Marshall and colleagues (2005) are replicated suggesting there is no consistent relationship between DUP and premorbid adjustment, supporting the proposition that both constructs confer independent effects upon symptom development. However, the simultaneous effect of both premorbid adjustment and DUP upon symptomatology is often documented in insufficient detail for quantitative comparisons between cohorts to be made.

Table 3.6: Relationship of Premorbid Adjustment and DUP to Quality of Life

Cohort	Length of Follow-up	Type of Premorbid Rating	Premorbid Adjustment Effect		DUP Effect	
			Statistic	Size	Statistic	Size
Melle et al 2005	Baseline	Good Premorbid Academic	*r* = -0.18	Small	*r* =-0.20	Small – medium
		Good Premorbid Social	*r* = -0.30	Medium		
		Stable Premorbid Academic	*r* =0.02	Negligible		
		Stable Premorbid Social	*r* =-0.11	Small		
Browne et al 2000	**Baseline**	Childhood PSA	*r* = 0.32	Medium	*D*=0.79	Medium - large
		Adolescent PSA	*r* = 0.39	Medium		
Malla et al 2004	Baseline	Premorbid social	*r* =0.24	Small – Medium	*r* =-0.20	Small – medium
		Premorbid Academic	*r* =0.14	Small		
Malla et al 2002b	1 year (Social relations/Daily living)	Early Adolescence	*r* =-0.30	Medium	*r* =-0.23	Small – medium
			r =-0.32	Medium,	*r* =-0.05	Negligible
Addington et al 2003a,b	Baseline	Childhood	*r* =-0.22	Small – Medium	*r* =-0.21	Small – medium
		Early adol	*r* =-0.28	Small – Medium		
		Late adol	*r* =-0.38			

				Medium		
		Typologies	F^2=0.16		N/R	
				Medium		N/A
Addington et al 2004, 2005	1 year	Developmental	F^2=0.20		F^2=0.04	
				Medium		Small
		Childhood	*r* =-0.31		*r* =0-.17	
		Early adol	*r* =-0.24	Medium		Small
		Late adol	*r* =-0.35	Small – Medium		
				Medium		
		Typologies	F^2=0.15		N/R	
						N/A
Addington et al 2005	2 year	Developmental	F^2=0.11	Medium	F^2=0.05	
		Typologies	F^2= 0.16		N/R	Small
				Small		N/A
				Medium		
Harrigan et al 2003	1 year	Mean PAS	F^2=0.10	Small – medium	F^2 =0.06	Small – medium
Harris et al 2005	8 year	Mean PAS	F^2=0.14	Small – Medium	F^2=0.04	Small

Secondly, there is demonstrable dissociation between the effect of premorbid adjustment and DUP upon positive symptomatology, with only DUP having an effect on symptom severity. This is consistent with the existing literature regarding DUP (Marshall et al., 2005; Perkins et al., 2005). However, the findings suggest premorbid adjustment may have a more consistent association with severity of negative symptoms independent of the effects of a prolonged DUP. This finding mirrors the pre-existing literature linking impaired premorbid adjustment to greater severity and intractability of negative symptoms in both early and chronic psychosis (Shtasel, Gur, Gallacher, Heimberg, Cannon, & Gur, et al., 1992, Kelley, Gilbertson, Mouton, & Van Kammen, 1992, Keefe, Mohs, Losonczy, Davidson, Silverman, Horvath, et al., 1989; Goldstein 1978, Schuldberg, Quinlan & Glazer, 1999, Haim, Rabinowitz & Bromet, 2006); and studies suggesting that persistent negative symptoms are displayed by 20 – 25% of FEP patients (Ucok et al., 2006, Edwards, McGorry, Wadell, & Harrigan, 1999), Therefore, the findings support the proposal that early problems in psychosocial functioning are associated with an illness course characterised by greater severity of negative symptoms (Häfner et al., 1995).

The review indicates preliminary support for an association between premorbid adjustment and quality of life, albeit from a small sample of studies. Indeed, over follow-up periods of up to 8 years the data suggests that the effect of premorbid adjustment upon quality of life increases, while the parallel effect of DUP upon quality of life lessens. There is ongoing conceptual debate regarding the operationalisation of quality of life (Lehman 1996), with competing models emphasising either subjective satisfaction with life, or a broader model encompassing social, occupational and interpersonal functioning (Angermeyer & Katschnig, 1997; Malla & Payne 2005). The small sample of studies precluded a formal comparison of competing quality of life models. However, quality of life measures that include overall functioning will by definition overlap with premorbid adjustment – individuals with poorer premorbid adjustment have suboptimal social and educational/occupational functioning prior to illness onset, have a more protracted recovery from psychosis, (e.g. Haim, Rabinowitz & Bromet 2006, Angermeyer & Katschnig, 1997) and thus are at heightened risk of subjectively suboptimal quality

of life at follow-up. In addition, the measure of quality of life (Heinrichs, Hanlon & Carpenter, 1984) used by two of the four cohorts in the review (Larsen, et al., 1998; Addington, et al., 2004, Addington, et al., 2003b, Harrigan et al., 2003, Harris et al., 2005) was designed to assess the "deficit syndrome" in schizophrenia (Carpenter, Heinrichs & Wagman, 1988). Therefore, it has been suggested that the QLS is inappropriate for measuring subjective quality of life (Gourevitch, Abbadi & Guelfi, 2004). There is also a degree of overlap between the findings with regard to negative symptoms and premorbid adjustment, reiterating the position that functional improvement in the 'critical period' (Birchwood, et al., 1998) following FEP is difficult to precisely disentangle from concurrent symptomatic change (Malla & Payne, 2005).

Finally, there is weak evidence of a relationship between premorbid adjustment and global functioning over time, although the small number of included cohorts limits the veracity of this finding. However, given that impaired global functioning is assessed with reference to social, occupational and academic functioning, it would be reasonable to expect an association with premorbid adjustment. Furthermore, studies that investigated the relationship of premorbid adjustment and DUP to global outcome, recovery, treatment response and relapse were not present in sufficient numbers to allow an overview of these respective areas (e.g. Robinson et al., 1999a, b, 2002, 2004). This is congruent with the recent review of long-term follow-up studies that highlighted the paucity of studies adequately documenting premorbid and baseline characteristics of first episode patients (Menezes, et al., 2006).

Limitations of the review

There are several limitations to the review that may limit generalisation of the results. Firstly, the low numbers of studies pertaining to each outcome variable restricts the strength of the findings. This limitation also precluded a more statistically rigorous meta-analysis of the data. However, the findings regarding positive and negative symptoms are broadly consistent with the existing literature. The sample may also have been limited by the decision to exclude dissertations, book chapters and conference abstracts.

Secondly, there is a specific methodological difficulty of using both separate data from the TIPS and Rogaland County cohorts and the combined data from those studies (Larsen et al., 1996 a, b, 1998, 2000, 2004, Melle et al., 2004, 2005b). Each reported study used a different approach to the premorbid adjustment variable, coupled to different outcome variables. As the combined sample was derived from two independently recruited cohorts, the samples were treated as separate studies in the review.

Thirdly, there is considerable heterogeneity within the current literature regarding reporting of premorbid functioning data. The most popular measure of premorbid adjustment, the PAS (Cannon-Spoor et al., 1982), has been variously reported via mean score, academic/social sub-scales, typologies and developmental period. As these disparities complicate the interpretation of findings across cohorts, it would be advantageous for future studies to report findings regarding premorbid adjustment subdivided by academic /social sub-scale, developmental period and typologies.

The review did not systematically investigate the relation of premorbid adjustment to gender and ethnicity. However, it is acknowledged that there are differences in the symptomatic profiles of men and women with psychosis (Leung & Chue 2000, Read, 2004), with men displaying greater negative symptoms, cognitive deficits and poorer premorbid functioning (Leung & Chue, 2000), whereas women have greater affective and paranoid symptomatology (Read, 2004). As there has not to date been a systematic review of gender differences in FEP, this represents an important avenue for further investigation, including exploration of putative associations with premorbid adjustment. Finally, there was not a formal investigation of the validity and reliability of measures of premorbid adjustment; however this has been comprehensively explored by Van Mastrigt and Addington, (2002) although not under the aegis of a systematic review.

The academic and social domains of premorbid adjustment

In the initial operationalisation of the premorbid adjustment construct emphasis was placed upon the importance of assessing both *academic* and *social* adjustment (Strauss, Klorman & Kokes, 1977). However, the current review identified only three cohorts (TIPS project, Rogaland County study and Hillside cohort) that presented data for both academic and social adjustment. An additional six cohorts (Browne et al., 2000; Chen et al., 2005, Ho et al., 2000; Ropcke & Eggers, 2005; Bottlender et al., 2002*)* used premorbid assessments measuring social functioning, (Gupta et al., 1995, Foerster et al., 1991; Phillips 1953,). Indeed, historically, the role of social functioning in premorbid adjustment has been emphasised compared to academic aspects of functioning (e.g. Zigler, Glick & Marsh, 1979; Glick, Mazure, Bowers & Zigler, 1993). It is therefore regrettable that the small number of studies reporting academic adjustment levels precluded comment upon the previously observed correlation with negative symptoms, reported in multi-episode psychosis samples (McGlashan & Fenton, 1992; Maccabe, Albouri, Fahy, Sham & Murray, 2002; Cernovsky, Landmark, & Helmes, 1994; Swanson, Gur, Bilker, Petty & Gur, 1998). The aforementioned limitations not withstanding, it can be seen from the results that social and academic functioning do exert different influences upon outcome variables, For instance, Larsen and colleagues (2004) report a negligible effect of academic course on quality of life, while simultaneously noting a significantly greater effect for social course. This finding supports previous evidence from both acute and chronic schizophrenia samples, emphasising the validity of dividing premorbid adjustment into its sub-components (Mukherjee, Reddy & Schnur, 1991, Van Kammen, Kelley, Gilberson, Gurklis & O'Connor, 1994; Cannon, Jones, Gilvarry, & Rifkin, 1997; Allen, Kelley, Mityake, Gurklis & Van Kammen, 2001). The differential relationship between social and academic components has also been highlighted by an analysis of data from the London, Ontario cohort that was unsuitable for this review (Norman, Malla, Manchanda & Townsend, 2005). These authors reported significant correlations between sub-optimal premorbid academic adjustment, but not social adjustment, and impaired cognitive performance on a variety of standardised neuropsychological tests. However, at 1-year follow-up both premorbid social and academic adjustment were significantly correlated with severity of negative symptomatology. Similarly, in

a further study from the London, Ontario cohort, level of social support at baseline was significantly correlated with DUP (r=-0.37; p<0.01), delay in recognition by others (r=-0.38; p<0.01), treatment delay (r=-0.35; p<0.01), age of onset (r=-0.32; p<0.01), baseline negative symptoms (r=-0.33; p<0.01), and premorbid social adjustment (r=-0,33; p<0.01), but not DUI. Social support at 1 year follow-up was significantly correlated with DUP (r=-0.21; p<0.05), delay in recognition by others (r=-0.23; p<0.05), treatment delay (r=-0.22; p<0.05), and negative symptoms (r=-0.19; p<0.05). Therefore, attention to the sub-components of premorbid adjustment, and their relationship to specific outcome, appears to be a desirable development in the literature.

Deteriorating premorbid functioning

This review highlights the potential benefit of using premorbid typologies, particularly in identifying a "deteriorating" sub-cohort, although there is no standardised approach to the designation of sub-groups. Following Haas and Sweeney (1992), several studies applied an arbitrary classification of "deteriorating" denoting a significant decrease in scores across developmental points, applying a median split to the remaining data to represent "good" and "poor" premorbid adjustment (e.g. Strous et al., 2004 Larsen et al., 1996a; Norman et al., 2005). However, subsequent researchers have used cluster analysis to generate typologies *de novo* from empirical data (e.g., Addington & Addington, 2005; Addington, et al., 2003a; Larsen et al., 2004). This complicates comparison by introducing potentially non-comparable groups, such as "good" deteriorating and "intermediate" deteriorating, (Larsen et al., 2004); or "poor deteriorating" and "deteriorating" (Addington & Addington, 2005). That said, there is broad agreement across cohorts that applied a typological approach that a proportion of 20 – 30% of any given sample of individuals with FEP display a deteriorating course of overall premorbid functioning. Furthermore, deteriorating functioning appears to be independent of DUP (Addington & Addington, 2005; Addington, van Mastrigt & Addington, 2003a; Strous et al., 2004; Haas & Sweeney 1992). Within a typological approach, the need for adequate measurement of the social and academic components is highlighted by Larsen and colleagues (2004), who report a dissociation between the proportions of individuals with stable and deteriorating academic course, compared with social

course. In their sample, a significantly higher proportion of individuals displayed a deteriorating social course without the corresponding deterioration in academic course. This is supported by Strous and colleagues (2004) who also report individuals with a deteriorating course displayed significantly higher levels of social withdrawal over time.

The importance of a Premorbid Developmental timeframe

The results also emphasise the value of assessing premorbid adjustment by sub-division into developmental periods. In particular, viewed retrospectively, adolescence emerges as a key developmental stage in the premorbid history of individuals who later present with FEP. In cohorts where premorbid adjustment was stratified by developmental point, a progressive increase in the strength and consistency of effect sizes is noted for both negative symptoms and quality of life. Epidemiological evidence shows adolescence and early adulthood to be the periods of optimal risk for development of psychosis (e.g. Sartorius, et al., 1986), and numerous studies have documented the impact of onset of psychosis in adolescence upon psychological functioning, social role and quality of life (e.g. Shepherd, et al., 1989; Häfner & Nowotony, 1995; Ritsner, Kurs, Gibel, Hirschmann, Shinarenko & Ratner, 2003). Comparison of first episode adolescent (15 – 18 years) and early adulthood (19 – 30 years) onset psychosis suggests that adolescents with psychosis present with a longer DUP, and higher baseline severity of negative symptoms (Ballageer, Malla, Manchanda, Takhar & Harricharan, 2005). Importantly, the same authors report significantly poorer premorbid adjustment in late adolescence in the adolescent onset group, consistent with an overlap between symptomatology and deteriorating functioning, but no significant differences in childhood and late adolescence. Similarly, compromised premorbid social functioning has been reported as a predictor of poorer outcome in FEP from adolescence onwards (e.g. Strauss & Carpenter, 1974; Torgalsboen 1999; Meng, Schimmelman, Mohler, Lambert, Branik, Koch, et al., 2006).

Distinct developmental pathways to psychosis?

Reduced or deteriorating premorbid functioning during adolescence and beyond has been postulated as evidence of an unfolding neurodevelopmental disorder, becoming increasingly manifest during adolescence (e.g. Weinberger 1987; Murray 1994; Keshavan, Diwadkar, Montrose, Rajarethinam & Sweeney, 2005). However, this approach has in the past often neglected the interaction between neurobiological processes and environmental and social factors pertinent to the individual. For instance, exposure to potentially suboptimal environments such as socioeconomically disadvantaged neighbourhoods (Drukker, Krabbendam, Driessen & van Os, 2006); urban areas (Spauwen, Krabbendam, Lieb, Wittchen & van Os, 2004; Sundquist, Frank & Sundquist, 2004; Kaymaz, Krabbendam, de Graaf, Nolen, ten Have & van Os, 2006), and social factors such as discrimination (Janssen, Hanssen, Bak et al., 2003); being a member of an immigrant minority (Selten, et al., 2001); childhood social adversity (Wicks, et al., 2005); experiencing psychological trauma (Spauwen, et al., 2006) or childhood abuse (Morrison, et al., 2003; Bebbington, et al., 2004; Read, et al., 2005) have been demonstrated to be risk factors for later psychosis. It is perhaps not unreasonable to suggest that the above factors may also have a reciprocal impact upon premorbid adjustment prior to development of psychosis, both in terms of developmental processes and in specific domains of functioning. Indeed, both Birchwood (2003) and Read and colleagues (2001) have suggested that one pathway into psychosis may arise from a psychodevelopmental route. This proposition is also supported by evidence from psychosis samples of difficulties in adult attachment representations (Dozier, 1990; Dozier, Stevenson, Lee & Velligan, 1991; Dozier & Lee 1995); and in recall of suboptimal childhood relationships with parents (Willinger, Heiden, Meszaros, Formann & Aschauer, 2002), factors that will be developed in Chapter 5. It is possible that a more detailed analysis of the characteristics of premorbid adjustment may help illuminate possible distinct developmental trajectories into psychosis. This would also reemphasise the placement of premorbid functioning on a continuum with prodromal symptomatology, the gradual emergence of "negative" symptoms such as social withdrawal (Häfner, et al., 1999); duration of untreated psychosis prior to help-seeking (Larsen, et al., 1996a); and treatment delay within the health system (e.g. Fuchs & Steinert, 2002; Norman, et al.,

2004). Malla and Payne (2005) recommended that *"future studies will need to pay particular attention to operational definitions of outcome and will need to examine the mediating processes, including protective factors, involved in the complex relationships that likely exist between predictors and trajectories of outcome"* (p.665). Furthermore, in terms of clinical practice, the findings reiterate the importance of a full and comprehensive assessment of an individual's psychosocial history as part of routine care for FEP.

The findings of this systematic review also generate several hypotheses for investigation in FEP samples. From the data presented, it would appear that DUP would be solely associated with positive psychotic symptomatology, whereas premorbid adjustment would be solely associated with negative symptomatology. However, both level of premorbid adjustment and length of DUP would be expected to impact upon general psychopathology and quality of life. Furthermore, the data of the current review and that of Marshall and colleagues (2005) would suggest that premorbid adjustment and DUP are independent constructs.

In the current thesis, these hypotheses will be analysed with regard to a representative FEP sample of individuals receiving treatment from early intervention services (Study Two – Chapter 9). The hypotheses are as follows:

1) Increased Positive psychotic symptomatology will be associated with DUP but not premorbid adjustment.

2) Greater Negative symptomatology will be associated with poorer premorbid adjustment but not DUP.

3) Poorer Premorbid adjustment will be associated with greater General Psychopathology.

4) Longer DUP will be associated greater with General Psychopathology.

5) DUP and premorbid adjustment will not be significantly associated with each other.

6) Poorer premorbid adjustment will be associated with diminished quality of life.

7) Longer DUP will be associated with diminished quality of life.

In addition, it would be pertinent to explore the relationship of both DUP and premorbid adjustment to helpseeking prior to onset of treatment, and adjustment to psychosis after the onset of treatment. Although not empirically evaluated in the current chapter, these aspects of FEP were discussed in Chapter 2 (pp's. 32 – 33 & 38 – 39), and follow logically from the discussion of developmental trajectories into psychosis outlined in the preceding section, building upon the work of Skeate and colleagues (2002) and Tait and colleagues (2003). Following from Skeate et al (2002) one would expect shorter DUP to relate to greater helpseeking prior to onset of treatment. In contrast, following Tait et al (2003), one would expect both DUP and premorbid adjustment to impact upon engagement with services after the onset of treatment. Therefore, two further hypotheses will be tested in Study two. These are detailed below:

1) Shorter DUP will be associated with greater helpseeking during the DUP.

2) Longer DUP will be associated with poorer engagement with clinical services.

3) Poorer premorbid adjustment will be associated with poorer engagement with clinical services

Chapter 4:

Attachment and Mentalisation as theoretical constructs of value to the study of First Episode Psychosis

Introduction

Following the previous chapter's review of premorbid functioning in FEP, a more detailed examination of the relationship between psychodevelopmental constructs and psychosis may be of value in elucidating a richer understanding of pathways into (e.g. Skeate et al., 2002), and adjustment to, the experience of first episode psychosis (e.g. Birchwood, 2000; Drayton et al., 1998; Tait et al., 2003, 2004). This echoes Birchwood's (2003) proposal that one route into psychosis may arise via a socio-developmental trajectory. An appraisal of the above issues from a psychodevelopmental standpoint may also have implications for enhancing understanding of the three 'landmarks' of early intervention highlighted by Addington (2007). Firstly, applying a psychodevelopmental perspective to the investigation of the DUP (Wyatt 1991) may improve understanding of the role help-seeking plays (e.g. Addington et al., 2002; Haley et al., 2003; Dozier et al., 1991) in promoting or inhibiting an individual's progress into treatment for FEP. Secondly, psychodevelopmental theory could potentially inform novel approaches for intervening during the "critical period" (Birchwood et al., 1998) particularly in terms of reducing secondary impairments such as post psychotic depression (Birchwood, et al., 2000), social anxiety (Karatzias, Gumley, Power, & O'Grady, 2007) or PTSD (Jackson, et al., 2004), while concurrently aiding recovery, preserved social networks (Thorup et al., 2005b) and staying well (Gumley & Schwannauer, 2006). Thirdly, given the peak incidence for onset of psychotic disorders is early adulthood (Jablensky et al., 1992), the utilisation of early intervention (McGorry, Simonsen & Nordentoft 2005) or "on time intervention" (Addington, 2007; p.295) principles, embracing a wide range of psychological, social, systemic and pharmacological interventions could be accentuated by a developmental perspective sensitive to the individual's idiosyncratic context.

Previous Developmental Theories of Psychosis

Traditionally, developmental theories of psychosis have emerged from a biological context, predicated on abnormal neurodevelopment (e.g. Murray 1994; Weinberger 1987), sequelae of obstetric complications or low birth-weight (e.g. Cannon, Jones & Murray 2002), or longitudinal follow-up of individuals with a strong family history of psychosis, and thus postulated to be at heightened risk of psychosis (e.g. Carter, Schulsinger, Parnas, Cannon, Mednick 2002). However, with the exception of the 1966 North Finnish Birth cohort (e.g. Isohanni, Jones, Kemppainen, Croudace, Isohanni, Veijola, et al., 2000), these approaches have often focussed on biological or environmental variables, at the expense of consideration of psychological or interpersonal variables, or inter-relationships between the aforementioned factors. A second difficulty with some neurodevelopmental models (e.g. Weinberger, 1987, Weinberger & McClure, 2002) arises from the proposition that the deficit leading to later psychosis occurs early in life, but only manifests itself later, or after a second environmental insult in later adolescence (e.g. Maynard et al., 2001). In a "two hit hypothesis" the 'environmental' insults are defined as factors in the environment with direct impact on neurochemical and hormonal transmissions e.g. birth season, seasonal viral infections, diet (Torrey, Miller, Rawlings & Yolken, 1997; Yolken & Torrey 1995; Hulshoff Pol, Susser, Brown, Dingemans, Schnack, et al., 2000) which generate a biological disease process in late adolescence/early adulthood– thus the second hit is a trigger for an endogenous biological process. This proposition neglects the impact of ongoing interactions between the individual and their *psychosocial* environment (through child, adolescent and early adult development) and the impact that such interactions have upon the ontogenesis of one's biological, emotional, cognitive and interpersonal characteristics (e.g. Schore, 2004a, b). Finally, several proposed developmental theories of psychosis and schizophrenia have been found to be non-specific markers of psychopathology *in general*, rather than of psychosis *per se*, such as delays in reaching developmental milestones (van Os, Lewis, Wadsworth & Murray, 1996), season of birth (Torrey, Miller, Rawlings & Yolken, 1997), or enlarged cerebral ventricles (Schulz, Friedman, Findling, Kenny, Swales & Wise, 1998). Therefore, an alternative developmental approach to understanding psychosis could be to utilise the principles from psychodevelopmental theory, and

applying these to known aspects of psychosis, such as factors influencing onset and adaptation to the disorder, or using theory to provide a perspective on the phenomenology of psychotic symptoms. Attachment theory (Bowlby, 1969, 1973, 1980; Ainsworth, Blehar, Waters & Wall, 1978; Hazan & Shaver 1987, Main 1990, Cassidy & Shaver, 1999) may prove to be suitable for this task.

Attachment theory as a developmental theory par excellence

Several authors (Bentall et al., 2007; Berry, Barrowclough & Wearden, 2007; Liotti & Gumley 2008) have explored contrasting theoretical perspectives on how an appreciation of attachment concepts could enhance current psychological theories of psychosis (e.g. Garety, Kuipers, Fowler, Freeman & Bebbington, 2001; Morrison et al., 2003; Freeman & Garety, 2003). Consistent with these authors, the current thesis contends that an attachment informed perspective on psychosis forms an ideal framework for integrating cognitive, emotional/affective and neuroscientific data on psychosis, while also providing testable hypotheses pertaining to symptomatology, outcome and prospects for therapeutic interventions for this complex mental health difficulty. In addition, for reasons that will be expanded upon herein, contemporary attachment theory provides an integrative approach that is also consistent with the emerging renaissance in theoretical approaches to the psychopathology of psychosis which emphasise the role of emotional dysregulation in the epigenesis of, and recovery from psychosis (e.g. Ciompi, 1988; Gumley, White & Power 1999; Freeman & Garety, 2003; Birchwood 2003, Liotti & Gumley, 2008). Therefore, in the following two chapters I first wish to outline the richness of attachment theory as a framework for understanding both the ontogenesis of general psychological development, and as a construct for understanding maladaptive psychological processes. Given the complexity of attachment theory and it's implications for understanding help-seeking, mentalisation and affect regulation, the theoretical and empirical foundations of attachment will be explored in some detail. I will also sketch out the implications for empirical research of the two main approaches to measuring attachment: attachment states of mind (e.g. Main 1990) and attachment style (e.g. Crowell, Fraley and Shaver, 1999). Thereafter, I wish to discuss the current status of attachment research in providing insights into psychopathological processes,

focussing in particular on attachment and mentalisation-based approaches to Borderline Personality Disorder (e.g. Fonagy & Bateman 2006; Fonagy & Target 2007). Finally, I will delineate an integrative conceptual framework for modelling aspects of psychosis from an attachment-informed perspective.

Attachment Theory - An Overview

This thesis will adopt the contemporary definition of attachment as *a developmentally oriented, psychobiosocial approach to the formation and maintenance of close interpersonal ties* (e.g. Sroufe 2005; Schore, 2004a, Main, Hesse & Kaplan, 2005). This definition follows from the fundamental premise of attachment theory, as Bowlby initially formulated in his seminal 'Attachment and Loss' trilogy (1969, 1973, 1980)– that attachment is an *evolutionarily* grounded, *lifespan* model of social behaviour, reflected in human biological, cognitive, and emotional ontogenetic development. Attachment theory is consistent with a plethora of psychobiosocial theories of emotional development which emphasise the significance of the establishment of an affectively based social communication between carer (particularly the mother-figure) and infant (e.g. Bowlby, 1969, Sander, 1970 Brazelton, Kowslowski, & Main, 1974, Trevarthen, 1980; Stern, 1977, 1984; Fonagy et al., 2002). This approach is further contained within a conceptualisation of *intersubjectivity* (Braten, 1998; Stern 1995; Trevarthen, 1979) - whereby "*subjective mental states of the self can be recognised as being similar to corresponding mental states of the other, and as such, are being experienced as being "shared" with her* {the mother}" (Fonagy et al., 2002; p.210). It is the position of attachment theory that early attachment relationships with carers form the first prototype for future schemata governing how the individual regulates their own cognitive and affective states, and their interpersonal relationships with close others, throughout life.

In infancy, the attachment system acts as a dyadic arrangement, facilitating physical proximity between infant and care-giver in times of potential distress or uncertainty for the infant, balanced against the goal of facilitating explorative behaviour. This physical proximity fulfils the evolutionarily derived need for infants to have access

to a place of safety in times of perceived threat or distress (Bowlby, 1969), which for primates is performed by the *attachment figure* (Bowlby, 1969). Over the course of the first year of life the contingency between care-seeking infant and primary care giver builds to form a distinct pattern of secure or insecure attachment behaviour (Ainsworth et al., 1978; Main, Kaplan & Cassidy 1985). When the attachment system between infant and carer functions optimally, the care-giver acts as a 'secure base' for the infant, acting to quickly and efficiently sooth the infant, allowing explorative and playful behaviour to recommence (Vygotsky, 1978), while remaining available to the infant as and when the situation changes. The proximal goal of the attachment system is therefore an interpersonal mechanism to regulate emotionally valenced experiences - facilitating a felt sense of 'security' (Sroufe & Waters, 1977, Sroufe 1996). It is important to note that for 'secure base' interactions to be the norm in the dyad, the contingency between carer and infant does not have to be perfect, merely situationally consistent in the majority of occasions where the attachment system is invoked. This is congruent with other theories of the ontogeny of psychological development such as Winnicott's 'good enough parent' (1971); and Stern's concept of 'attunement' in the mother-infant dyad as the origin of self-other representations (1985). Main, et al., (2005) note that for the infant, the attachment system leads to the *formation* of an attachment bond, even if there is only minimal interaction with the caregiver. However, they go on to note that the second characteristic of the attachment system concerns the *propensity* to which the infant chooses to utilise the attachment figure in times of distress or uncertainty, and it is this qualitative aspect of the attachment system which goes on to influence attachment states of mind in infancy and beyond.

The delineation of categories of attachment behaviour stems from Ainsworth's pioneering empirical procedure – the Strange Situation Test (SST, Ainsworth et al., 1978) - whereby the infant's response to a series of experimental episodes of short separation and reunion from the attachment figure, coupled with the infant's reaction to the presence of a 'stranger' in the experimental milieu, form the basis of a judgement on security or insecurity of attachment. In the case of an infant adjudged to be "secure" in their attachment relationship with their parent, the infant's

behaviour is characterised by some distress on separation, the active seeking of proximity on the carer's return, with reciprocal rapid soothing of distress by the attachment figure, and a quick return to explorative/play behaviour (Ainsworth et al., 1978). In 'low-risk' attachment samples 65 – 75% of 1 year old infants are classified as secure on the SST (Fox, Kimmerly & Schafer, 1992; Waters, Weinfield and Hamilton 2000). The salutogenic effects of secure attachment on infant and child development are manifest, encompassing the ability to experience negative emotions without being overwhelmed, while retaining the ability to communicate the impact of these emotions (Grossmann, Grossmann & Schwan 1986). The functioning of the attachment system is also critical in the development of the capacity to regulate and control attention, particularly in social scenarios (Harman, Rothbart & Posner, 1997; Fonagy & Target 2006), initially through joint attention between attachment figure and infant, progressing towards increasing autonomy in the infant (Mundy & Neal, 2001, Belsky & Fearon, 2002; Fearon & Belsky, 2004). Organised attachment strategies also act to promote the precocious development of a nascent 'theory of mind' or mentalisation capacity in young children (Meins et al., 1998). Importantly, children who enjoy a secure attachment relationship with their attachment figure will over time need to activate the attachment system less in their dyadic relationships with caregivers, permitting the development of mentalisation and affect regulation strategies in a relatively 'safe' risk-free interpersonal environment (Fonagy & Target 2006).

Conversely, when the dyadic interaction between infant and caregiver is sub-optimal, the relationship is characterised by an insecure attachment strategy (Ainsworth et al., 1978). The principal infant insecure attachment strategies are Anxious (insecure) - Avoidant and Anxious (insecure)-ambivalent. Using the SST, these classifications, represent approximately 25% and 10% respectively of infants in a low risk population (Fox, Kimberly & Schafer 1992). In the Anxious-Avoidant pattern, the infant experiences the carer as more likely to be inaccessible or rebuff of the infant's attachment behaviours, rendering the infant more likely to adopt a stance which minimises interaction at times of distress, and avoid displays of emotion at these times. In the SST, the avoidant pattern is characterised by the infant displaying little

overt emotion at separation from the attachment figure, with an emphasis on continued exploration or play. On reunion the infant continues to ignore the care-giver and will resist or turn away from attempts to initiate contact. Furthermore, the caregiver tends to minimise eye and physical contact, with the infant, rebuffing or minimising the infant's expression of attachment related distress (Main & Weston 1982). Therefore, the insecure-avoidant attachment pattern is characterised by the reciprocal minimisation of attachment related experiences, perhaps as an adaptive attempt to control the emotional consequences of distress. Indeed, psychophysiological evidence suggests that infants displaying an insecure-avoidant pattern during the SST also experienced increased heart rate (Sroufe & Waters 1977b) and increased cortisol expression (Spangler & Grossmann, 1993), congruent with the deployment of a strategy to control emotional arousal. In this attachment scenario, the necessary allotment of increased mental resources to controlling negative affect, if prolonged over time could hypothetically leave the infant less able to develop an *integrated* stance towards the regulation of affect and the development of mentalisation, as resources remain focussed on suppressing one's own affect, without allowing for the emergence of a nascent understanding of emotionally valenced interpersonal dynamics.

In the second insecure pattern, anxious-ambivalent, the carer is highly inconsistent in the provision of secure base characteristics, oscillating between rejection and acceptance of the infant. The infant will display a correspondingly mixed pattern of approach and avoidance, often remaining visibly anxious and reluctant to resume explorative behaviours (Ainsworth et al., 1978). In terms of the infant's response to the SST, they will become visibly distressed at separation, and fail to settle and resume exploration/play on reunion. Unlike the infant in the secure pattern, the presence of the attachment figure does not act as a soothing influence; and the infant themselves, unlike the infant in the anxious-avoidant pattern, seems unable to inhibit their own emotional distress. In both insecure patterns, affect is *dys*-regulated via the attachment system – *over*-regulated in the avoidant pattern, and *under*-regulated in the case of the anxious-ambivalent scenario. Crucially, as the interpersonal environment is sub-optimal, for infants in both situations, novel,

unfamiliar situations continue to be novel and unfamiliar, and thus implicitly threatening in nature.

At this juncture, it also important to note that research into gene/environment effects in attachment have consistently shown that there is little evidence of a genetic effect on attachment status in infancy and childhood, and a consistently stronger influence of environmental influences (Bokhorst, Bakermans-Kranenburg, Fearon, van IJzendoorn, Fonagy & Schuengel 2003; O'Connor & Croft, 2001; Sagi, Bakermans – Kranenburg, Scharf, Koren-Karie, Joels, & Mayseless, 1995; van IJzendoorn, Moran, Belsky, Pederson, Bakermans-Kranenburg, & Kneppers, 2000; Ward, Vaughn, & Robb, 1988). Therefore, the development of an organised attachment pattern is profoundly influenced by the quality of the interpersonal environment and associated factors.

The case of disorganised attachment

A fourth pattern – Disorganised/disoriented "D" attachment (Main & Solomon 1986, 1990) – is displayed by approximately 15% of infants (van IJzendoorn et al., 1999). Disorganised "D" attachment denotes a dyadic interaction that is characterised by fearful or disorientating behaviour by the care-giver, mirrored in the infant by disorganised, conflicted or dissociated attachment behaviour. The 'Disoriented' segment of the label indicates that, within the SST at least, the infant lacks orientation to the interpersonal environment (Main, et al., 2005). 'D' categorisation is also more prevalent in samples drawn from low socioeconomic backgrounds (34%; van IJzendoorn, 1999), and samples deemed as 'high-risk' (34 – 45%; Carlson 1998). In the SST, infants who are assigned the 'D' categorization display sequential or simultaneously contradictory behaviours, directionless or incomplete movements and expressions, stereotyped or disjointed behaviours, freezing or slowed movements towards and away from the attachment figure, and expressions of visible apprehension regarding the attachment figure. These bouts of disorganisation can be as little as 10 – 30 seconds in duration, and as a reflection of their 'temporary' status, another attachment classification is always assigned as a secondary category (Main,

et al., 2005).. When viewed in evolutionary terms, the infant is caught in a paradoxical situation – the attachment figure is simultaneously the source of purported safety and a source of threat. In this situation, the behavioural strategies normally evoked by attachment become contradictory – to *approach* the attachment figure, and simultaneously to *escape* the source of fear– generating an experience for the infant characterised by Main (1995) as "fright without solution" (p. 434). This situation leads to the behavioural indicators used in the" D" classification listed earlier – actions that are conflicted, incomplete and by definition lacking a coherent "*organization*". Despite the temporary nature of the disorganised pattern, it is clear that the infant is at a prospective heightened risk of a maladaptive response when under stress. Indeed, meta-analysis of the "D" category has linked the pattern to increased risk of later psychopathology (van IJzendoorn, Schuengel & Bakermans-Kranenburg, 1999), particularly dissociative-like behaviours in childhood, adolescence and adulthood (Liotti, 1992; Carlsson, 1998) and aggressive behaviours (Lyons-Ruth, 1996; Lyons-Ruth & Jacobvitz 1999).

Furthermore, there is a small but statistically significant association between infant "D" status, and the presence of an unresolved loss or trauma experience within the caregiver's history (van IJzendoorn et al., 1999). Indeed, it has been suggested that the caregiver's state of mind with regard to attachment can be characterised by non-integrated internal representations of their self and attachment figures, imbued with representational memories of hostile or helpless interactions (Lyons-Ruth, Yellin, Melnick & Atwood, 2003). An association between higher levels of depression and intrusive thoughts (on an assessment scale for Post-Traumatic Stress Disorder) have also been found to predict infant "D" status (Hughes, Turton, McGauley & Fonagy 2006). Evidence also suggests that in "high risk" groups, such as adolescent mothers, maternal interactions that are disengaged from or insensitive to the infants mediate the association between parental unresolved states of mind and infant disorganisation (Bailey, Moran, Pederson & Bento, 2007a). There is also evidence that infant disorganization is increased in the SST behaviour of infants next born after an earlier stillbirth, and that the relationship between maternal experience of stillbirth and disorganisation in the infant is mediated by the mother being Unresolved (see

below) to the earlier stillbirth (Hughes et al., 2001) . Therefore, it would appear that the attachment figures' interactions with their own infant are thus themselves disorganised as they activate attachment representations which are emotionally dysregulated, un-integrated and overwhelming (Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999; Liotti, 1992).

There is conflicted evidence of a genetic influence upon disorganised attachment in infancy, with some studies reporting a genetic linkage (e..g van IJzendoorn & Bakermans-Kranenburg, 2006, Lakatos, Toth, Nemoda, Ney, Sasvari-Szekely, & Gervai, 2000, Lakatos, Nemoda, Toth, Ronai, Ney, Sasvari- Szekely, et al., 2002), and some studies reporting no significant genetic effect upon infant "D" status (Bokhorst et al., 2003; Bakermans-Kranenburg & van IJzendoorn, 2004), or a differentially smaller effect in comparison to environmental variables (Madigan, Bakermans-Kranenburg, van IJzendoorn, Moran, Pederson & Benoit, 2006). However, much of the variance in infant disorganisation remains unexplained. The most parsimonious explanation of attachment disorganisation may well be that it is the result of a complex interplay of biological, constitutional, and interpersonal variables with the experience of trauma and loss in both attachment figure and infant.

Finally, also of relevance to the study of psychosis, disorganised attachment behaviour in infants has also been linked to higher levels of maternal paranoia (Espinosa, Beckwith, Howard, Tyler, & Swanson, 2001), while disorganised attachment characteristics at age 6 have been linked to high levels of expressed emotion (including overinvolvement and criticism) displayed by the attachment figure (Jacobsen, Hibbs, & Ziegenhain, 2000.). This last finding is of interest to the current thesis as the defining features of "Expressed Emotion" – overinvolvement and criticism - are not inconsistent with the parental behaviours associated with the anxious/ambivalent and anxious/avoidant categories of the SST (and also the Preoccupied and Dismissing Adult Attachment categories discussed below). Therefore it is of note that the contradictory facets of overinvolvement and criticism displayed by the parent link with an attachment pattern in the offspring which is

characterised by the experience of fearful or contradictory parental behaviour in situations where the attachment system is activated.

Attachment States of Mind in Adolescence and Adulthood

As the individual progresses through childhood, adolescence and into adulthood, attachment patterns become increasingly abstracted and internalised, guiding cognitions, emotions and behaviours in close interpersonal relationships – characterised as interpersonal schemata or 'internal working models' (Bowlby, 1980; Bretherton 1985; Bretherton & Munholland 1999). The measurement of adult attachment representations or 'states of mind with regard to attachment' (Main, 1985) has predominantly been conducted using the Adult Attachment Interview (AAI; Main, Goldwyn & Hesse, 2002) – whereby attachment representations are measured by the coherence and quality of the narrative constructed by the individual, specifically when recalling and reflecting upon their recollections of attachment related memories. The narrative constructed in the AAI is *not* interpreted as an objective measure of an individual's attachment history, the narrative, and thus the state of mind with regard to attachment is derived from the individual's *recollection* and *interpretation* of their experiences. Furthermore, narrative coherence in the AAI is governed by four "conversational maxims" of discourse (Grice, 1975, 1989; Hesse 1999) – quality, quantity, relevance and manner (see Chapter 7 – Methodology). The linguistic task facing the narrator in the AAI is to give a reflective account of his or her attachment related experiences, and the effects of said experiences displayed via a discourse that at an optimal level remains *truthful* and *collaborative* (Main, et al., 2002). This provides the listener with "*a unified, yet free-flowing picture_of the speaker's experiences, feelings and viewpoints within the interview"* (Main, et al., ., 2002; p.42). It is from this discourse that the underlying state of mind with regard to attachment is identified.

The classifications of the AAI are directly derived from Ainsworth's SST classifications, and the over-arching theoretical principles guiding the AAI as an assessment tool are grounded in this tradition of attachment representations (Hesse,

1999). Over successive refinements of the interview protocol, three main categories of attachment have emerged, closely mirroring the infant patterns. Individuals with a Secure/Autonomous state of mind with regard to attachment discuss attachment relationships and experiences in a manner that is clear and collaborative, integrating and reflecting upon both positive and negative experiences with attachment figures. Meta-analytical evidence suggests this stance accounts for approximately 58% of the total sample in low-risk samples (van IJzendoorn & Bakermans-Kranenburg, 1996). The same meta-analysis reported 24% of adults in low-risk samples narrate attachment representations suggesting a dismissing stance towards attachment. This pattern is characterised by minimising of attachment relationships and experiences either by unconvincingly portraying these in a positive light, or by 'down-playing' the effects of negative experiences. Lack of specific autobiographical memories is often a striking quality of these narratives. Thirdly, 18% of adults narrated a preoccupied attachment state of mind, whereby the individual struggles to coherently represent attachment relationships and experiences, due to an overemphasis on angry or fearful aspects of the relationships, or a marked inability to productively articulate their feelings (van IJzendoorn & Bakermans-Kranenburg, 1996). A separate classification of Unresolved/"U" status has also been delineated (Main and Solomon, 1986; Main and Hesse, 1990), analogous to infant "D" categorisation reflecting the breakdown of coherent discourse specifically when loss or abusive experiences are discussed. A main attachment classification is also given for these cases. In van IJzendoorn & Bakermans-Kranenburg's (1996) meta analysis of samples pertaining to non-clinical mothers, when "U" categorisation was added to the three secure/insecure categories the following distribution emerged: 55% of the sample was categorised as Secure, 16% Dismissing, 9% Preoccupied, and 19% Unresolved. A similar distribution was reported for non-clinical fathers. The strong link between adult "U" state of mind and infant "D" status in their offspring has been well documented, as will be discussed later in this chapter (van IJzendoorn et al., 1999; Liotti 2006).

A low percentage of interviews in non-clinical samples, and a significantly higher proportion of interviews from clinical samples (e.g. Hesse 1996; Fonagy et al., 1996;

Levy, Meehan, Kelly, Reynoso, Weber, Clarkin, et al., 2006) are assigned the categorisation of "cannot classify". This category is assigned when either a) no clear attachment strategy can be identified from the interview narrative, and/or b) there is a global breakdown of discourse, as opposed to the localised breakdown in discourse witnessed in "U" narratives.

An alternative approach to the classification of AAI narratives has been to use a Q-sort methodology (Kobak 1989), whereby a set of 100 descriptor items are assigned to nine-attachment categories, leading to a degree of correlation between the individual transcript and two dimensions: Security/anxiety and strategies for dealing with distress (hyperactivating/deactivating). Using this methodology, high positive correlations with the security/anxiety dimension are consistent with secure/autonomous categorisation on Main et al's (2002) AAI coding frame (Kobak, Cole, Ferenz-Gillies, Fleming & Gamble, 1989). High positive correlations with the 'strategies for dealing with distress' dimension are consistent with an avoidant/deactivating strategies and a Dismissing attachment classification; whereas high negative correlations on this dimension reflect hyperactivating strategies and a Preoccupied attachment classification (Kobak et al., 1989). Discriminant function analysis of this method revealed concordance rates with the Main, Goldwyn & Hesse (2002) coding frame of between 88 – 94% concordance (Kobak et al., 1989), although a dimensional coding for Unresolved and Cannot Classify transcript descriptors has not as yet been constructed using the Q-sort method.

Table 4.1: Correspondence of Strange Situation Test patterns to Adult Attachment Interview Categorisations (adapted from Hesse 1999)

Infant Strange Situation Test Behaviour	State of Mind with regard to Attachment
Secure ("B"): Explores room and toys with interest prior to separation from attachment figure. Signs of missing attachment figure during separation episodes. Clear preference for attachment figure over stranger. Actively greets parent on reunion, initiating physical contact. Settles after contact with attachment figure, returning to exploration/play.	**Secure/Freely autonomous ("F"):** Discourse is collaborative and coherent. Valuing of attachment, but objective in discussion of experiences. Recall of and reflection upon attachment related experiences is consistent, regardless of positive/negative content of experiences. Few violations of Gricean maxims.
Anxious-Avoidant ("A"): Unlikely to cry on separation from attachment figure. Actively avoids and ignores attachment figure on reunion (e.g. moving or turning away, leaning out). Minimal proximity seeking, distress or anger. Interaction with attachment figure unemotional. Focus on toys or surroundings throughout SST.	**Dismissing ("DS"):** Attachment related experiences minimised or dismissed. Relationships normalised, with generalised descriptions and poor autobiographical recall, or memories recounted contradict semantic account offered. Violations of Gricean maxim of quality via above, and frequent violations of quantity through excessive succinctness.
Anxious-Ambivalent/Resistant ("C"): Appears wary and/or distressed prior to separation. Unlikely to explore. Preoccupied with attachment figure throughout SST, either passively or angrily. Slow to settle on reunion with attachment figure. Continued focus on	**Preoccupied ("E")** Preoccupation with attachment related experiences expressed via passive, angry or fearful discourse. Sentences and passages overlong, grammatically enmeshed, and replete with vague identifiers ("this and that").

attachment figure, crying and expressing distress.	Frequent violations of Gricean maxims of manner, relevance and quantity.
Disorganised/Disoriented ("D"):	**Unresolved ("U")**
Behaviour of infant is with attachment figure disorganised/disoriented, indicative of collapse of coherent attachment strategy – e.g. freezing; rising then falling prone, clinging to attachment figure while crying.	Striking lapses of monitoring or reasoning in the specific instance of discussing loss and/or abuse. Indicated through speech such as belief that deceased is still alive or eulogising discourse, absorption into sensory memories, and/or subtle dissociation.

Conceptual and Empirical similarities between the AAI and the SST

One of the most striking aspects of research using the AAI has been the strength of the association between Adult Attachment State of Mind and Attachment organisation in the offspring, assessed in infancy via the SST and in adulthood using the AAI. In Main and Goldwyn's (1985, 1998; Hesse, 1999) initial sample of parent-infant dyads the correlation for three-way (secure/dismissing/preoccupied) categorisation between the AAI transcript of the mother and the infant's SST behaviour 5 years previously was 75% (37% expected by chance, kappa=.61; p<.001; mother/infant n = 32). For father/offspring dyads the correlation was 69% (46% expected by chance, kappa=.41; p<0.05; father/infant n-35). Van IJzendoorn's (1995) comprehensive meta-analysis of 18 parent/offspring samples (comprising 854 dyads) showed an association between adult Autonomous/secure narratives and secure infant categorisation on the SST, and between adult insecure categorisation (dismissing or preoccupied narratives) and infant insecure categorisation. This pattern of association was present in 75% of dyads, giving a strong effect size (d=1.06; r=.49, biserial r=.59), hypothetically requiring 1087 subsequent null results to render the association non-significant. In the same meta-analysis the effect sizes for the association between adult dismissing categorisation and infant avoidant attachment behaviour was d=1.02; and the effect size for adult preoccupied status and infant ambivalent attachment behaviour was d=0.93. All effect sizes are therefore considered strong using Cohen's (1988) effect size conventions.

These associations were evident even when adult attachment status is measured before the birth of the infant (Fonagy, Steele, and Steele, 1991; Radojevic 1994; Benoit & Parker, 1994; Ward and Carlsson, 1995; Steele, Steele and Fonagy, 1996). Benoit and Parker (1994) reported on transmission of attachment categorisation across three generations: mothers (grandmothers), their own daughters, and the daughter's offspring. The correspondence between mother and daughter AAI classification was 75% (49% expected by chance; kappa=.51; $p<.05$). Grandmothers AAI classification was also significantly associated with the SST behaviour of their own grandchildren, with 65% of the 77 grandmother-mother-infant triads displaying corresponding attachment classifications in all three generations, albeit with a significant skewing of the sample towards secure attachment classifications. In addition, in a sample of 126 genetically unrelated siblings, significant concordance rates were recorded for both secure/insecure and three-category (autonomous/dismissing/preoccupied) attachment classification, suggesting the importance of environmental factors in determining attachment status persists into adulthood (Caspers, Yucuis, Troutman, Arndt & Langbehn, 2007). The crux of the concept of inter—generational transmission is therefore that attachment representations are markedly tenaciously held, persisting over and above other dynamic or constitutional variables such as life events, social networks, temperament or level of mental wellbeing (Fonagy, Steele, Steele, Higgitt, & Target, 1994).

Attachment across the lifespan

However, longitudinal research has so far failed to resolve the issue of how longitudinally stable attachment representations are *within* subjects, an important aspect of the theory given Bowlby's (1978) articulation of attachment as a lifespan model. Taking advantage of the one-to-one mapping of SST (Ainsworth et al., 1978) categories to AAI (Main, et al., 2002) categories, several studies have suggested that attachment classification is significantly more likely to be contiguous from childhood to adulthood, rather than discontiguous (Hamilton, 2000; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Contrary to this, other longitudinal studies,

using the same methodology, suggest that change in attachment classification is more likely to be the norm (Lewis, Feiring, & Rosenthal, 2000; Weinfield, Sroufe, & Egeland, 2000). In particular, and consistent with Bowlby's (1973) theoretical predictions, stressful life events (such as parental loss, separation, parental mental health difficulties, or child maltreatment) in the period between childhood and adulthood can lead to change in attachment representations. Furthermore, in a study of couples experiencing the transition to marriage, this life event was associated with a change in attachment classification, measured using the AAI in a sizeable minority of spouses (22%; Crowell, Treboux, & Waters, 2002). Similarly, Davila and Cobb's (2003) 1-year longitudinal study of attachment in young adulthood, suggested that life stressors such as romantic relationship difficulties, loss, separation and conflicts were associated with change in attachment status when measured by the Family and Peer Attachment Interview (Bartholomew 1998).

A Meta- analysis (Waters et al., 2000) of the consistency of attachment stability from immediate test-retest (measured using the SST) onwards up to age 19 (measured using the AAI) suggested that the test-retest correlation for secure-insecure attachment classification, across any time interval would be approximately r=.39; equivalent to 70% of children classified secure in infancy, remaining secure at follow-up (Fraley 2002). This suggests that although attachment representations are tenaciously held, events and experiences from infancy onwards, particularly those of an interpersonal nature, which violate the expectations of one's attachment model may, without ameliorative intervention either through significant others, social support networks or therapeutic intervention, have stable and enduring effects on an individual's attachment status. Bowlby (1973, 1988b) surmised this process through the elegant metaphor of '*branching railway lines*', emphasising that attachment organisation across the lifespan is an ongoing, dynamic process. Therefore, an individual's attachment representations may be altered or changed by life events, or significant relationships with others. For instance, a difficult interpersonal environment experienced during infancy and childhood, branching away from an optimal developmental trajectory, and conveying an increased likelihood of insecure attachment and psychological difficulties, may be supplanted by a positive, secure

attachment in adolescence and adulthood, such as a relative or romantic partner, steering the individual back towards salutogenic development. However, if attachment representations are already insecure, the impact of *negative* interpersonally salient life events upon the individual could have a negative effect on that individuals' psychological well-being proportionally greater to the effect upon an individual with an initially secure attachment representation. Finally, the effect of interpersonally salient life events such as loss, separation or trauma upon individuals with Unresolved attachment status will be particularly accentuated with respect to implications for mental well-being. Finally, it is of note that the therapeutic utility offered by a clear understanding of attachment dynamics remains intrinsic to Bowlby's (1988a,b) theorizing.

Attachment Style and Attachment States of Mind compared

At this juncture, it is also important to acknowledge that a separate, but equally valid approach to assessing attachment in adulthood emerged from social psychology approaches to using attachment *style* as a conceptual basis in the development of adult romantic attachments; predominately quantified using self-report measures (Hazan & Shaver, 1987; Bartholomew, 1990; Fraley & Shaver, 2000). The attachment style tradition has conceptualised attachment categories as reflections of individual differences regarding one's beliefs and expectations of self and other in close relationships. Researchers utilising attachment style measures have generated a variety of approaches to quantifying these individual differences. These have included replication of Ainsworth's (1978) original SST categories (e.g. Hazan & Shaver 1987), four category models based on permutations of positive and negative models of self and other (e.g. Bartholomew & Horowitz 1991, Griffin and Bartholomew 1994), and even five category models (e.g. Feeney, Noller and Hanrahan 1994). However, a substantial body of research has led to a consensus opinion that conceptually, attachment styles are *best* represented dimensionally, via discriminant functions of attachment *anxiety* and *avoidance,* located within a two-dimensional space (Bartholomew & Horowitz, 1991; Feeney, Noller & Hanrahan, 1994; Brennan, Clark & Shaver 1998; Fraley & Waller, 1998; see also current Chapter 6). This is also

consistent with Ainsworth et al's (1978) original discriminant function analysis of infant-mother SST data.

Adopting an attachment style approach permits the administration of large scale research studies, allowing for sophisticated statistical modelling techniques (see Chapter 6), an approach which is not possible using the AAI due to the complexity of the interview administration and coding process. However, the counterpoint to this advantage of self-reported attachment concerns the validity of the attachment styles measured. It is inaccurate to suggest that self-reported attachment measures describe attachment classifications as they appear in the developmental tradition of Ainsworth and Main. This is because self-report measures intrinsically rely upon the respondent's own *conscious* stance towards attachment. This is relatively straightforward in the case of a respondent with a secure attachment *state of mind* – a hallmark of this category is a reflective balanced representation of one's attachment experiences, therefore the respondent would be expected to record a balanced summary of their attachment *style* in a questionnaire (indeed they may even over-accentuate one's attachment insecurities, anxious or avoidant). However, the disparity between interview and self-report approaches is more marked in the case of an individual with a dismissing stance towards attachment. In this case the narrative on the AAI makes claims to implicit security in attachment relationships, which is belied by a lack of specific autobiographical memories or memories which contradict the semantic description offered. The Ds classification is therefore generated from the linguistic structure rather than the content. However, on a self-report measure one could argue that the same individual would be likely to endorse items indicative of a secure attachment style, thus presenting a response pattern of "false security". Furthermore, self-report measures do not provide a clear analogue to the AAI "Unresolved" category (although Bartholomew and Horowitz's (1991) four factor model contains a "Fearful" attachment sub-category, denoting a negative model of both the self and others, this taps into fears regarding rejection and inability to manage relationships, rather than a disorganisation of attachment models). This limitation is compounded by the conflation of self-report 'preoccupied' items

reflecting fear and aversion with the clinical presentation of "Unresolved" status (Allen, Stein, Fonagy, Fultz and Target 2005).

Taking into account the above disparities it is perhaps unsurprising that direct comparisons of the self-report and interview based measures of attachment (either of attachment to care-givers only; romantic partners only, or both parents and romantic partners) have failed to report significant correlations (correlations between r= .15 and r= .39; Crowell, et al., 1999) between the two methodologies. That said, despite the separate development of research into attachment representations and attachment styles, researchers have recently begun to explore the scope for a rapprochement between the two approaches (Shaver & Mikulincer, 2002; Allen, et al., 2005), given the clear conceptual overlap between the traditions .

Adult Attachment and it's relation to trauma, loss and psychopathology

Following on from theoretical developments within the attachment literature, the last two decades have seen a burgeoning interest in the study of adult attachment status as it relates to mental distress (e.g., Dozier, Stovall & Albus 1999). This echoes Holmes's (2001) conceptualisation of the attachment system as a form of "psychological immune system", using affect as a mediator in activating the attachment system in response to signs of threat to the integrity of the individual. In this formulation, secure attachment confers optimal immunity from threats to the psychological health of the self, via the capacity to self-regulate affect and to draw on significant others for support. When the circumstances in which the individual's immunity has developed are suboptimal "*a compromise will be reached in which the individual sacrifices some aspects of psychic life in return for a modicum of security*" (Holmes, 2001; p.3). Suboptimal immunity, which is synonymous with insecure attachment organisations, therefore leaves the individual at heightened risk of developing mental health difficulties when faced with significant or salient stressors.

I aim to discuss this body of work in three sections. Firstly, I will consider studies investigating relationships between attachment status and psychopathology, focussing

particularly on the prevalence of insecure attachment. Secondly, I will consider prototypical experiences which threaten the 'immunity' conferred by the attachment system - i.e. loss, and trauma and their relationship to insecure, unresolved and cannot-classify attachment narratives. Thirdly, I wish to highlight research into attachment in the realm of personality pathologies, particularly Borderline Personality Disorder (BPD) (see Dozier, et al., 1999; Fonagy et al., 2002; Agrawal, Gunderson, Holmes and Lyons-Ruth, 2004; Schore, 2005b, Steele & Steele, 2008). This body of work provides a useful template for the application of attachment theory to psychosis.

Attachment and Psychopathology

Attachment status has been linked to specific psychopathologies (Dozier, et al., 1999) (See Table 4.2); a line of enquiry proceeding from the aforementioned position that infants who repeatedly experience attachment relationships as unpredictable or negative will develop insecure attachment strategies to cope with the sub-optimal attachment bond. This reliance upon insecure attachment strategies renders them at heightened risk of developing psychological difficulties in adolescence and adulthood. These insecure attachment strategies are often heuristically subdivided into "minimising" (akin to avoidant/dismissing attachment representations) and "maximising" strategies (similar to anxious-ambivalent/preoccupied attachment representations). Minimising strategies have been hypothesised to associate with externalising psychopathologies, e.g. substance abuse or conduct disorder. The rationale for this is that the turning away (*re-jacio*; Main, Goldwyn & Hesse, in press; p. 21) from attachment related experiences, and the effect of such experiences on the nascent development of a sense of self, The consequence of this strategy is thus a turning away from one's own feelings and distress, preventing the individual from acknowledging such feelings, and limiting the scope for development of a robust and flexible regulatory strategy for coping with interpersonal stressors.

In contrast, due to the pervasive unpredictability of the caregivers availability in the attachment dyad, maximising strategies render the attachment system chronically

active, in an attempt to guarantee the care-givers attention. This has the effect of leaving the infant unable to develop autonomous regulation of their own self states, as a contingency between distress and soothing does not become predictable. Concurrently, the infant remains intensely aware of their own distress without being able to access a regulatory strategy. Maximising strategies are hypothesised to associate with internalising psychopathologies such as anxiety and depression, where distress is turned in on the self, and experienced as ruminative and self-destructive (Cole-Detke & Kobak, 1996; Dozier, et al., 1999).

However, it is crucial to avoid psychodevelopmental *fatalism* – insecure attachment experiences in infancy and childhood do not inevitably lead to insecure adult attachment representations, and nor do secure attachment experiences guarantee secure attachment in adulthood. As Sroufe (1997) emphasises, environmental, social and interpersonal factors across development can substantially alter attachment representations and affect regulation – both continuity and discontinuity of attachment can occur within a developmental framework. The following survey of the literature pertaining to attachment and psychopathology intends to focus on the Adult Attachment Interview rather than self-reported attachment style, in order to more accurately appraise the role of developmentally grounded attachment *representations* in psychopathology. That said, a plethora of studies have also utilised self-reported attachment style in relation to specific psychopathologies including social anxiety (Eng, Heimberg, Hart, Schneier, & Leibowitz, 2001), personality pathologies in adolescents (Nakash-Eisikovits, Dutra & Westen 2002), adult personality disorders (Fossatti, Feeney, Donati, Donini, Novella, Bagnato, et al., 2003), and obsessive-compulsive disorder (Myhr, Sookman, & Pinard, 2004). Self-report studies have in general supported the aforementioned links between increased scores on avoidance-related attachment dimensions and externalising difficulties; and between heightened scores on anxiety related dimensions and internalising difficulties.

Table 4.2: Studies of Attachment States of Mind and psychopathology (for studies compromised of participants with psychosis see Table 5.1)

Study	Participants	Sample composition	Attachment Measure	Results
Dozier 1990[a]	Individuals with "serious psychopathological disorders"	N=42 (DSM-III-R diagnoses: 12 =schizophrenia, 25 = bipolar disorder, 3 = major depression, 2=atypical psychosis	AAI (Q-sort method; Kobak, 1989)	Higher levels of attachment security in affective rather than thought disorders Higher levels of security associated with higher treatment compliance Higher levels of attachment avoidance associated with less self-disclosure, rejection of treatment and poorer engagement
Rosenstein and Horowitz (1996)	Psychiatrically hospitalised adolescents	N=52 (DSM-III-R Conduct disorder = 7, Affective disorder = 32, Comorbid conduct disorder and affective disorder = 12)	AAI	Conduct disorder associated with Dismissing classification, Affective disorder associated with preoccupied attachment, comorbid conduct/affective disorder associated with dismissing classification; Unresolved classification associated with affective disorder
Cole-Detke & Kobak 1996	Female college students assessed as at heightened risk of depression or eating	15 participants met criteria for eating disorder, 15 met criteria for depression; 19 participants met both	AAI Q-sort	Hyperactivating strategies associated with elevated levels of self-reported depressive symptoms,

	disorders	criteria		deactivating strategies associated with elevated self-report eating-disorder symptoms, (controlling for depression)
Allen, Hauser & Bormann-Spurell (1996)	11 year follow-up of adolescents psychiatrically hospitalised at age 14.	Heterogonous diagnostic composition: 29% grouped into 'internalising disorders'; 41% grouped as "externalising disorders".	AAI (including Unresolved status)	Predominance of insecure attachment classifications at follow-up; Insecure attachment linked to self-reported criminal behaviour and substance abuse.
Adam, West & Sheldon-Keller	Case comparison of adolescents with parasuicidality and non-clinical controls	69 adolescents with a history of suicidal behaviour or severe suicidal ideation. Control group of 64 adolescents with no history of suicidality	AAI (including Unresolved status and Cannot Classify)	Participants classified U d were significantly more prevalent in the case group Five category classification (classification without "U"): Secure, n=9 (16); insecure-preoccupied, n=5(29); insecure dismissing, n=11 (16); Unresolved, n=41. Cannot Classify: n= 8 (1).
Tyrrell et al 1999	Individuals with a DSM-IV diagnosis of "serious psychiatric disorder"	N=54; (schizophrenia, n=31; schizoaffective disorder, n=9; bipolar disorder, n=8; major depression, n=6).	AAI Q-sort	No results reported in relation to psychiatric disorder
West & George (2001)	Community sample of women with depressive symptomatology	N=24 diagnosed with DSM-III-R dysthymia	Adult Attachment Projective (George, West & Pettem, 1997)	Unresolved: n=4, Freely Autonomous n=2; Dismissing, n=4; Preoccupied n=14. (All women classified as "U"

				received 2nd classification of Preoccupied)
Frodi et al (2001)	14 male prisoners in forensic psychiatry units or medium secure hospital	5 individuals has no DSM-IV diagnosis, 9 individual's with DSM-IV anti-social personality disorder (2 individual's with comorbid axis 2 disorders)	AAI	Four way categorisation (three-way forced categorisation) Unresolved, n=5; secure n=0 (1); dismissing, n=9 (9); preoccupied, n=0 (4).
Waller, Scheidt & Hartmann (2004)	Individuals with a diagnosis of somatoform disorder, compared with healthy controls	N=37 patients meeting criteria for ICD-10 somatoform disorder	AAI Q sort	Insecure dismissing n=17; Insecure preoccupied, n=9; Secure, n = 9. Somatoform patients more likely to have insecure classifications than controls. Secure and Insecure dismissing attachment positively correlated with hospital admissions. Insecure preoccupied attachment correlated positively with number of GP visits
Riggs et al 2007	Individuals recruited from a specialized hospital treatment programme for trauma-related disorders.	80 individuals, predominantly female. DSM-IV-TR diagnosis of major Depression, n = 70; bipolar disorder, n= 14; anxiety,	AAI (including Unresolved and Cannot Classify status)	Four way categorisation (three-way forced categorisation) Unresolved, n=60; secure n=6 (17); dismissing, n=4 (12); preoccupied, n=4 (24),

		N=39; somatoform disorder, n= 7; PTSD, n= 11, substance abuse, n=13; DID, n=44; Personality Disorder, n= 52 (including n=17 borderline).		CC n=1 (22).
Stovall-McClough & Cloitre (2007)	Women with histories of physical and sexual abuse. Comparison of individuals meeting DSM-*IV* criteria for PTSD and those who did not (trauma controls).	30 individuals with a diagnosis of DSM-IV PTSD with reference to events of childhood physical and/or sexual abuse. Control group n=30. Of total sample, 41 individuals met criteria for at least one DSM-IV Axis 1 disorder.	AAI (including Unresolved status)	Four category classification: Secure, n=13; insecure-preoccupied, n=5; insecure dismissing, n=8; Unresolved, n=34. Unresolved with regard top abuse status associated with higher rates of Axis 1 disorders, 7.5x higher likelihood of PTSD diagnosis (compared with non-U status).
Nye et al (2008)	Male Vietnam combat Veterans, with a DSM-IV_TR diagnosis of PTSD	N=48	AAI (including Unresolved status)	Four category classification (three category classification): Secure, n=8 (24); insecure-preoccupied, n=7(11); insecure dismissing, n=8(13); Unresolved, n=24 U-loss classification associated with greater likelihood of comorbid anxiety disorders and PTSD avoidance/numbing Symptoms

(Studies investigating Borderline Personality Disorder)				
Patrick, et al 1994	Female outpatients, identified from psychotherapy waiting list.	DSM-III-R Borderline Personality Disorder, n=12; DSM-III-R dysthymia, n=12.	AAI	Dysthymia group: Secure, n=2; Preoccupied, n=4; dismissing, n=6. Borderline group: Secure, n=0; Preoccupied, n=12; dismissing, n=0.
Fonagy et al 1996	Consecutively admitted adult non-psychotic inpatients at specialist hospital for complex mental health difficulties. Compared with community controls.	N=82 meeting DSM-III-R criteria for affective disorder (depression n=72; Anxiety: n=44; substance abuse: n=37; eating disorder, n=14, and/or DSM-III-R criteria for Axis II diagnosis (BPD: n=36; Antisocial/paranoid PD: n=22; Other personality disorders: n=38). Controls: n=85.	AAI (including Unresolved status)	Psychiatric sample attachment classifications significantly different from controls Four category classification (three category classification): Depression: Secure, n=9 (18); insecure-preoccupied, n=6(41); insecure dismissing, n=5(13); Unresolved, n=52. Anxiety: Secure, n=2(7); insecure-preoccupied, n=1 (29); insecure dismissing, n=3(8); Unresolved, n=38 Substance abuse: Secure, n=4 (6); insecure-preoccupied, n=3 (23); insecure dismissing, n=2(8) ; Unresolved, n=28 Eating disorder: Secure, n=0

				(1); insecure preoccupied, n=0 (9); insecure dismissing, n=1 (4); Unresolved, n=13. BPD (DSM criteria): Secure, n=2(3); insecure-preoccupied, n=1(27); insecure dismissing, n=1(6); Unresolved, n=32 Paranoid/Antisocial PD: Secure, n=3(8); insecure-preoccupied, n=1(9); insecure dismissing, n=1(5); Unresolved, n=17 Other PD: Secure, n=3(9); insecure-preoccupied, n=2(21); insecure dismissing, n=3(8); Unresolved, n=30
Barone et al 2003	Patients on psychotherapy waiting list with DSM-IV Cluster B personality disorders; community controls	BPD n=40 (diagnoses of comorbid PD; n=31); Community controls, n=40	AAI (including Unresolved status)	Significant differences in distribution of attachment classifications between patients and controls for 2, 3 and 4 category coding frames. Secure, n=3; insecure-preoccupied, n=8; insecure dismissing, n=9; Unresolved, n=20

Studies of attachment states of mind as related to specific psychiatric diagnoses have without exception reported each sample to contain a predominance of individuals with insecure attachment classifications. In Rosenstein & Horowitz's (1996) cross-sectional cohort study of psychiatrically hospitalised adolescents a dismissing stance to attachment was associated with externalising difficulties such as conduct disorder, elevated substance abuse, and narcissistic or antisocial personality organisation. This is consistent with the operation of a Dismissing attachment state of mind partially supporting an affect regulation style where emotion is minimalised or externalised. Deactivating attachment strategies have also been reported to associate with heightened levels of eating disorder related behaviours (Cole-Detke & Kobak, 1996) and anti-social personality disorder (Frodi, Dernevik, Sepa, Philipson, & Bragesjö, 2001).

In contrast, a preoccupied stance towards attachment has been linked to affective disorders and obsessive-compulsive, histrionic, borderline or schizotypal personality organisations (Rosenstein & Horowitz, 1996). The same study also reported results for an "Affective group", comprising individuals without conduct disorder, but with other comorbid diagnoses, who displayed a predominance of the preoccupied AAI classification (69% of sample compared with 25% of the comorbid affective and conduct disorder group, and 14% of the conduct disorder group). An association between elevated depressive symptoms and hyperactivating attachment strategies (similar to maximising or preoccupied representations) has also been reported (Cole-Detke & Kobak 1996). These results would suggest that in these circumstances the attachment organisation is associated with an affect regulation style where chaotic dysregulation is the hallmark. However, the association between preoccupied attachment and depressive symptomatology appears particularly sensitive to variability in sample selection criteria (Dozier, et al., 1999). In Patrick, Hobson, Castle, Howard & Maugham's (1994) comparison of women with a diagnosis of Borderline Personality Disorder (see below) and women with dysthymia, the predominant AAI classification was Dismissing (50% of the dysthymia group, although the total sample size was small: n=12). Furthermore, in clinical samples of individuals with complex mental health difficulties, and/or a history of trauma (e.g. Fonagy et al., ,

1996; Riggs, Tunnell, Sahl, Atkison, & Ross, 2007) significantly higher proportions of insecure attachment classifications are reported compared to non-clinical samples. Therefore, there appears to be robust evidence for a higher proportion of insecure attachment classifications in clinical samples, however association between attachment and specific psychopathologies may be at the level of insecure attachment in general, rather than preoccupied or dismissing attachment status *per se*.

A second important finding is the high incidence of the AAI classifications of "Unresolved with regard to Loss and Abuse" and "Cannot Classify" in clinical samples. Allen and colleagues (1996) followed up 66 American upper-middle class adolescents, psychiatrically hospitalised at age 14 for psychiatric difficulties (not of organic disorder or thought disorder), and reinterviewed these individuals at age 25. At follow-up, the individuals gave attachment narratives that were predominantly classed as insecure, with substantial minorities of the sample also meeting criteria for Unresolved status (n=19, 28.8%), or Cannot Classify (n=17, 25.8%). Individuals with Cannot Classify transcripts displayed higher levels of criminal behaviour, and psychological distress, and lower levels of self-worth than individuals with any other attachment classification. In Fonagy and colleagues sample (1996) there was a markedly higher proportion of Unresolved classification compared to controls (62 versus 6). Unresolved status has also been observed to be more prevalent in parasuicidal adolescents (Adam, West, & Sheldon-Keller, 1996) and PTSD samples (e.g. Stovall-McClough & Cloitre, 2006; Nye, Katzman, Bell, Kilpatrick, Brainard, & Haaland, 2008). Therefore, it appears that in clinical samples not only is there an elevated incidence of insecure attachment organisations, but also significantly higher rates of Unresolved status, compared to non-clinical samples. As is to be expected, rates of Unresolved status are higher in samples pertaining to conditions where the experience of trauma or abuse is also prevalent (e.g. PTSD, personality disorders).

A further issue that remains unclear in the case of clinical samples is the position of preoccupied attachment. In Riggs and colleagues' (2007) study of 80 individuals admitted to a specialised treatment programme for trauma-related disorders, secure

attachment classifications were under represented; and consistent with the link between trauma and attachment disorganisation, unresolved attachment status was notably high (80% of total sample). However, the authors also noted that the proportion of participants with preoccupied attachment representations (where attachment representations are hyper-activated) was lower than would be expected for a clinical sample (30% versus 46%; based on the meta-analysis of van IJzendoorn & Bakermans-Kranenburg, 1996). Notably, the authors attribute this to the effect of including the Cannot Classify categorisation (n=22 when Unresolved classifications were forced into a primary classification). This is consistent with Main, Goldwyn and Hesse's (2002) observation that two of the three preoccupied subcategories (E1: Passive and E3: Fearfully preoccupied by traumatic events) are rare in "low-risk" samples, perhaps indicating an overlap with the narrative characteristics of Unresolved and Cannot Classify representations. Therefore, although preoccupied attachment representations are more likely to occur in high-risk or clinical samples, there is an inherent tautology that such samples are *also* more likely to present with unresolved or contradictory attachment representations. One possibility may be that there is a reciprocal relationship between the complexity of psychological difficulties and complexity of attachment representation *ergo*, the more complex the clinical presentation in terms of presence of trauma, and emotional difficulties, the more likely that the attachment representation will also be characterised by disorganisation and contradictory attachment patterns.

Given the lack of consistent patterns between attachment representations and discrete psychopathological disorders, it may be of more value to investigate the psychological mechanisms by which, in different clinical presentations, attachment classification relates to affect (dys)regulation strategies. This would also reflect the cross-diagnostic observation that most mental health difficulties involve an interaction of proximal factors such as life stressors, with more distal psychodevelopmental experiences – to which attachment representations are intrinsically linked. For instance is reflection upon interpersonal and emotional interactions (and by extension conduct in those interactions) that is characterised by an avoidance or absence of attachment related discourse reflecting the operation of

an organised strategy to down-regulate potentially affect laden interpersonal material? Or in contrast, does the individual's discussion and conduct in interpersonal interactions lead to a chaotic dysregulation of affect processing, which can be described as preoccupied, ambivalent, or disorganised? The crucial distinction is whether affect is restrictively *over*-regulated, or pervasively *dys*-regulated. Supporting the first position, two longitudinal samples (Berkeley Longitudinal Study - Main, et al., 2005; Minnesota High-Risk sample – Weinfield, Whaley & Egeland, 2004) report that infants classified as Disorganised in infancy tended to be classified as either Unresolved/Cannot Classify or Dismissing when interviewed in adulthood using the AAI. However, there is a substantial body of literature relating to the psychodevelopmental effects of attachment trauma which suggests the latter position on affective dysregulation is also of importance. The next section will consider the issue of attachment trauma in greater detail. .

Attachment Trauma and its sequelae

As discussed earlier in this chapter, the defining feature of attachment Disorganization in infants is the experience of the activation of the attachment system, due to a potentially threatening situation, and the simultaneous experience of the attachment figure as a *source* of threat. Unresolved status as measured using the AAI is strongly associated with attachment disorganisation in offspring (van IJzendoorn et al., 1999), When viewed through the framework of social mentality theory (Gilbert, 1992, 1999) this situation results in the incompatible simultaneous activation of the – usually sequentially activated - attachment behavioural system and the fight-flight defensive system (Liotti 2004 a,b). This incompatibility is articulated by attachment theorists as "fright without solution" (Main & Hesse 1990; p.163; Cassidy & Mohr, 2001). If this pattern of incompatible contingencies continues over time, the potential detrimental effects of this disorganising experience produce sequelae on multiple levels.

At the neurobiological level the effects on the ontogenesis of neurochemical, hormonal and structural changes in the brain have been comprehensively

documented by Schore (1994, 2004a, b). In terms of capacity for coping with stress, infants displaying the D pattern in the SST (Ainsworth, et al., 1978) display the highest heart rate activation, most accentuated startle response and highest cortisol levels of all attachment patterns, indicative of potential dysfunction in the HPA axis (Hertsgard, Gunnar, Erickson, & Nachmias, 1995; Spangler & Grossman 1999). This has potential relevance to psychosis, as the HPA axis synthesises the neuroendocrine cortisol, which is in turn intrinsically linked to Dopamine neurotransmission. Indeed, Walker & Diforio (1997) have suggested that it is the inter-relationship between HPA and dopamine in response to environmental stressors that forms the neurobiological underpinnings of the "diathesis-stress" (otherwise known as "stress-vulnerability") model of schizophrenia and other psychoses (Neuchterlein & Dawson 1986). Furthermore, attachment disorganisation also effects upon the development and functioning of affect regulation (e.g. Conklin, Bradley & Westen, 2006; DeOliveira, Neufeld-Bailey, Moran, & Pederson, 2004), the coordination of social attention in interactions with caregivers (Schölmerich, Lamb, Leyendecker, & Fracasso, 1997), control of aggression (Lyons-Ruth 1996; Fonagy, 2003), and crucially the development of a flexible and integrative capacity to mentalise (Fonagy et al., 2002).

In parallel to the above position, a substantial literature has emerged highlighting abusive experiences of physical and emotional maltreatment, neglect, and childhood sexual abuse as psychological progenitors of subsequent disorganised attachment, and increased risk of future psychopathology (for reviews see Glazer, 2001; Schore 2004a). It has been demonstrated that individuals who experience childhood maltreatment or abuse differ from non-maltreated peers through differing patterns of emotional processing (Cicchetti & Valentino 2006, Maughan & Cicchetti 2002), impairments in awareness of self and others in social interactions, (Beegly & Cicchetti, 1994; Toth, Cicchetti, Macfie, & Emde, 1997; Shields & Cicchetti, 2001) and behavioural responses to stress reactivity (Pollack, Cicchetti, Hornung, & Reed, 2000). Furthermore these individuals are also at substantially elevated risk of a wide range of psychological difficulties and psychopathological responses in adulthood including difficulties in affect regulation and impulse control problems, disturbance

in self-perception and the perception of others, and relationship problems (Briere, 2002; Courtois, 2004; Herman, 1992; Roth, Newman, Pelcovitz, van der Kolk, & Mandel; 1997; Terr, 1991). Particularly strong relationships have been noted between childhood abuse/maltreatment and dissociative responses and disorders, consistent with the link between attachment disorganisation and later dissociative processes. Also, unsurprisingly, such individuals often develop later Post-Traumatic Stress Disorder (PTSD), often presenting to mental health services with a complex constellation of PTSD symptomatology including numbing, avoidance, decontextualised flashbacks, aggressive impulses, and dissociation (e.g. Terr 1991; Herman 1992, van der Kolk, 1996; Briere 2002, Cicchetti and Valentino 2006). Childhood sexual abuse in particular has been associated with the expression of later PTSD (Adam, Everett, & O'Neal, 1992; Deblinger, McLeer, Atkins, Ralphe, & Foa, 1989; Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997).

The literature on the developmental sequelae of attachment disorganisation, and the effects of childhood abuse have increasingly been combined both in terms of theoretical (e.g. Liotti, 1999; Hesse & Main, 2000; Fearon & Mansell, 2001; Lyons-Ruth 2003) and empirical work (e.g. Lyons-Ruth, 1996; Lyons-Ruth, Yellin, Mellnick & Atwood, 2003b; Bailey, Moran & Pederson, 2007b). This line of enquiry has focussed upon appraising disorganisation in adulthood via "Unresolved" status using the AAI.

Liotti (1995, 1999a, b, 2004a, 2004b) has argued that the experience of pervasive attachment disorganisation in infancy leads to an internal working model of attachment in adulthood which, when activated by stressful experiences, is similarly disorganised and fragmented – with multiple incompatible representations of the self and others. Under such prototypical attachment circumstances –such as loss, separation or interpersonal trauma – this developmental lack of psychological immunity predicates the individual to experience such stressors as overwhelming, and thus disorganising. This link from attachment disorganisation in infancy to disorganisation in adulthood is demonstrated in the finding that attachment disorganisation in infancy has been shown to be a risk factor for dissociative responses to stress from childhood onwards (e.g. Carlsson, 1998; Hesse & van

IJzendoorn 1999, Macfie, Cicchetti & Toth 2001). Furthermore, attachment disorganisation in adulthood has been shown to be trait like in terms of stability over time (e.g. Weinfield et al., 2004).

Although there is undoubtedly a link between the experience of childhood abuse and maltreatment and attachment disorganisation, there may be other, more subtle developmental pathways to attachment disorganisation. Read & Gumley (2008; p.15) have summarised this thus: *"we can understand attachment disorganization as the outcome of intersubjective experiences linked to deficits in the regulation of emotion within the infant-parent dyad, and not necessarily to overtly traumatic experiences"*. The crux of this proposition is that attachment disorganisation in adulthood (reflected through "U" classification in the AAI) predicates a vulnerability towards reactions to life stressors and associated distress that fragments, compartmentalises and fails to integrate the emotional, cognitive and behavioural consequences of that experience. Thus attachment disorganisation may be a mediator between childhood abuse/maltreatment and later psychopathology, but crucially may also be a product of a more insidious pattern of attachment relationships in infancy, predicating later disorganised or fragmented coping in response to stressors. This fragmentation or disorganisation of mental state is further expressed through mental distress, and heightened risk of diagnostically significant psychopathology. Following from this, I wish to move on to the clinical presentation of Borderline Personality Disorder as an illustrative example of the symbiosis of sub-optimal attachment, its sequelae and mental health difficulties.

The role of Attachment Representations in Borderline Personality Disorder – A model for the investigation of attachment in psychosis?

Borderline Personality Disorder has been one of the most fertile areas in which the application of attachment theory has given rise to novel insights into psychopathological problems and diagnoses. The symptomatology of BPD is chiefly characterised by profound affective dysregulation and instability, manifest in impulsive behaviour, instability in one's sense of self-coherence and understanding of others, particularly in close relationships (Fonagy, et al., 2002). One of the attendant

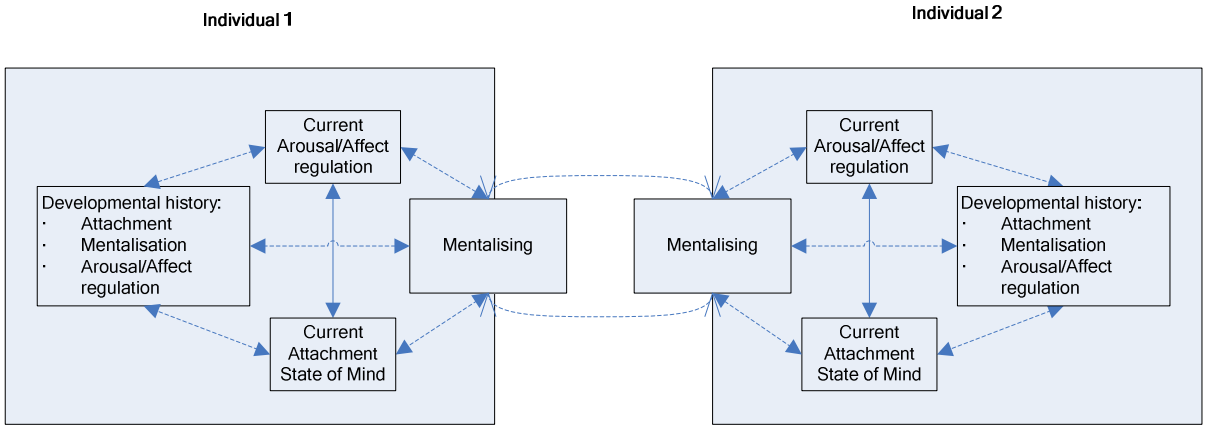
consequences of this potent nexus of emotional lability and impulsivity is a significantly increased risk of self harm, and suicidal acts (Skodol, Gunderson & Pfohl, Widiger, Livesley & Siever, 2002). Two aspects of research into the link between attachment and BPD are thus of relevance here: the utility of attachment, and particularly attachment disorganisation, as a theoretical construct for understanding BPD, and the implications for therapeutic intervention contained within an attachment informed approach. This section provides evidence for a link between attachment organisation (and disorganisation) and a complex mental health difficulty, characterised by difficulties surrounding affect regulation. Therefore it provides an analogous model for the application of attachment to psychosis.

BPD and Mentalisation as sequelae of attachment

In terms of an attachment informed perspective on BPD, the work of Fonagy and colleagues (Fonagy 1991; Fonagy, et al., 1996; Fonagy, et al., 2002; Bateman & Fonagy, 2003; Fonagy & Bateman 2006; Fonagy and Target 2006) has established an influential research and clinical framework combining attachment related disorganisation (relating to negative interpersonal experiences in early development), and deficits in the mentalisation of thoughts and feelings regarding the self and others (Fonagy & Bateman 2006). Before proceeding with this discussion it is necessary to establish what the term *mentalisation* represents. Mentalisation can be defined as "*the capacity to conceive of mental states as explanations of behaviour in oneself and in others*" (Fonagy & Target 2006; p.544). It reflects a psychological capacity to identify, process and interpret ones own, and others *intentional states*. Fonagy & Target (2006) define intentional states as a category descriptor representing a variety of factors in our psychological lives: needs, desires, feelings, beliefs, goals, purposes, and reasons. Following from this, mentalisation forms an intersubjective process in which the individual tries to accurately process their relationship with the social world in general, and interpersonal relationships in particular, through inferring the intentional states of others, while accepting the logical impossibility of knowing with certainty the intentions of the other (see Figure 4.1 for schematic representation of mentalisation). This psychological understanding

of the mental states of others can also be referred to as "mind-mindness" (Meins, Fernyhough, Russell, & Clark-Carter, 1998).

Figure 4.1: Schematic representation of mentalisation



The development of mentalisation therefore has profound implications for one's beliefs, affective state and subsequent behaviour, and ultimately one's maintenance of a coherent sense of self and the experience of the continuity of mental life. Fonagy and colleagues have also highlighted the inter-relation between mentalisation, affect regulation and attentional control, further grounded at the neurobiological level by a complex interplay between frontal, temporal, and cingulate cortical areas and mesocortical limbic systems (also crucial in attachment behaviour; see MacLean, 1990; Insel, 1997; Panksepp, 1998), and at the chemical/hormonal level by dopaminergic transmission, oxytocin and vasopressin. It is pertinent to later discussion of psychosis that Fonagy and colleagues (2002) argue that cognitive psychological concepts such as "Theory of Mind" (ToM; Frith, 1992) and metacognition (e.g. Wells, 1996) can be subsumed within the concept of mentalisation. Both at the psychological and neurobiological levels, in the act of mentalising there is a synergy between awareness of one's own mental state, and the mental states of others, this therefore allows for "on-line" modification of one's own behaviour in relation to other's (Frith & Frith 2003; Fonagy, 2006).

How are attachment theory and mentalisation linked? Attachment patterns form the context in which mentalisation and mind-mindness emerge, operationalised as "Reflective Function" (RF; Fonagy, Target, Steele, & Steele, 1998). Thus, attachment is the developmental context from which mentalisation emerges. As will be expanded upon in the following section, in adults RF ratings can be derived from scoring the narrative articulated within the context of the AAI. As discussed earlier in this chapter, secure attachment facilitates the infant to build up a contingency between the experience of novelty/distress and the rapid relief of this distress via the protective and soothing intervention of the attachment figure, and the subsequent precocious development of mentalisation (Meins, et al., 1998).

Interestingly, attachment activation inhibits the neurobiological circuitry needed for mentalisation (Bartels and Zeki 2004). In the case of secure attachment, the rapid relief of distress in situations that are novel or potentially upsetting for the infant should lead to progressively less frequent and shorter activations of the attachment system,. Consequently, as the attachment system does not need to be as frequently activated by the infant, there are correspondingly increased opportunities for the infant to acquire mentalisation skills. Furthermore, attachment provides a "safety-net" for the infant to practice mentalisation, with the care-giver at hand to provide security if mentalisation falters. Conversely, in situations where a secure attachment cannot be guaranteed, the attachment system is activated more frequently, and for longer - echoed in the heightened galvanic skin response of infants with insecurely attachment behaviour (e.g. Spangler & Grossman 1993) - thus leaving the individual with less opportunities to acquire and practice mentalisation skills.

The development of mentalisation is also fundamentally interpersonal, facilitated by the attachment figure's capacity to flexibly react to the infant's needs. Indeed, the parent's ability to appropriately and effectively mentalise the infant's wishes, desires and affective states enables the infant to experience an unambiguous sense of security regarding the caregiver, coupled with an emergent capacity to learn about their own mental states via the empathic mirroring of mental states provided by the caregiver. This mirroring capacity rests in the infant's preference, from four months onwards, for high-but-imperfect stimulus contingencies (Bahrick & Watson, 1985;

Gergely & Watson, 1999). In the context of mentalisation, the infant's display of distress at a potentially threatening situation is acknowledged by the caregiver, but not perfectly mirrored– i.e. the caregiver communicates to the infant that the infant is expressing distress, but does not herself mirror that distress, instead modulating the distress through caregiving (Sroufe 1996). *Ergo*, the caregiver acts to contain the infant's potentially intolerable affective state (Bion 1962). Fonagy & Target (2006) suggest that the infant learns about their own affective state via the caregiver, but also comes to learn their own role in creating that state, thus facilitating the discovery of a sense of agency – crucial for differentiating the mental states of self and others, and their respective effects on one's affective state. Fonagy & Target (2006) also argue that if the caregiver's response is incongruent with the infant's mental state, that if repeated over time there is a risk of a "false-self" state (Winnicott 1965) being established –where the infant's representation of their mental state is not reflective of the underlying affective state. This echoes the disjunction of semantic and autobiographical memory evident in Dismissing AAI narratives. Secondly, Fonagy and Target (2006) suggest that if the caregiver is unable to effectively mirror the infant's affective state while simultaneously communicating to the infant that the affect displayed is *not* the caregiver's own, there is a risk over time of predisposing the infant to experiencing mental states and affect through others, externalising the affective state and rendering the infant unable to develop regulatory strategies. It is this second breakdown in the development of mentalisation that Fonagy & Target (2006) suggest is implicated in borderline states.

Mentalisation in adulthood and links to psychopathology

In adulthood it appears that mentalisation in the context of attachment behaviour forms a unique and independent aspect of social interaction – crucial to one's functioning in close relationships (Fonagy & Target 1997). The specificity of mentalisation to close relationships is highlighted in a study by Fonagy and colleagues (2003) which demonstrated that trauma mediated the association between mentalisation in the context of attachment, and quality of adult romantic relationships; whereas trauma did not mediate the relationship between performance on a measure of ToM "the Reading the Mind in the Eyes test" and quality of adult romantic relationships (Fonagy, Stein, Allen & Fultz, 2003). This is also of note given

the earlier discussion of the effects of trauma, separation and loss upon attachment. Furthermore in adults, there is a complementary interplay between attachment and mentalisation. Secure attachment relationships and robust mentalising facilitate the processing of affect where positive and negative affective states activate mentalisation processes, but are contained within safe limits by the reflexive activation of the attachment system.

Crucial to the current enquiry is the synergy between attachment, mentalisation and later psychopathology. In contrast to the robust mentalising of secure attachment, a compromised attachment state of mind will impact on the ontogenesis of mentalisation, but symbiotically, psychological impediments to the effective operation of mentalisation will also impact on the robustness of one's attachment state of mind. Such impediments may include trauma, separation, loss, and any event or process experienced as dangerous, entrapping, or shaming (Brown, Harris & Hepworth, 1994; Kendler, Hettema, Buttera, Gardner, & Prescoot, 2003). How could specific attachment states of mind, as represented in the AAI, impact upon mentalisation in adulthood?

Fonagy (2006) has speculated that adults who display a dismissing pattern of attachment have developed a stance towards interpersonal relationships where both attachment and mentalisation processes are readily deactivated in the face of affectively laden situations; this is consistent with the characteristic narrative in Dismissing AAI where affective autobiographical memory is sparse, and the narrative remains semantically driven. This lack of affectivity also inhibits the presence of mentalisation within the narrative. Conversely, in preoccupied attachment both mentalisation and attachment processes are evident, but often simultaneously, leading to an overload of (negative) affectively laden narrative. Mentalising, although evident, is directed towards an absorption into attachment related experiences, to the detriment of orientation towards the here and now of narrative (Main, 2000). In each case the capacity to cope with life's viscitudes and regulate one's own affective states is sub-optimal. This implies that specific insecure attachment representations may also give rise to, and interact with specific mentalisation patterns, These in turn will

be factors in the individual's approach to interpersonal relationships, stressors, trauma, and loss. Coupled with this is an implication that the above nexus of factors are related to different forms of psychopathology.

Mentalisation in the context of attachment and Borderline Personality Disorder

How does the above theorizing apply to BPD? The critical role of affect dysregulation, and the pervasive nature of the difficulties experienced by individuals with a diagnosis of BPD have led many researchers to suggest that the epigenesis of the disorder is intertwined with a fundamental disorganisation of the individuals attachment representations, leading to the experience of close relationships as emotionally charged but chaotic and "un-readable" on an interpersonal level (e.g. Main and Hesse, 1990; Blatt and Levy, 2003, Fonagy, 1991; Fonagy et al., 1996; 2002; Gunderson, 1996; Levy & Blatt, 1999). Furthermore, the phenomenology of BPD – fears of abandonment, volatile affect regulation, interpersonal anger and dysphoria – is identical to the phenomenology expressed in attachment related needs and their sequelae. In particular, this conceptual overlap would suggest these characteristics of BPD are similar to the sequelae of sub-optimal attachment experiences, especially the experience of trauma and neglect. This is backed by empirical evidence of significant elevated incidences of being the victim or witness of childhood physical or sexual abuse, and/or neglect (e.g. Herman, Perry & van der Kolk, 1989; Ogata et al., 1990). This finding is parallel to the previously discussed emergent literature on the incidence of trauma in individuals with psychosis.

Empirical studies of adult attachment representations in individuals with BPD have repeatedly found a relatively high proportion of preoccupied attachment classifications and Unresolved classifications compared to non-psychiatric controls (Patrick, et al., 1994; Fonagy, et al., 1996; Barone, 2003; Levy, et al., 2006). In the one study where the "Cannot Classify" categorisation is used, approximately 20% of the sample fitted to this category (Levy, et al., 2006). Furthermore, Secure/Autonomous attachment classifications accounted for less than 10% of the total sample in all the above studies. It is of note that in these samples preoccupied sub-classification "E3" –

where the narrative is characterised as overwhelmed by Fearful-Preoccupation with attachment experiences which de-rail the coherence of the interview – was noted at elevated levels compared to non-clinical samples (where it is extremely rare; Main, et al., 2002).

With regard to mentalisation, reflective function scores are noticeably lowered in BPD samples, compared to non-psychiatric controls (Fonagy, et al., 1996; Levy, et al., 2006). Fonagy, et al., (1996) also report a significant interaction between reports of abusive attachment experiences and lowered reflective function scores ($X^2 = 8.67$, $p < .004$). However, Levy, et al., (2006) found no correlation between reflective function scores and Unresolved status, either before or after psychotherapy. In the case of BPD, mentalisation in the context of close interpersonal relationships presents a profound challenge, which in some cases at least, may have its root in the early experience of disorganising, neglecting or abusive behaviour by attachment figures. This is further reinforced by an insecure attachment organisation which is maladaptive in the face of stressful and affect laden situations. Individuals thus become subject to "a potentially extremely vicious cycle of heightened attachment, increasingly decoupled mentalisation, and increased vulnerability to further interpersonal trauma" (Fonagy & Bateman, 2006; p.423). The therapeutic value of a conceptualisation of BPD in these terms lies in the opportunities for psychological intervention to provide a forum in which the individual can address affectively laden interpersonal memories and processes, activating the attachment system, with the clinician intervening when necessary to contain negative affect from becoming uncontrolled Simultaneously, the therapeutic context allows the individual to access and foster more reflexive, robust mentalisation skills. In this context, the clinician functions as Bowlby's "secure base" (1988a).

Conclusion

To summarise, there is a strong theoretical basis, and a substantial amount of empirical data indicating the veracity of links between attachment, mentalisation and the experience of mental health difficulties. Attachment provides a life-span

model of the development of psychological functioning and affective regulation, emerging from the context of affectional bonds created in close relationships, initially with care-givers, Furthermore, attachment theory is grounded in the evolutionary need for safety and security – hence the caregiver as the "secure base" (Bowlby, 1988a). Following from this, attachment behaviour in infancy is operationalised in the SST patterns of secure, avoidant, ambivalent and disorganised behaviour (Ainsworth, et al., 1978). Avoidant and ambivalent behaviour represent strategies to regulate a suboptimal attachment bond, via minimising or hyperactivating attachment behaviour, whereas disorganised attachment stems from a breakdown of organised attachment behaviour. In adulthood these behavioural patterns are reflected in narrative discourse on the AAI (Main, et al., 2002) – with the attachment states of mind of secure/freely autonomous, dismissing, preoccupied and unresolved corresponding to the respective SST patterns.

Thus the greatest threats to the integrity of the attachment system are those events and processes which threaten the security of the attachment bond – such as the experience of extended separation, loss, trauma and neglect. The nature of the attachment system being that although no-one is immune from the effects of such events, secure attachment offers the most reflexive strategy for coping with such threats, and the attendant negative affect generated by said threats. The capacity to mentalise, operationalised as reflective function, emerges from the context of attachment. It concerns the ability of the individual to understand and infer the mental states of both themselves, and others, and the impact of mental states on one's cognitions, affective state behaviour.

There is substantial evidence for a predominance of insecure and unresolved attachment states of mind in a plethora of psychopathologies, with greater variation in terms of the mapping of specific attachment classification to specific conditions. Indeed, there does not seem to be a consistent relationship between attachment classifications and discrete diagnostic categories, especially when Unresolved and CC classifications are included in samples. This suggests that the value of attachment to

our understanding of psychopathology may lie at the symptom level, rather than in a one-to-one mapping of a specific attachment classification to a specific disorder. This is reminiscent of the symptom based approach to psychosis discussed in Chapter 1 (e.g. Bentall 2003). Furthermore, there is evidence of the experience of loss and trauma in a variety of psychopathologies, highlighted in the above consideration of attachment and BPD. Indeed, the value of attachment at a symptom or phenomenological level can be seen from the example of BPD, whereby the attachment informed approach to BPD has emphasised the function of affective dysregulation in the disorder. Furthermore, evidence suggests that mentalisation is also impaired in BPD – creating a potent nexus of attachment insecurity, mentalisation difficulties, and affective dysregulation, frequently against a backdrop of trauma and neglect.

Returning to psychosis, although this disorder has traditionally been viewed as non-affective in character (Kraepelin 1919), I have argued in Chapter 1 that affective dysregulation, albeit manifested in a significantly more nuanced fashion than in the case of BPD, is an important aspect of the aetiology (Birchwood, 2003) clinical presentation (Ciompi, 1984, 1988, 1991), course (Gumley, et al., 1999; Gumley and Liotti, 2008) and psychotherapeutic treatment of psychosis (e.g. Garfield 1995; Gumley & Schwannauer, 2006). With this in mind, attachment theory could provide a useful framework for accessing affective dysregulation in psychosis – via the impact on attachment narratives and reflective function. Therefore, before commencing on an empirical investigation, the following chapter examines the theoretical validity of attachment theory as an explanatory construct for understanding psychosis, focussing in particular on the first episode.

Chapter 5

Are Schizophrenia and Other Psychoses disorders of Affect Regulation?

Although there has been increased interest in articulating a theoretical rationale for linking attachment with psychosis and schizophrenia (e.g. Bentall et al., 2007; Berry, Barrowclough & Wearden, 2007a; Liotti & Gumley, 2008; Read & Gumley, 2008), there has been little direct empirical research in the area. However, as can be observed from the literature summarised in the previous chapter, attachment theory represents a cogent framework for understanding a broad range of psychopathological states, conditions, and diagnoses. With specific reference to schizophrenia and other psychoses, this thesis focuses upon the psychological processes influencing pathways into treatment and adjustment to the experience of psychosis, with particular emphasis on the modulating and (dys)regulating role of affect.

As attachment theory is a psychodevelopmental theory concerned with the regulation of affect at times of distress, operationalised in help-seeking behaviours and narratives, it seems plausible that attachment can be of value to understanding psychosis. This is also consistent with literature arguing that onset and adaptation to psychosis has a strong psychodevelopmental component (e.g. Harrop & Trower, 2003; Birchwood, 2003). With this aim in mind, the current chapter presents a theoretical integration of attachment theory and psychosis, informed by an understanding of the original tenets of Bowlby's theory (1969/1982, 1973, 1980). Firstly, the attachment system acts as an evolutionary mechanism functioning to optimise an individual's sense of security in the face of threatening or distressing situations, via interaction with significant others (including the ability to accurately appraise the impact of the mental states of others upon the self). Secondly, the effect of life events and experiences greatly influence an individual's working model of attachment, particularly interpersonally intrusive events such as trauma, separation and loss which threaten the integrity of the attachment system. Thirdly, attachment organisation impacts upon how one seeks help in such situations – thus constituting

a theory of help-seeking. Finally, following the previous point, and in line with Bowlby's (1973) less well-known "exploration" system attachment is also a theory of resilience – attachment organisation being a key determinant of how one adjusts to the impact of life's viscitudes. The aim of this chapter is therefore to present an integrative stance utilising attachment and mentalisation as a theoretical framework from which to re-evaluate pre-existing work on trauma, theory of mind, and developmental processes in psychosis. This formulation of attachment is grounded within the affect focussed conceptualisation of psychosis articulated in Chapter 1, and will be applied to the following areas:

- The distribution of attachment categories and representations in clinical samples (including studies using Parker, Tupling & Brown's (1979) Parental Bonding Instrument).
- Attachment (predominantly measured through self-reported attachment style) as related to psychotic symptomatology and schizotypy.
- Loss, Separation and Trauma, in psychosis.
- Attachment representations as an explanatory framework for understanding help-seeking, engagement and adjustment in schizophrenia and the psychoses.
- Mentalisation in psychosis, primarily investigated under the aegis of "Theory of Mind".

Studies using the Parental Bonding Instrument

Read and Gumley (2008) highlight the body of literature in which the Parental Bonding Instrument (PBI; Parker, et al., 1979) functions as a surrogate measure for attachment representations. The PBI is a retrospective self-report measure of the individual's perception of their relationship with their parent prior to the age of sixteen, producing scores on two scales: 'caring' and 'over-protection'. The 'caring' scale encapsulates a dimension from empathy, closeness, emotional warmth and affection at one pole to neglect, indifference, and emotional coldness at the other pole. 'Over-protection' encapsulates a dimension from high over-protection indicated by interpersonal intrusion, excessive contact, control infantilization, and prevention of independent behaviour to low "over-protection" indicating autonomy and acceptance of interpersonal independence (Parker, et al., 1979).

These two scales combine to represent four patterns of parental bonding: high care and low overprotection 'optimal bonding'), low care and low overprotection ('absent or weak bonding'), high care and high overprotection, ('affectionate constraint'), and low care and high overprotection ('affectionless control'). The three non-optimal patterns have been linked to difficulties in social functioning and social anxiety in children and adolescents (Willinger, Heiden, Meszaros, Formann, & Aschauer, 2002; Canetti, Galili-Weisstub, De-Nour, & Shalev, 1997). When applied to the study of psychosis and schizophrenia, high scores on the "affectionless control" construct have been consistently reported by individuals with a diagnosis of psychosis (Parker, Fairley, Greenwood, Jurd, & Silove, 1982; Hafner & Miller, 1991, Willinger, et al., 2002, Byrne, Velamoor, Cernovsky, Cortese, & Losztyn, 1990, Rankin, Bentall, Hill, & Kinderman, 2005, Favaretto, Torresani, & Zimmerman, 2001, Onstad, Skre, Torgersen, & Kringlen, 1994; Helgeland & Torgersen, 1997; Warner & Atkinson, 1988). In summarising these data, Read & Gumley (2008) suggest that the key facet of the "affectionless control" factor, at least in relation to psychosis, may be the low levels of parental care implicit within the construct. This is supported by data assessing parental care (but not using the PBI) from the Netherlands (Janssen, et al., 2005) and Scotland (McCreadie, Williamson, Athawes, Connolly, & Tilak-Singh, 1994) that reported low levels of parental care (Janssen, et al., 2005) and/or parental 'warmth' (McCreadie, et al., 1994) in samples of individuals with psychosis. The findings of Janssen, et al., (2005) are of particular interest, given they represent data from a population based study of 4045 persons.

However, there are several problems in interpreting data concerning the PBI. Firstly, the aforementioned findings pertaining to "affectionless control" are not specific to the psychoses – indeed it has been identified in studies of individual's with a diagnosis of borderline personality disorder (Helgeland & Torgerson, 1997; Zeig-Frank & Paris, 1997), agoraphobia (Silove, 1986), panic disorder (Wibrog & Dahl, 1997); substance abuse (Torresani, Faveretto, & Zimmerman, 2000) and depression (Parker, 1983). However, Faveretto & Torresani (1997) note that 'affectionless control' is not a characteristic of the developmental histories of individuals with avoidant personality disorder or bipolar disorder. Two studies have also reported conflicting

results for the PBI when comparing schizophrenia diagnoses to borderline personality disorders – one sample suggesting the presence of significantly higher paternal over-protection and lower maternal care in a Borderline sample, suggesting an "affectionless control" pattern within the parental dyad (Byrne, et al., 1990);; the other (examining maternal parenting only) failing to find a report a difference between the two groups (Helgeland and Torgerson, 1997). Therefore, in parallel to the presence of elevated levels of insecure attachment in the aetiology of most psychopathologies, the pattern of PBI results perhaps suggest that low levels of parental care are a factor in a multiplicity of psychiatric difficulties. Therefore the *interaction* of PBI findings with other psychodevelopmental factors in psychosis, e.g. incidence of social difficulties (e.g. experience of bullying (Hardy, Fowler, Freeman, Smith, Steel, & Evans, 2005; O'Moore, Seigne, McGuire, & Smith, 1998) upon the epigenesis of the disorder may be a more pertinent line of enquiry.

A second, more fundamental caveat to the above discussion concerns the PBI's measurement of *retrospective recollections* of parenting. In contrast, measures of attachment representations such as the AAI measure one's report of perceived representations of developmental interactions with attachment figures, and the influence on one's state of mind with regard to attachment. It would appear that the PBI assesses similar territory to the *experience* sub-scales of the AAI – an *estimate* of inferred parental behaviour during the interviewee's childhood, based on the speaker's report. As Main, et al., (2002) emphasise, *"it is. . .not presumed that these retrospective interviews provide a veridical picture of early experience"* (p.8). The difference between the PBI and the AAI lies in the *discussion* of the parenting experience. In the AAI the report of parenting serves as a backdrop for attachment related discourse, whereas in the PBI the report of parenting is a "snapshot" of an individual's recollection of parenting, without exploration of the context or implications of said recollection. It is the position of the current thesis that attachment state of mind is a *representation* of the individual's perception of attachment experiences, rather than an objective history of their parenting, Therefore, the implication is that it is the attachment representation which influences an individual's attitude towards help-seeking and affect regulation, rather than concentrating solely on attachment history and current representations.

Furthermore, the theoretical structure subsuming the PBI is unable to capture aspects of resilience that more fine-grained assessments of attachment measures, such as the capacity for reflection and resilience contained within definitions of secure/freely autonomous attachment classifications (see Table 4.1; Chapter 4, p. 91). This is not to negate the consistent finding using the PBI of low parental care in the developmental histories of individuals with psychosis. Rather, it may be more efficacious to view this finding as one potential risk factor for later psychosis, perhaps interacting with an insecure or disorganised attachment representation, as measured using the AAI.

Empirical studies of associations between attachment and psychosis

The next area of relevance to the current thesis concerns those studies that have investigated attachment in psychosis. These studies divide into two categories: firstly, those investigating attachment in clinical samples (predominantly utilising measures of attachment style); and secondly studies exploring the relationship of attachment to specific psychotic phenomena and symptomatology. Herein the first of Bowlby's (1988a) facets of attachment is also addressed – how the presence or absence of a sense of (attachment) security may link with the experience of psychosis. A summary of relevant empirical studies is given in Table 5.1.

Attachment classification and psychosis

Using Hazan & Shaver's (1987) three-category self-report measure, Ponizovsky and colleagues (2007), reported significantly higher mean scores for anxious/avoidant and anxious/ambivalent attachment styles in a sample of Israeli individuals with a schizophrenia diagnoses, compared to non-clinical controls. Fifty-Seven Percent of the men diagnosed 'schizophrenic' self-reported avoidant attachment styles, compared to 17 percent of the non-patient controls. Twenty Seven percent of the "schizophrenia" group self-reported as anxious/ambivalent compared to ten percent of controls. Patients reporting higher levels of anxious/avoidant and anxious/ambivalent styles, compared to those reporting a higher level of secure attachment style had a significantly younger age of onset of difficulties, and a longer duration of hospitalisation. However, the study recruited a small sample

(schizophrenia group, n=30), and the sample composition reflected a "chronic" presentation – with long average duration of hospitalisation (67.2 months; s.d. 86.9 months) with a substantial length of time elapsed from initial presentation to study entry (mean age of onset = 23.8 years; s.d. = 6.4 years); mean age at entry into study = 38.4 years; s.d. = 10.2 years).

Secondly, in a sample of ninety-six individuals experiencing FEP, Coutoure, Lecomte and Leclerc (2007), used the Attachment Style Questionnaire (Feeney, et al., 1994) to investigate attachment style in relation to social functioning (Client Assessment of Strengths, Interests and Goals, CASIG; Wallace, Lecomte, Wilde & Liberman, 2001) The sample was also compared against a control sample (Paquette, Bigras & Parent 2001). Compared to the control sample, FEP participants were less likely to be secure, and reported higher levels of preoccupation, discomfort with closeness, and a greater need for approval. In both the FEP and the control sample, there were significant gender differences with women classified as autonomous/secure more frequently than men, and men and women equally likely to be classified as ambivalent. However, in the reverse of findings for the control sample, males with FEP were more frequently classified as preoccupied and less frequently as avoidant than women. Greater attachment avoidance and greater attachment preoccupation were also correlated with lower scores on quality of life. These findings are in contrast to Ponizovsky et al's (2007) findings. It is therefore possible that these findings may represent a characteristic of attachment in a FEP sample, perhaps reflecting the emotional distress of FEP and its *current* effect on the individual's close relationships. For instance, it may be that in the first episode attachment concerns and distress are heightened – reflecting the impact of psychosis as a destabilising life event (Gumley & Schwannauer, 2006). In contrast, for those individuals who have experienced multiple episodes with corresponding detrimental effects upon their quality of life, a stance where attachment concerns are avoided or minimised may become more pronounced – perhaps as a strategy for regulating the destabilising impact of affect (see Chapter 1). This point will be elaborated upon later in this chapter.

Table 5.1: Empirical studies of Attachment and psychosis

Study	Participants	Sample composition	Attachment Measure	Results
Ponizovsky et al (2007)	Adult male patients with a diagnosis of schizophrenia	30 patients with DSM-IV schizophrenia (Paranoid subtype=13; Undifferentiated type = 7; Disorganized type = 5; Residual type = 5.) Compared with 30 non-clinical controls	Hazan & Shaver Attachment measure (1987)	Clinical group: Anxious Avoidant: n=17; Anxious Ambivalent: n=8; Secure: n = 5. No difference between groups in mean scores for secure attachment style; Schizophrenia group scored significantly higher on avoidant and anxious/ambivalent mean scores. Secure attachment style not correlated with PANSS scores. Avoidant style significantly correlated with PANSS positive and negative scores. Anxious/Ambivalent score correlated with PANSS positive scores only.
Coutoure et al (2007)	Individuals aged between 15 and 35, with a schizophrenia spectrum primary diagnosis, and a first episode of psychosis within previous 2 years	96 patients with a First Episode of Psychosis. Compared to two non-clinical control samples: n=66 (Beauchamp et al 2006); n= 353 (Paquette et al 2001)	Attachment Style Questionnaire (Feeney et al, 1994)	Clinical group (male, female): Autonomous: n=10 (3, 7); Preoccupied: n= 52 (40, 13); Ambivalent: n=8; (28 (17,11); Avoidant: n = 5 (3, 2). Men with FEP significantly less likely to have avoidant or autonomous attachment but more likely to be classified as having

				ambivalent or preoccupied attachment than non-clinical controls. Women with FEP less likely to have autonomous or preoccupied attachment, more likely to be classified as ambivalent or avoidant than non-clinical controls.
Dozier 1990	Clients with serious psychiatric diagnoses in a care management programme	N=42 (DSM-III-R diagnoses: Schizophrenia, n=12; bipolar disorder, n=25; major depression, n=3; atypical psychosis, n=2)	Adult Attachment Interview Q-sort	Higher levels of attachment security in affective rather than thought disorders Higher levels of security associated with higher treatment compliance Higher levels of attachment avoidance associated with less self-disclosure, rejection of treatment and poorer engagement
Dozier et al 1991	Clients with serious psychiatric diagnoses in a care management programme and their case managers	N=40, (DSM-III-R diagnoses: Schizophrenia, n=21; bipolar disorder, n=11; major depression, n=8). Case managers: n=18.	Adult Attachment Interview Q-sort	Higher levels of attachment hyperactivation associated with higher emotional overinvolvement displayed by relatives
Dozier & Lee 1995	Clients with serious psychiatric diagnoses in a care management programme	N=76 (DSM-III-R diagnoses: schizophrenia, n=47 (24=paranoid subtype, 23= undifferentiated); Bipolar disorder, n=27; Panic disorder, n=1; Conversion reaction, n=1).	Adult Attachment Interview Q-sort	Individuals with hyperactivating attachment strategies reported a greater number of symptoms than individuals with deactivating strategies. Individuals with deactivating strategies rated as more symptomatic by clinicians, and researchers. Deactivating strategies associated

				with looser thinking, greater severity of delusions, hallucinations, suspiciousness and overall psychopathology.
Tyrrell & Dozier 1997	Clients with serious psychiatric diagnoses in a care management programme	N=44 (DSM-III-R diagnoses: schizophrenia, n=29; Bipolar disorder, n=7; Schizoaffective disorder, n=8).	Adult Attachment Interview	Schizophrenia: Four way categorisation (three-way forced categorisation) Unresolved, n=12; secure n=1 (3); dismissing, n=16 (24); preoccupied, n=0 (0), Schizoaffective disorder: Four way categorisation (three-way forced categorisation) Unresolved, n=2; secure n=1 (1); dismissing, n=5 (6); preoccupied, n=0 (1). Bipolar disorder: Four way categorisation (three-way forced categorisation) Unresolved, n=4; secure n=0 (0); dismissing, n=0 (0); preoccupied, n=3 (7).
Dozier et al 2001	Clients with serious psychiatric diagnoses in a care management programme	34 individuals: At least 10 with a diagnosis of schizophrenia, and at least 7 with a diagnosis of Bipolar disorder. No diagnosis reported for remaining 17 participants.	Adult Attachment Interview Q-sort	Individuals with deactivating attachment strategies displayed greater rejection of significant others, but not case managers. Individuals with deactivating strategies spent less time on social problem solving (with case managers) than individuals with hyperactivating strategies, and reported greater confusion regarding interactions.
Tait et al 2004	Individuals receiving treatment for acute psychosis, in their first	N=50	Revised Adult Attachment Scale (Collins 1996)	Insecure attachment associated with a sealing over recovery style and poorer engagement

	episode, or with a history of multiple episodes			with services
Attachment and schizotypy				
Berry et al 2006	Analogue sample of Undergraduate students	N=323	Psychosis Attachment Measure (Berry et al 2006)	Insecure attachment weakly associated with more negative recollections of parenting. Attachment anxiety correlated positive psychotic phenomena Attachment avoidance correlated with social anhedonia
Berry, Band, Corcoran, Barrowclough & Wearden, 2007	Analogue sample of Undergraduate students	N=304	Psychosis Attachment Measure (Berry et al 2006)	Attachment anxiety significantly associated with unusual experiences, cognitive disorganization and introvertive anhedonia Attachment avoidance significantly correlated with unusual experiences, cognitive disorganization and introvertive anhedonia and non-conformity.
Berry, Wearden & Barrowclough (2007)	Outpatients with an ICD-10 diagnosis of schizophrenia, schizotypal or delusional disorder	**N=58**	Psychosis Attachment Measure (Berry et al 2006)	Attachment anxiety and avoidance with reference to close relationships positively correlated with attachment anxiety and avoidance towards key worker and parental relationships Individuals reported significantly less attachment anxiety in relationships with keyworkers compared to relationships with parents, and in general.

				Individuals reported significantly lower levels of attachment avoidance in parental relationships compared to relationships in general.
Wilson & Costanzo 1996	Analogue sample of Undergraduate students	**N=273**	Hazan & Shaver 3 category measure(1987)	Secure attachment style associated with low positive and negative schizotypy. Anxious/Ambivalent attachment style associated with positive schizotypy only. Anxious/Avoidant attachment associated with positive and negative schizotypy.
Meins et al 2007	Analogue sample of Undergraduate students	**N=154**	Relationship Questionnaire (Bartholomew & Horowitz, 1991)	Higher levels of paranoia predicted by greater attachment anxiety, but not attachment avoidance. Negative schizotypy predicted by attachment anxiety and avoidance.
Pickering et al 2008	Analogue sample of University students	N=503	Relationship Questionnaire (Bartholomew & Horowitz, 1991)	Higher levels of insecure attachment predicted paranoia but not hallucinations Negative self-esteem, anticipation of threatening events and perception of others as powerful mediated relationship between attachment insecurity and paranoia.
MacBeth, Gumley & Schwannauer 2008	Analogue sample of Undergraduate students	**N=213**	Relationship Styles Questionnaire (Griffin & Bartholomew 1994	See Chapter 7 of current thesis

In contrast to the use of self-report measures of attachment, Dozier (1990) investigated attachment representations using the AAI, in a set of studies using diagnostically heterogeneous samples presenting with complex mental health difficulties. The AAI was coded using Kobak's (1989) Q-sort methodology (see Chapter 4). The initial sample of 42 individuals (32 of whom were in supported care) was comprised of 12 individuals with a diagnosis of schizophrenia; 2 with atypical psychosis (both classified as "thought-disordered"); 25 diagnosed with manic-depressive illness; and 3 with major depression (both classified as "affectively disordered). The sample as a whole was scored significantly lower on the security/anxiety dimension than non-clinical comparison samples. However, there was no significant difference between clinical and comparison samples on the avoidance/preoccupation dimension. Within the clinical sample, the "thought-disordered" participants scored significantly lower on the security/anxiety dimension than "affectively disordered" participants, although there were no significant differences between groups on the avoidance/preoccupation dimension. That said, consistent with Ponizovsky et al's (2007) findings, males scored significantly higher on the avoidance pole of the avoidance/preoccupation dimension, compared to women.

In a subsequent study (Tyrrell & Dozier, 1997), attachment organization was investigated in a sample of 42 individuals with "serious psychiatric disorders"; including diagnoses of bipolar disorder (n = 7), schizoaffective disorder (n = 8), and schizophrenia (n = 27). In contrast to Dozier's previous study (1990), in this study the Main and Goldwyn (in press) categorical AAI coding system was utilised. Under a three-way classification of attachment organization (autonomous, preoccupied, and dismissing) the majority of participants were classified as dismissing of attachment. Applying the four-way classification guidelines almost 50% of those diagnosed with schizophrenia were classified primarily as disorganised (see Table 5.1). Differences in attachment classification based on diagnosis were also evident in this sample, with no individuals with a diagnosis of schizophrenia classified as preoccupied with respect to attachment, whereas all participants with a diagnosis of bipolar disorder were classified as preoccupied.

Given the current thesis includes consideration of affective psychosis, Fonagy and colleagues (1996) clinical sample is also of relevance. When the 72 individuals in this study who were diagnosed with a depressive disorder were categorised by *type* of depression, a significant difference in attachment classification emerged between individuals with a bipolar (including two cyclothymia diagnoses; n = 21), dysthymic (n = 21), and major depressive disorder (MDD; n = 30) diagnoses (x^2= 14.2, $p < .01$). Major depressive disorder was associated with attachment security, and bipolar disorder with a dismissing classification. This contrasts with the above findings of Tyrrell & Dozier (1997). Also related to the present line of enquiry is data from this study pertaining to the sub-sample of 22 individuals combined from paranoid and antisocial personality disorders. No significant differences were observed for attachment classification for either three or four-way categorisations, however there was a predominance of Unresolved classifications (n=17) within this grouping, indicative of disorganisation in the discussion of loss or abuse related experiences. . At this juncture it is also important to note that to date there has been a paucity of studies that have used the AAI, which given its direct link to the SST remains the gold standard of attachment assessments.

In summary, when considering the small literature on attachment organisation in clinical samples of individuals' with psychosis two aspects are of note. Firstly, consistent with the predictions of attachment theory, and similar to other psychopathologies, insecure (and disorganised) attachment classifications and attachment styles are significantly more prevalent than in non-clinical samples. Secondly, within these insecure categories, avoidant/dismissing attachment styles are particularly prevalent, indicating a minimisation or down-playing of attachment concerns. Given the close link between deactivating attachment strategies and underlying emotional reactivity (see p. Chapter 4) this suggests a link to affect regulation – via an implicit (or explicit) strategy to divert attention away from the potentially destabilising impact of affect. However in, the only sample to date of individuals with a *first* episode of psychosis (Couture, et al., 2007) the predominance of avoidant attachment style was not noted, suggesting the possibility that the high prevalence of attachment avoidance may in part be a reflection of the experience of

multiple episodes, and the corresponding emergence of secondary difficulties, such as diminished quality of life. Ergo, in the first episode the impact of psychosis and concomitant changes in life circumstances are reflected in mutually compatible phenomena of affective dysregulation and a corresponding hyperactivation of the attachment system in relation to this emotional distress. If one views the experience of psychosis as a life event, this is also consistent with the destabilising effects of life events upon the integrity of the attachment system. In contrast, for those individuals who have experienced multiple episodes of psychosis, and diminution of their quality of life, minimising attention towards attachment related thoughts and feelings serves as an organised system (albeit excessively rigid) for regulating affect. This hypothesis will be explored in a clinical context in Chapter 10. Therefore, this approach to using attachment theory to enhance our understanding of psychosis echoes the position adopted at the end of Chapter 4. Attachment is not used to map classifications to diagnoses, but instead is used as a contextual variable which may explain the articulation of distress in different psychological disorders, and how this may explain onset and adaptation to the experience of mental health difficulties.

Attachment, psychotic symptomatology and schizotypal processes

A separate literature has investigated links between individual psychotic symptomatology/phenomenology and attachment (Wilson & Costanzo, Berry, Barrowclough, Wearden & Liveridge, 2006; Berry, Band, Corcoran, Barrowclough & Wearden, 2007; MacBeth, Schwannauer, & Gumley, 2008, Meins, Jones, Fernyhough, Hurndall & Koronis, 2007, Pickering, Simpson & Bentall, in press). With the exception of MacBeth, et al., (2008; see following chapter) and Pickering, et al., (2008, who focussed on specific phenomena of paranoia and hallucinations), the remaining four papers have utilised the concept of schizotypy (Meehl 1962; Claridge & Beech 1995) – a non-clinical, sub-diagnostic conceptualisation of psychotic-*esque* experiences, focussing on unusual perceptual experiences, idiosyncratic or persecutory beliefs, mild social withdrawal and diminished experience of pleasure – to provide an analogue for clinical psychotic symptoms.

Wilson and Costanzo (1996) reported relationships between anxious attachment and positive schizotypy, and between avoidant attachment and both positive and negative

schizotypy. Berry, et al., (2006) used a composite self-report based on Bartholomew & Horowitz's model (1991) to investigate attachment insecurity and non-clinical psychotic phenomena, also in an analogue student sample. They reported associations between attachment anxiety and positive psychotic phenomena, and between social anhedonia and attachment avoidance. Berry and colleagues (2007) expanded on their findings, using a further analogue sample utilising the PBI and the Attachment History Questionnaire (Pottharst, 1990). They again reported an association between attachment avoidance and social anhedonia ($z = 3.71$, $p = 0.001$), and between attachment anxiety and cognitive disorganisation ($z = 5.52$, $p = 0.001$). Attachment avoidance also predicted predisposition to unusual experiences. They also reported peer affectional support (AHQ) and maternal overprotection (PBI) as predictors of attachment anxiety. However, only peer affectional support (AHQ) predicted attachment avoidance. Meins, et al., (2008) reported a positive association between attachment anxiety and both paranoia, and negative schizotypal traits. Furthermore, attachment avoidance was also associated with negative symptoms. Finally, Pickering, et al., (2008) reported an association between attachment insecurity and paranoia, controlling for comorbidity between hallucinations and paranoia. In this large non-clinical sample (n=503) insecure attachment style was a predictor of paranoia only, not hallucinations. Indeed, as will be expanded upon in the next chapter, it would appear that the relationship between attachment styles that are *not* secure and heightened levels of paranoia constitutes the most robust finding to emerge from this nascent literature, However, all the aforementioned studies are subject to the caveat that they utilised analogue samples, thus may not readily generalise to clinical samples.

To date, only two studies have explored links between attachment status and specific psychotic symptomatology in clinical samples. Ponizovsky, et al., (2007) divided symptom scores into high or low sub-groups (the high scoring group being >22 for PANSS positive symptoms and >17 for PANSS negative symptoms). Membership of both the high PANSS Positive and Negative sub-groups was associated with higher avoidant attachment styles ($p < 0.01$ and $p < 0.05$), while anxious/ambivalent scores and secure scores were and (Kay, Fiszbein, & Opler, 1987), while the high PANSS positive sub-group was also associated with higher anxious/ambivalent scores

(p<0.05) and lower secure scores (p <0.05). Attachment style was not associated with scores on the PANSS General Psychopathology scale. Using the AAI with a sample of participants predominantly with schizophrenia or bipolar diagnoses, Dozier & Lee (1995) found that the attachment interviewer's assessment of participants delusions (r = .30, p < .05), auditory hallucinations (r = .30, p < .05), and suspiciousness (r= .55, p < .01), were positively correlated with deactivating/dismissing attachment strategies and negatively correlated with attachment security (i.e. indicative of attachment insecurity (r values= -.33 to -.45, all p values < .05),). Both attachment interviewers and clinicians' ratings of participants' 'global psychosis' (positive symptoms only) were significantly correlated with deactivating attachment strategies (r= -29 and r= -0.41 respectively, both p <.05) and attachment insecurity (both r= -41, both p <.05). On a self-report measure of symptomatology (Brief Symptom Inventory, Derogatis & Spencer 1982), there were significant negative correlations between the deactivating/hyperactivating attachment strategies and symptomatology, with individuals with more hyperactivating strategies reporting greater levels of symptomatology (F (1,74) = 4.86, p < .05). Given the variation in the measures used for assessment of psychotic symptomatology and attachment status in the above two samples it is difficult to draw any firm conclusions from these data. Furthermore, participants in both samples had experienced multiple episodes of psychosis; therefore it is difficult to apply these findings to a first episode sample, beyond the observation that there is an association between attachment avoidance or deactivating strategies, and the presentation/symptomatology of schizophrenia and other psychoses.

Methodological difficulties in assessing attachment in psychosis

With regard to methodological issues, it is pertinent to note that use of the AAI in the study of attachment in psychosis has been discouraged (Dozier, et al., 1999). Firstly, it has been suggested that the aforementioned substantial presence of Unresolved status in psychosis samples (e.g. 44% of Tyrrell & Dozier's (1997) sample), represents an epiphenomena of the presence of thought disorder and thus disorganised/incoherent speech in both psychosis and Unresolved status. As will be discussed below, this caveat does not take into account the increasingly evidence

based argument for heightened incidence of trauma and neglect in the aetiology of individuals with psychosis (e.g. Read, et al., 2005; Bebbington, et al., 2004; Read & Gumley 2008).

Following from the first point, Dozier and colleagues (1999) assert that with regard to secure/insecure classifications, *"the failure to find many autonomous transcripts among persons with schizophrenia is to be expected, in that the incoherence associated with thought disorder is inconsistent with a coherent transcript* (p. 510)". This assertion can be critiqued on at least two points. Firstly, it presupposes that all individuals with a diagnosis of schizophrenia display thought disorder (not withstanding the over-simplistic equating of schizophrenia as synonymous with psychosis). Secondly it suggests that memory difficulties in psychosis render analysis of attachment states of mind either superfluous or impossible. Although compromised cognition and memory deficits are evident in psychosis (e.g. Heinrichs & Zakanis, 1998), even in the first episode (Addington, Saeedi & Addington, 2005), it is overly simplistic to suggest that these facts *automatically* negate the value of investigating attachment narratives. Indeed it would be of little practical utility, and probably unethical, to explore attachment representations in acutely distressed and psychotic individuals. In addition, given the relative stability of attachment representations classified using the AAI (Hesse, 1999), the attachment representation narrated when an individual is no longer acutely distressed should still provide a valid representation of his/her state of mind with regard to attachment, without the potential confound of thought disorder or conceptual disorganisation. Further evidence for the validity of the individual's developmental narrative comes from Rankin and colleagues (2005) investigation of family relationships and recollections of parenting (albeit using the PBI rather than an attachment measure). These authors' found both acutely paranoid and remitted individual's reported low parental care and overprotectiveness during childhood, and negative developmental experiences, suggesting that the recollection of developmental experiences was not negatively biased by the presence of active psychotic symptomatology.

It is also of note that in considering the clinical problems discussed in the previous chapter, attachment representations have been used to inform and enhance the

understanding of the aetiology and phenomenology of each clinical problem. However, in the case of psychosis and schizophrenia the symptomatology involved is presupposed to rupture the attachment representation. This reasoning seems logically inconsistent. Furthermore, given the current thesis proposes that emotional dysregulation is not only of importance in the clinical presentation of psychosis, but also that the circumstances in which one's state of mind with regard to attachment arise may provide a context for an individual's pathway into psychosis (e.g. Birchwood 2003; Harrop & Trower, 2003; Liotti & Gumley, 2008), the attachment narrative is potentially a factor which is intrinsic to the aetiology and presentation of the individual's subjective experience of psychosis.

Is attachment theory relevant to psychosis?

To summarise so far, it is of note that the aforementioned studies predominantly suggest that a) insecure attachment organisations predominate in psychosis; a consistent but non-specific finding in studies of attachment and psychopathology; and b) there is an elevated incidence of Dismissing/Avoidant attachment representations in studies of psychosis. As discussed previously, dismissing attachment status is indicative of a stance towards attachment where attention is diverted away from attachment-related concerns and affectively laden discourse, although the underlying physiological activity suggests emotional arousal is increased, but not overtly displayed (Dozier & Kobak, 1992). Two hypotheses present themselves to explain the high proportion of Dismissing classifications in psychosis, and schizophrenia. Firstly, it may be the case that individuals with psychosis attend less to, or have a compromised understanding of attachment related issues, and thus are more likely to be classified as Dismissing on the basis of exhibiting less interest in articulating an understanding of attachment processes in the interview situation. As this is in part a reflection of the intersubjective nature of attachment in adulthood, this would also be consistent with the widely replicated finding of theory of mind difficulties in psychosis (see section on mentalisation below; and Sprong, et al., 2007). Therefore, the dismissing attachment narrative is a function of a *passive* lack of understanding of attachment related concerns.

An alternative hypothesis could be that in response to situations involving attachment related concerns the dismissing strategy is deployed (either explicitly or implicitly) as an *active* strategy for minimising the impact of dysregulating and disorganising affect. Therefore, attachment and affectively charged situations are coped with by minimising the emotional impact, while still producing emotional arousal. An intriguing strand of neurobiological research provides analogous support for this proposition. There have been repeated findings of hyper-responsive electrodermal activity displayed by individuals with psychosis, to both innocuous and emotionally arousing stimuli (Dawson & Schell 2002; Kring and Neale 1996; Kring, Earnst, & Germans, 1999); consistent with the heightened electrodermal responses displayed by individuals classified as Dismissing during administration of the AAI (Dozier & Kobak, 1992). Furthermore, heightened responsiveness appears to be an indicator of poor symptomatic, social and functional outcome (Dawson & Schell, 2002); whereas electrodermal *hypo*-responsivity has been reported to associate with better outcomes. (Schell, Dawson, Neuchterlein, Subotnik, & Ventura, 2002). Furthermore preliminary evidence from a first episode sample (Couture, et al., 2007) suggests attachment anxiety and preoccupation were also evident in the first episode sample, implying that in the first episode attachment concerns may be more active (with the attendant activation of affect) than in multiple episode samples.

Additionally, self-reported attachment style measures cannot satisfactorily capture attachment disorganisation as defined by Main and Hesse (1990), although the only study of a psychosis sample to use the Unresolved classification reported almost half of their sample to code as Unresolved on the AAI (Tyrrell & Dozier 1997). Therefore, given the distribution of attachment style in the first episode, and the high proportion of "U" status in the aforementioned psychosis sample, there is a cogent argument for using interview based measures of attachment in an FEP cohort. Indeed, the role of attachment related trauma in psychosis is consistent with the fundamental tenets of attachment theory (see below). Furthermore, evidence suggests that in a 1-year longitudinal study of the impact of life stress, separation and loss upon attachment security, such factors were related to increases in attachment insecurity when attachment was assessed by interview methods, but not when attachment was assessed by self-report (Davila & Cobb, 2003).

In addition, studies utilising self-reports have tended to rely on a psychopathology based conceptualisation of the link between attachment and psychosis, emphasising links between heightened levels of attachment avoidance and anxiety (and/or attachment insecurity), greater levels of psychotic symptomatology, and factors associated with reduced quality of life (e.g. Berry, Wearden & Barrowclough, 2008). However, this method of assessing attachment may not capture the nuances of the attachment system in promoting resilience, such as Main, et al's (2002) conceptualisation of "earned secure" - a narrative pattern observed in the AAI whereby interviewees report difficult attachment related experiences, suggesting a predisposition towards insecure attachment organisation, but do so in a contained and reflective manner indicative of a secure/autonomous attachment state of mind. In the developmental literature, parents with "earned security" display equally sensitive and responsive parenting when compared to individuals with ostensibly more stable attachment related experiences (Pearson, Cohn, Cowan & Cowan, 1994; Phelps, Belsky & Crnic, 1998). In the context of psychosis, one can hypothesise that, in contrast to self-report measures, accessing attachment security via narrative may give a more detailed representation of the individuals capacity to integrate the experience of psychosis, linking to concepts of resilience and recovery in FEP (e.g. Gumley & Schwannauer, 2006; Geekie & Read, 2008). Taken as a whole, the above evidence suggests that attachment organisation may be an important under-investigated factor in furthering understanding of how individuals with psychosis cope with affectively laden and distressing situations, the experience of psychosis *itself* being an example.

With regard to individual symptomatology there are mixed findings regarding the relationship with attachment – with positive symptomatology apparently related to both attachment anxiety and avoidance. At present, the literature seems unclear as to the specificity of positive symptoms to specific attachment patterns. The most parsimonious explanation of these conflicting data would seem to be that studies have tended to cluster individual positive psychotic phenomena within a theoretical model relating to schizotypy, thus yielding associations of attachment to positive schizotypy, rather than to specific psychotic phenomena. Therefore, application of

the same methodology in a clinical sample, or examination of attachment using more fine-grained measures of positive symptomatology seems warranted (such as those administered by Pickering, et al., 2008; and see Chapter 6).

The relationship of attachment to negative symptomatology and phenomena is also of interest, as findings from both analogue and clinical samples are more consistent in relating this characteristic to attachment avoidance (e.g. Berry, et al., 2007; Ponizovsky, et al., 2007). This is augmented by the findings from the PBI literature that the recollections of participants' parenting are characterised by a perceived lack of care. The aforementioned limitations of the PBI not withstanding, it would appear that the conjunction of parental lack of care in childhood, and attachment avoidance in adulthood mirrors the dyadic features of the Avoidant/Dismissing attachment interaction of the Ainsworth/Main tradition – with the caregiver taking a stance towards the infant which downplays and minimises the expression of attachment behaviours, predicating the infant to adopt a stance towards attachment that similarly avoids and dilutes the affective/attachment related impact of interpersonal relationships. If one recalls the literature on mentalisation and reflective function, if the individual has to devote increased resources to the attachment system (either with a view to suppression or over-expression), the conditions for the development of a flexible, reactive and accurate sense of mentalisation are foreshortened. The above set of circumstances would seem to juxtapose neatly with the literature on social difficulties in psychosis, which have been identified as one of the more pervasive barriers to recovery in psychosis and schizophrenia (Birchwood et al 1998; Grant, Addington, Addington, & Konnert, 2001). Furthermore, as I have discussed in Chapter 3, negative symptomatology in FEP appears to associate with poor premorbid adjustment and impairments in social relationships prior to the onset of psychosis.

Loss, separation and trauma from an attachment perspective

In Bowlby's pioneering writings on attachment, he gave particular weight to the effects of separation and loss upon the psychological health of the individual and the impact on one's sense of security, be they infant, adolescent or adult. Indeed, Bowlby

(1980) suggested that the earlier in life the loss of the parent occurred, the greater the potential for psychological dysfunction in later life. Addressing this area with regard to psychosis I intend to consider two definitions of the term "loss" – that of loss due to bereavement, and the wider meaning of "loss" as a life event – a term assimilated from Brown and colleagues work on life event dimensions in depression (1995). In this conceptualisation, loss refers to the passing of established roles (e.g. worker, partner), cherished ideas (partner in a relationship) or a "*diminution of a sense of connectedness or well-being potentially covering every aspect of life* (Kendler et al 2003; p. 791)".

Loss

With regard to the link between loss of attachment figures as a *risk* factor for schizophrenia, historical data has yielded mixed results in answering the question of whether parental loss is a risk factor in the aetiology of the disorder – Granville-Grossman (1966) reviewed 13 such studies from the years 1943 – 1963, and although 8 of these studies reported higher proportions of parental bereavement in childhood in the developmental histories of 'schizophrenic' individuals compared to the general population, only 6 of the 13 studies reported significant differences, leading the author to conclude the evidence was at best equivocal. However, M. Bleuler's (1972/1978) 40-year Bürgholzi follow-up study reported that 31% of 932 people diagnosed 'schizophrenic' had experienced parental bereavement before age fifteen, a rate significantly higher than the general population. Since these formative investigations, studies from the 1970's to the present have remained equivocal on this question –several studies reported higher rates of loss and separation in childhood for schizophrenia patients compared to non-clinical controls (Watt & Nicholi, 1979; Agid, Shapira, Zislin, Ritsner, Hanin, Murad, et al., 1999), other psychiatric patients (Watt & Nicholi 1979), and in chronic schizophrenic inpatients compared to outpatients (Stasny, Perlick, Zeavin, Empfield, & Mayer, 1984). However, several studies reported no differences between schizophrenia groups and either non-clinical controls (Birtchnell 1972; Furukawa, Mizukawa, Hirai, Fujihara, Kitamura, & Takahashi, et al., 1998), or mood disordered patients (Ragan & McGlashan, 1986). Crucially, there is wide variation in the definition of "loss" used – for instance Watt and Nicholi (1979) defined loss as death of a parent before the individual reached

age 19, although the mean age of loss in their samples was less than 7 years. In contrast, Erlenmeyer-Kimling, Rock, Squires-Wheeler, Roberts, & Yang, (1991) reporting from the New York High Risk Project, classified parental loss as counted as "*any permanent removal of a parent from the children's home owing to marital separation, divorce or death* (p.249)". This study reported no association between parental loss and incidence of psychosis, hospitalisation or "dysfunction" in the offspring. However, due to the design of the study, loss was only considered after the offspring had reached age seven.

Therefore, it may be the context and implications of the loss, rather than the event of loss itself, that carries most gravity, particularly in terms of the impact upon attachment (in)security. For instance, in the Copenhagen High Risk project, (Parnas, Teasdale & Schulsinger, 1985; Parnas and Mednick, 1991) increased risk of later psychosis in the offspring of mothers with a schizophrenia diagnosis was associated with early institutionalization (not foster care) of the participants rather than separation from the mother itself, ergo it was the loss of attachment figure with no effective surrogate attachment provided which was potentially pathogenic. This is reflected in data from the British Comorbidity Survey (Bebbington, et al., 2004) – after sexual trauma, three of the next four most prominent predictors of psychosis involved separation from an attachment figure during childhood and adolescence – time spent in a children's institution prior to age 16 (OR=11.87), running away from home (OR=11.49), and being taken into local authority care (OR=11.87). Similarly, in the ÆSOP study (Morgan, Kirkbride, Leff, Craig, Hutchinson, McKenzie, et al., 2007) individuals with psychosis, compared with controls, were approximately three times more likely to have experienced long-term separation from one or both parents before the age of 16 (OR=3.36, 95% confidence interval (CI) 2.41–4.70), and approximately three times more likely to have had a parent die before the age of 16 (OR =3.19, 95% CI 1.62–6.26). The effect of separation and loss on risk of subsequent non-affective psychosis was slightly stronger than that between separation and loss and affective psychosis. That said, in this study there was no additional effect of length of separation beyond 1 year, age at which separation/loss occurred and who provided subsequent care (if separation or death involved both parents). Finally, a recent longitudinal epidemiological follow-up study suggested, albeit from a small

sample, that duration of separation from the mother in the first two years of life predicted elevated levels of schizotypal phenomenology (Anglin, Cohen & Chen, 2008). This relationship was specific to those children who displayed angry emotional behaviour in infancy, as reported by the mother – a description echoing Ainsworth and colleagues' (1978) description of infant insecure SST behaviour.

A second theoretical link between loss, attachment and psychosis concerns the previously discussed concept of intergenerational transmission of maternal attachment disorganisation due to loss or trauma to the offspring (Van IJzendoorn, et al., 1999). Liotti and Gumley (2008) emphasise this is conceptually distinct from parental loss in the developmental histories of individuals with psychosis, instead it addresses "*traumas and losses in the lives of the Primary Caregivers of Psychiatric Patients"* (p.120). Two Italian studies investigating borderline personality disorder (Liotti, Pasquini & The Italian Group for the Study of Dissociation, 2000) and dissociation (Pasquini, Liotti, Mazzotti, Fassone & The Italian Group for the Study of Dissociation, 2002) have reported statistically higher frequencies, compared to non-psychiatric controls, of major losses and severe traumas in the life of the patients mothers' in the two years preceding and following the patients' birth. Furthermore, both studies reported statistically significant incidences of childhood trauma in the developmental histories of both the borderline and dissociative patients. The two studies concluded that the risk of subsequently developing a dissociative or borderline personality disorder in adulthood - with the fragmentation of self experience implicit within the phenomenology of these disorders - was predicated upon two potentially independent conditions: (1) the patient's mother was mourning a loss (or was dealing with a serious trauma) during the critical period for the development of attachment organisation in the infant; (2) the patient had experienced severe traumatic experiences (attachment related loss and/or sexual, emotional and physical abuse) during childhood. Finally, Miti and Chiaia (2003) compared a mixed sample of 41 hospitalised individuals with dissociative or borderline diagnoses to 62 psychiatric controls with psychosis. In contrast to the preceding two studies, there was no significant difference between cases and controls, due to the high frequency of loss and trauma experienced by the mothers during the critical developmental timeframe.. Indeed, Walsh (1978), reported that

the death of a grandparent in the two years preceding and following the birth of individuals later to develop psychosis was reported by 41 percent of their sample (*N*= 70), a rate significantly higher than that in psychiatric (*N*= 45) and normal (*N*= 25) control groups. Therefore, there is some evidence that the inter-generational transmission pattern of disorganisation/lack of resolution to the offspring, known to be a risk factor in later psychopathology, may also be a factor in the aetiology of psychosis

Trauma, disorganisation and psychosis

Although Bowlby paid particular attention to the destabilising effect of loss on the ontogenetic psychobiosocial development of the individual, his underlying theoretical position concerned the potential negative impact of *any* trauma upon the attachment system: "*since most of the development and organisation of these behavioural* {attachment} *systems takes place whilst the individual is immature, there are plenty of occasions when an atypical environment can divert them from developing on an adaptive course. The result is that the adult is equipped with a system that, although in working order and capable of reaching a quite specific outcome, is not capable of fulfilling the system's function."* (Bowlby, 1969; p.130). Therefore any interpersonal trauma, including childhood physical and sexual abuse, can act as a catalyst in rupturing the integrity and coherence of the attachment system. Indeed, as discussed in the previous chapter the effects of trauma on the epigenesis of borderline personality disorder, a condition characterised by affect dysregulation have been well documented (e.g. Fonagy, et al., 2002).

The importance of trauma as a factor in insecure and disorganised attachment functioning is a further point of contact with psychosis. As introduced in Chapter 2, there is now a substantial body of evidence linking the experience of psychodevelopmental trauma with later development of psychosis (e.g. Bebbington, et al., 2004; Shevlin, Dorahy & Adamson, 2007) and specific psychotic symptoms (e.g. Read, Agar, Argyle, & Aderhold., 2003; Read, et al., 2005; Larkin & Morrison 2006). In Read and colleagues' (2005) review of 46 studies investigating childhood trauma and psychosis (for more details see Chapter 2, pp's 42 – 43.), the weighted average for childhood physical or sexual abuse was 68.8% (960 / 1395) for females, and

59.1% (518 / 877) for males. At an epidemiological level, in the British Comorbidity study (n=8580), after controlling for current levels of depression, childhood sexual abuse remained the most significant and powerful risk factor for psychosis, with an odds ratio of 15.5 (Bebbington, et al., 2004). Furthermore, in the NEMESIS study (n=4045; Janssen, et al., 2004) the association between childhood sexual abuse and development of psychosis over the two year follow-up period indicated a dose effect of increased risk of psychosis being associated with greater frequency of childhood abuse. Those individual's reporting the highest frequencies of abuse were at a 30 times greater risk of psychosis than individuals reporting no abuse. As discussed in Chapter 2, elevated levels of trauma in psychosis also encompasses the experience of emotional abuse; physical, neglect and emotional neglect (Holowka, King, Saheb, Pukall & Brunet, 2003; Read, et al 2004; Compton et al., 2004). Individuals later diagnosed with a psychosis are also significantly more likely than members of the general population to have experienced other threats to the attachment bond such as have attendance at child guidance centres (Ambelas, 1992), placement in children's homes (Cannon, Walsh, Hollis, Kargin, Taylor, Murray., et al., 2001), or witnessing violence at home (Bebbington et al., 2004).

It must be acknowledged that the above evidence is not unequivocal. For instance, Spataro and colleagues (2004) reported elevated levels of sexual abuse in individuals with a history of childhood mental disorders, personality disorder, anxiety and major affective disorders, compared to the general population; but did not establish an association between elevated levels of abuse and a diagnosis of schizophrenia. However, this sample was selected from individuals from individual's whose sexual abuse had been investigated and verified by authorities, and appropriate action presumably taken. As Read and colleagues (2005) note, such samples are selective and not representative of the true prevalence of child abuse, much of which is remains unreported (Fergusson, Horward & Woodward, 2001; Read, McGregor, Coogan & Thomas, 2006).

At the level of individual symptoms, robust relationships have been demonstrated between incidence of hallucinations and relational trauma, with Read and colleagues (2005) reporting a significant association between theses variables in 19 of the 39

studies included in their review (see also Hardy, et al., 2005). A weaker, but still significant relationship has been reported for delusions, particularly persecutory paranoia (e.g. Read, et al., 2003, Murphy, Shevlin & Adamson, 2007). Relationships between trauma and psychosis appear to be specific to positive symptoms, with no significant associations reported to date for negative symptoms (Read, Rudegeair, & Farrelly, 2006). However, it has also been noted that the current research on childhood trauma and psychosis has sometimes lacked methodological rigour (Morgan & Fisher, 2007), with one review suggesting that studies to data have the following flaws: "*lack of statistical power, lack of attention to moderating or mediating variables, the way in which CT {childhood trauma} was measured, and the use of cross-sectional research designs*" (Bendall, Jackson, Hulbert & McGorry, 2007, p.568). However, the above authors maintain that the veracity of the link should continue to be examined, with greater attention paid to the impact of mediating and moderating factors in the relationship between childhood trauma and psychosis.

The above methodological difficulties not withstanding, the evidence indicating high incidences of both insecure and unresolved attachment classifications in psychosis samples, and the strong theoretical and empirical links between these attachment categories and the experience of relational trauma, a triangulation of these factors and the above observations would suggest that it is at least possible that insecure/unresolved attachment organisations are a mediating factor in the link between trauma and psychosis. Indeed Read & Gumley (2008) speculate that attachment theory offers a promising framework to integrate cognitive, mentalisation or affect regulatory, and relational approaches to trauma in psychosis.

In addition, links have been established between the experience of dissociative processes and schizotypal phenomena (e.g. Startup, 1999; Merckelbach, Rassin & Muris, 2000; Pope & Kwapil; 2000; Moskowitz, Barker-Collo & Ellson, 2005); and also the high prevalence of dissociation in clinical samples of individuals with psychosis (e.g. Goff, Brotman, Kindlon, Waites & Amico, 1991; Greenfield, Strakowski, Tohen, Batson & Kolbrener, 1994; Haugen & Castillo, 1999; Holowka, et al., 2003; Ross, 2004; Kilcommons & Morrison, 2005; Schäfer, Harfst, Aderhold, Briken, Lehmann, Moritz, Read & Naber, 2006). Furthermore, the association between dissociation and

psychosis appears to be mediated by the experience of various forms of trauma including childhood abuse (Goff et al 1991; Holowka et al 2003; Janssen et al 2004; Whitfield, Dubeb, Felitti, & Andab, (2005); encompassing both physical (Goff, et al., 1991; Kilcommons & Morrison, 2005), emotional (Schäfer, et al., 2006) and sexual abuse (Goff, et al., 1991; Offen, Waller & Thomas, 2003, Kilcommons & Morrison, 2005). This body of evidence suggests that although not necessarily causal, there is a strong association between the experience of trauma and adversity, and increased risk of later psychosis – with dissociative experiences such as depersonalisation and absorption comprising a mediating factor. Indeed, the phenomenology of dissociation and schizotypal experiences displays substantial conceptual and statistical and theoretical overlap (Startup 2000; Merkelbach & Giesbrecht 2006). It has also been observed that individuals scoring higher on measures of schizotypy and individuals with psychosis show weaker 'contextual integration' – the cognitive process whereby information and experiences are placed within a spatial and temporal context (Jones, Hemsley & Gray, 1991; Steele, Hemsley & Pickering, 2002), and also report higher intrusive thoughts and memories in response to an experimental manipulation designed to induce intrusions (viewing a stressful film). A relationship has also been reported between heightened levels of schizotypy and dissociative experiences after experiencing potentially traumatic events (Steel, Mahmood & Holmes, 2008).

As discussed in Chapter 4, there is also an association between dissociative experiences and attachment disorganisation. The above findings pertaining to contextual integration and dissociation in schizotypy are also reminiscent of the decontextualised and fractured narratives of traumatic events characteristic of Unresolved attachment narratives, Thus, when viewed through the prism of attachment theory, it would suggest that attachment disorganisation (and dissociative processes) may be additional factors in the putative trauma and psychosis link. Inverting Dozier and colleagues (1999) suggestion that disorganisation in the AAI is an epiphenomena of symptomatology, Unresolved classification may in fact be is linked to the experience of either earlier trauma compounded by psychosis, or the experience of psychosis *itself*, processed by the individual as traumatic and disorganising, with corresponding ramifications for affect regulation and difficulties

in adaptation to the experience of psychosis. The therapeutic implications of this position will be explored in Chapter 11 (Conclusion).

Further points of contact between attachment and psychosis – mentalisation and help-seeking

The theoretical relevance of mentalisation in psychosis

The previous chapter introduced mentalisation as an explanatory framework for understanding affective and cognitive dysfunction in borderline personality disorder. Of particular importance in the conceptualisation of mentalisation in relation to psychopathology is the close interplay between attachment, mentalisation and affect regulation. Fonagy and colleagues (Fonagy & Target 2006; Fonagy & Bateman 2006) have argued for a synergistic interplay at both the psychological and neurobiological level between i) the attachment system; ii) a cognitive-emotional system guiding for attentional control and long term memory, particularly specialised toward positive and negatively valenced emotions ("System A" – the affective memory/attentional system); and iii) a cognitive-emotional network oriented towards theory of mind, evaluation of social and moral situations, and awareness of self and other's mental states ("System B" – the mentalising system). Fonagy and Bateman (2006) delineate the implications of interactions between these three systems – with particular reference to the action of the attachment system in inhibiting the operation of System's A & B. The attachment system inhibits System A by facilitating the conditions for security – Bowlby's "secure base" – thus moderating the experience of destabilising negative affect. Hence Fonagy & Bateman's (2006) observation that the removal of access to the attachment system through loss or separation is potentially psychologically damaging precisely because the modulating system for negative affect is removed. The attachment systems modulation of the operation of System B is evolutionarily adaptive as the reliable provision of safety (via secure attachment) reduces the need for evaluation of social intentions of the other – as safety can more or less be guaranteed. Thus, paradoxically attachment system activation reduces mentalising activity (Bartels and Zeki, 2004). Following from this, any experiences or events that impact on the optimal development of any one of the above three systems,

particularly those which are threatening to the individual or occur in infancy, childhood and adolescence, will destabilise the flexible operation of the psychological system as a whole due to the synergy and reciprocal links between the systems. To illustrate, in Borderline Personality Disorder, Fonagy and Bateman (2006) argue that the combination of early maladaptive attachment experiences, *insecure* attachment organisation in adulthood, and a fragile mentalisation/reflective capacity predicate the individual to substantial difficulties in affect regulation, whereby anxiety provoking situations such as affectively valenced interpersonal relationships are destabilising and intolerable.

Liotti & Gumley (2008) have surveyed a similar set of developmental factors, placing them within a causal framework relating attachment disorganisation, trauma, dissociative responses and deficits in mentalisation as a framework for understanding psychotic symptoms, grounded within the affective distress underlying the experience of psychosis. These authors proceed from the understanding that disorganised attachment in infancy is a risk factor for the *"development of shattered and fragmented states of mind"* which predicates a susceptibility to dissociative responses to trauma and or negative life stressors. Therefore, *"the experience and the interpersonal effects of the dissociative responses are complicated by a fragile and limited self-reflective (mentalizing) capacity, which is vulnerable to the destabilizing impact of negative impact of negative affect triggered by stressful life events."* (Liotti & Gumley, 2008; p. 126) Furthermore, in this model positive symptoms can be understood as a reflection of negative interpersonal schemata, operating in a dissociated state of overwhelming affect, which precludes the moderating effect of mentalising capacity. This is analogous to the internal working model of disorganised attachment (Lyons-Ruth & Jacobvitz 1999).

In contrast, Liotti & Gumley (2008) suggest that negative symptoms are associated with an interpersonal stance similar to that of the dismissing attachment state of mind, where affect is rigidly over-regulated to counteract the destabilising/disorganising effects of overwhelming affect. This is also reflected in the "sealing over" recovery style, which is itself linked to attachment insecurity and a negative stance towards recollections of parenting (Tait, Birchwood & Trower 2004).

This position is also consistent with the findings regarding attachment in chronic psychotic samples reported earlier in this chapter.

This model is also consistent with the integrative position proposed by Fonagy and colleagues (2006a, b) whereby, there is evidence of dysfunction in both the attachment system, and the affective memory ("A) and mentalising ("B") systems. Although consistent with Liotti & Gumley's (2008) above stance, reference to the latter model also gives neuroscientific grounding to the breakdown in systemic regulation implicit in both models. Furthermore, combining both models suggests that affective (dys)regulation in psychopathology involves all three systems, encompassing an interaction of proximal and distal factors.

With regard to psychosis, the evidence outlined in the preceding chapters of this thesis for compromised functioning in the attachment system seems to be relatively robust, as is the increasing wealth of data on trauma and loss as a risk factor in the development of psychosis. However, given the synergistic links between attachment, mentalisation and affect regulation, it is also necessary to survey the literature on these latter two areas. With regard to Fonagy and Bateman's (2006) Affect regulation system "A" – the system proposed to guide cognitive-emotional attentional control and memory in interpersonal situations (neuroanatomically located in the right hemispheric middle prefrontal, inferior parietal, middle temporal cortices and the posterior cingulate cortex) there is a paucity of evidence directly pertaining to psychosis. Indeed Aleman & Kahn (2005), in a review of emotional processing and amygdala involvement (part of the mentalising system in Fonagy's proposal) in psychosis written from a biological psychiatry perspective, note that there is a pressing need for research to focus on emotional processing *in conjunction* with right hemispheric neural systems. It is these right hemispheric systems which represent the neural substrate of the affective memory system. This system may represent a fertile ground for future research in the phenomenology of psychosis, but due to the paucity of research findings cannot be elaborated upon in the current chapter. However, the literature on mentalisation - a key aspect of Fonagy & Bateman's (2006) "System B" - in psychosis is notably more extensive.

Mentalisation as Theory of Mind

In research into psychosis, the evidence for deficits in mentalisation has tended to be encapsulated within the literature on "theory of mind" (Frith, 1992) – a meta-cognitive conceptualisation of the emergence and operation of the capacity to accurately attribute mental states including thoughts, beliefs and intentions, to the self or other, and using this information to guide one's behaviour in socio-interpersonal situations. The distinction between "Theory of Mind" and "Mentalisation" rests on the degree to which relational and affect regulatory aspects of the attribution of mental states are considered, with more consideration of such aspects being made in the latter conceptualisation (Carpendale & Chandler, 1996). Frith (1992) proposed that in schizophrenia the capacity to mentalise (in the cognitive sense) is compromised, leading to misattributions of the intentions of others and difficulties in maintaining socio cognitive functioning manifest in the content of positive symptomatology.

Indeed, Meta-analytic data of 29 studies of mentalisation in schizophrenia, representing data from 831 psychotic participants (70% male, mean age 35.9 years) and 687 controls (60% male, mean age 35,2 years), suggested a statistically significant, large effect size (d= -1.255; $p< .0001$) for impairments in mentalisation in the psychosis sample (Sprong, et al., 2007). When patients were subdivided into four sub categories (with and without disorganisation; evidence of paranoid symptomatology and remitted patients) evidence of theory of mind impairment was evident in all groups including remitted patients, and was significantly greater in individuals with evidence of disorganisation ($p< .01$). Therefore compromised theory of mind appears to be a stable trait vulnerability in schizophrenia, rather than a state variable apparent only during the acute phase of psychosis. Furthermore, the finding of a particularly significant impairment in patients with disorganization is consistent with Gumley and Liotti's (2008) suggestion that the experience of psychosis is linked to a collapse of attachment strategies and reflective capacity, leading to a global collapse of the individual's psychological sense of coherence.

Frith (2004) has recently revisited the theory of mind hypothesis to suggest that, rather than being a global deficit in the explicit attribution of mental states (as in Autistic spectrum disorders), impaired mentalisation in psychosis may be specific to explicit attributions of mental states, with implicit mentalisation preserved. Support for this adjustment to the theory of mind hypothesis comes from a naturalistic study by McCabe, Leudar & Antaki (2004) who reported that individuals with a diagnosis of 'chronic' schizophrenia displayed intact theory of mind skills in clinical interactions with mental health professionals. They were able to recognise the disparity between their own explanations of their beliefs, and the clinician's explanation of their difficulties. However, the process of mentalisation broke down when the individual tried to justify their belief to the clinician, being unable to coherently do so. That said, these findings were taken from a study of CBT for psychosis, where the context is arguably one in which the fostering of mentalisation (including theory of mind skills) is itself a goal of therapy. Although the transcripts were taken from the beginning sessions of the intervention, the results may not generalise to other clinical interactions, or situations of more accentuated emotional valence.

Additional evidence for the importance of considering Fonagy & Bateman's mentalisation system ("System B") in psychosis comes from studies of functional neuroimaging. Neuroanatomically, these authors locate "System B" within a neural complex including the temporal poles, parietotemporal junction, amygdala, and mesial prefrontal cortex (MPFC) – all of which have been shown to display activation patterns at variance with normal performance during mentalisation in individuals with psychosis (Brunet-Gouet & Decety, 2006). Evidence also suggests that individuals with psychosis also have difficulties in the processing of affectively valenced facial and vocal information (Edwards, Jackson, & Pattison, 2002; Hooker & Park 2002; Johnston, Devir & Karayanidis, 2006; Van't Wout, Aleman, Kessels, Cahn, de Haan, & Kahn, 2007). Furthermore, emerging data has suggested mentalisation based processes such as accurate facial affect recognition (Kurcharska-Pietra, David, Masiak, & Phillips, 2006; Addington, Saeedi, Addington. 2006a), and social cue recognition (Addington, Saeedi, Addington. 2006b), are compromised even in FEP. Coupled to these findings, dysfunction in the amygdala has also been reported in

patients with schizophrenia in response to the evaluation of negative stimuli (Schneider, Weiss, Kessler, Salloum, Posse, Grodd, et al., 1998; Paradisio, Andersen, Crespo-Facorro, O'Leary, Watkins, Boles Ponto, et al., 2003). However, this is at odds with the reporting of increase galvanic skin conductance in response to negative emotional stimuli (e.g. Kring & Neale, 1996), and the observation of increased emotional reactivity in response to everyday stressors displayed by individuals with psychosis (Myin-Germey's et al., 2000). As Kring & Earnst (1999) note there is a disjunction between the *expression* of emotion, which is diminished, and the *experience* of emotion – which is at normal, or even accentuated levels. From an attachment perspective, the only study to date to measure attachment representations in the context of functional neuroimaging reported that individuals classified as unresolved/disorganised displayed increased amygdala, medial temporal and hippocampal activation during discussion of trauma (Buchheim, Erk, George, Kächele, Ruchsow, Spitzer, et al., 2006). Notably, these are areas implicated by Fonagy & Bateman (2006) in both mentalisation and affective memory. Therefore situations that prime traumatic memories also disorganise the attachment system (hence the activation of neural areas concerned with autobiographical memory and negative emotions), thus necessitating the recruitment of greater resources for mentalisation in order to evaluate the implications of the situation.

Given the compelling evidence for elevated levels of unresolved attachment representations it is an intriguing and as yet unanswered question as to how mentalisation, attachment and negatively valenced emotional material may interact in the case of psychosis. The above evidence also raises the possibility that different presentations of psychosis may also have differing attachment representations and degrees of mentalisation. For instance, disorganised symptomatology may link to compromised mentalisation and similarly disorganised attachment representations; whereas a presentation characterised by paranoia may have less compromised mentalisation, and an insecure dismissing state of mind with regard to attachment. It therefore becomes a valid research question to enquire as to whether different attachment representations, and levels of mentalisation associate with different symptom patterns, modes of onset, and adjustment to psychosis – potentially

providing new insights into the aetiology of, and adaption to both schizophrenia and other psychoses.

Attachment and help-seeking in psychosis – an explanatory construct for DUP and engagement.

Returning, to Bowlby's fundamental tenets of attachment theory, a further aspect requires consideration –attachment as a theory of *help-seeking*. The individual's stance to help-seeking is a key factor in determining an individual's pathway into care for psychosis (Skeate, et al., 2002), adaptation to, and recovery from psychosis (Tait, et al., 2003, 2004). Two timeframes are of importance: the period from onset of psychotic symptoms to treatment, and subsequently, the 'critical period' (Birchwood, et al., 1998) of engagement with treatment, and recovery from the first episode.

If one conceptualises the experience of psychosis prior to treatment as a period where everyday life, including one's relationships with other's, particularly in close relationships, becomes increasingly unpredictable, threatening and distressing (Harrop & Trower, 2003), and given the function of the attachment system as an interpersonal mechanism designed to maintain security under stressful situations, one would assume the attachment related thoughts, feelings and behaviours would become more active. Consequently, help-seeking would also be influenced by the operation of the attachment system. Harrop and Trower (2003) also highlight the overlap between the challenges of developing a secure and autonomous sense of self in adolescence and early adulthood, and the peak incidence of psychosis. This formulation is broadly consistent with an attachment conceptualisation of a secure and reflexive internal working model of self and others. After treatment is initiated, an individual's state of mind with regard to attachment may constitute a key factor in how the individual engages with treatment. For example, in guiding the individual's beliefs regarding how likely the treatment team are likely to respond to changes in the individual's level of distress. This has clear clinical implications, as it would be an influential factor in guiding an individual's service engagement.

Taking adaptation to psychosis first, preliminary evidence has emerged suggesting a relationship between insecure attachment style and engagement in first episode psychosis (Tait, et al., 2004). Using a first episode psychosis sample, Tait and colleagues (2003) found that a sealing over recovery style –coping with psychotic symptoms by minimising their importance and impact (McGlashan, 1975) – at 3 months was predictive of low service engagement at 6 months. This was independent of level of insight regarding symptoms. In a secondary analysis, Tait et al., (2004) used the Revised Adult Attachment Scale (Collins, 1996), a self-report measure of satisfaction with close (i.e. romantic) relationships. (although 70% of the sample was un-married) and a revised version of the PBI (Parker et al., 1997) to measure childhood recollection of parenting. They found that a sealing-over recovery style at 3 months was associated with greater recall of negative early experiences and an insecure attachment style. Crucially, insecure attachment style was also associated with reduced engagement with mental health services. Of relevance to consideration of mentalisation in psychosis, the study reported that those individual's with a sealing over recovery style also endorsed items on the Evaluative Beliefs Scale (EBS; Chadwick & Birchwood, 1994) indicating a tendency to believe that *others* perceived them negatively, This potential for erroneous mentalisation, coupled with a dismissing stance towards attachment recovery could predicate the individual to minimise the emotional impact of psychosis, increasing the likelihood of decreased engagement and less use of help-seeking in times of crisis. Further support for this position comes from a study by Drayton, et al., (1998), using the PBI as a measure of recollections of parenting experiences, reported that individuals displaying higher levels of sealing over were also more likely to recall their parents as less caring than individuals with an integrating recovery style. The sealing over group also made significantly more self to self negative evaluations than the integrating group.

Further support for an attachment based conceptualisation of help-seeking comes from Dozier's (1990) AAI study of 42 adults with 'severe psychopathological disorders'. In this study individuals with a more dismissing/avoidant stance to attachment were less likely to disclose symptomatology, more likely to minimise the

interventions of case-managers, and less likely to engage with treatment. This is discordant with evidence from the observations of clinicians and observers, suggesting that individuals with more deactivating/dismissing attachment representations were rated as being more symptomatic and having greater difficulties than those with more hyperactivating/preoccupied attachment strategies (Dozier & Lee 1995). Research with a similar sample of 34 individuals, again including schizophrenia and bipolar disorders (Dozier et al., 2001), also suggests that individuals with dismissing attachment representations spent less time discussing their problems with keyworkers, compared to those with more preoccupied attachment representations. Furthermore, individuals with dismissing representations reported being more confused by these interactions than individuals with preoccupied attachment representations, suggesting that there may be a difficulty in the effectiveness of the individuals' mentalisation of the keyworkers' intentions.

Helpseeking and interactions with health providers

Engagement with mental health services should constitute a reciprocal, dynamic and interactional process, involving the attachment organisation of both the client and the clinician. Dozier, Cue and Barnett (1994) observed that clinicians who were rated as more insecurely preoccupied on the AAI responded in greater depth to clients that were preoccupied, also perceiving preoccupied clients as having greater dependency needs in comparison to dismissing clients. More insecure clinicians focussed on the most salient and immediate aspects of the clinical presentation, whereas secure clinicians would also try to identify the clients underlying needs. This is also consistent with evidence that many individuals with a diagnosis of schizophrenia find help seeking a challenge and may have experienced their relationships and previous interactions with others (including clinicians) as unhelpful, aversive or rejecting – particularly when they have tried to discuss psychotic symptomatology (McCabe et al., 2002, 2003). Therefore, it would seem that attachment and mentalisation processes form a substantial part of the context in which the individual's help-seeking and engagement with mental health services emerges.

Following from the above discussion, a further issue regards whether attachment status in individuals with psychosis may influence help-seeking behaviour *prior* to becoming involved with mental health services, and consequently impact upon the duration of untreated psychosis. Skeate and colleagues (2002) established that individuals with a short DUP (< 1month) had significantly more frequent GP attendance in the 6 years preceding onset, compared to individuals with a long DUP (> 6 months). Furthermore, individuals with a DUP of greater than 1 month had significantly higher scores for avoidant coping strategies than individuals with a short DUP. This coping style was also associated with significantly lower GP attendance. Attending one's GP could be interpreted as a prototypical help-seeking behaviour (Cole, et al., 1995; Burnett, et al., 1999), whereby an individual's internal model of other's responsiveness to help seeking may be activated. Hypothetically, if one has an internal model of care-giving individuals as inconsistently responsive or non-responsive, it would be expected that in the context of a strange and distressing situation (e.g. experiencing psychotic symptoms), these individuals would be less likely to seek help; compared to individuals who have a model of care-givers as available and responsive. Consequently, as these individuals are less likely to seek help, they are more likely to remain unknown to services, ultimately manifesting a longer DUP. Furthermore, Skeate and colleagues (2002) reported lower internal health locus of control mean scores and higher chance and 'powerful others' health locus of control mean scores for individuals with an FEP compared with student, non-clinical controls, and 'chronic' samples (taken from Wallston, Wallston & DeVillis, 1978).

In a similar vein, Haley, et al., (2003) explored health beliefs, using a locus of control model, in a sample of 50 individuals hospitalised for FEP, over the first 18 months of treatment. These individuals were compared with physical illness (diabetes) and non-clinical control samples. Compared to non-clinical controls, both the psychosis and diabetes groups had significantly higher scores for the "powerful others" subscale and significantly lower scores on the "internality" scores for health locus of control, The

authors speculate that for the psychosis group, the effect of hospitalisation may have had a powerful effect in reinforcing the external locus of control. This pattern of results, a replication of the findings of Skeate, et al., (2002), was maintained at 18 months. A higher score for internal locus of control was significantly correlated with shorter DUP. Viewed from an attachment perspective, the finding of higher internal scores for internality suggests a health belief model closer to attachment security/higher mentalisation – the individual retaining confidence that their distress can ultimately be aided by health professionals. In contrast, the external locus of control has parallels in the dismissing attachment stance – with others perceived as either unlikely or unable to provide assistance. This proposition is also supported by the above findings of Skeate and colleagues (2002).

Evidence from a study of attachment in somatoform disorders may be of relevance here. Waller, Scheidt & Hartmann (2004) used the AAI in a sample of 35 patients with an ICD-10 somatoform disorder, compared to 20 non-clinical controls. Of the clinical sample 9 individuals were classified as secure, 9 as insecure-preoccupied, and the remaining 17 as insecure dismissing. In terms of health service use, Dismissing attachment was significantly correlated with the number of hospital admissions but not with GP visits. Insecure preoccupied attachment, in contrast, correlated positively with the number of GP visits but not with hospital admissions. Secure attachment correlated negatively with the number of hospital admissions but not with GP visits. The data on GP visits echo the findings of Skeate, et al., (2002) in their study of pathways to care – a disposition to help-seeking which minimises, down-plays or avoids articulating distress is correlated with less GP attendance, and thus when help is sought, symptomatology may have become more accentuated leading to greater likelihood of hospitalisation. In the discussion of their data, the authors suggest that the somatoform disorders are *externalising* in nature – characterised with minimising expression and awareness of affect. This is similar to conceptualisations of psychosis which emphasise that both cognition and affect are compromised in the disorder (e.g. Ciompi, 1988). Given that a long DUP has significant negative consequences for the individuals in terms of greater severity of symptomatology, and more protracted recovery trajectory, it would seem pertinent to explore whether there are

associations between specific attachment representations, DUP and the frequency and nature of help-seeking attempts.

Attachment and carer adaptation to psychosis

Finally, attachment theory has been proposed as a framework for understanding not only the individual's adaptation to psychosis, but also the impact of psychosis upon the individual's family and loved ones. Attachment has been linked with the long established interpersonal model of parental and carer distress defined as "Expressed Emotion" (EE: Brown & Rutter, 1966). "Expressed Emotion" denotes three mechanisms underlying interpersonal relationships and communication patterns. Firstly, Emotional over-involvement (EOI) represents a breakdown of the natural boundaries in the family. Secondly, critical comments (CC), denotes a negative, hypercritical attitude displayed by the carer towards the individual. Finally, hostility represents a generalised merging of criticism of the individual's personality and elements of rejection on the part of the carers. Importantly, EE has been consistently demonstrated to be a predictor of both poor clinical outcome and relapse in a range of psychiatric conditions (see Butzlaff & Hooley, 1998; Wearden, Tarrier, Barrowclough, Zastowny, Rahill, 2000 for reviews).

In the first episode, EE has been demonstrated to fluctuate, perhaps as a function of a process of adjustment and adaptation among the family dyad to the impact of psychosis. Supporting this, Patterson, Birchwood and Cochrane (2000) followed up relatives of 50 individuals following a first episode of psychosis over nine months. Overall expressed emotion was unstable in 28% of the sample over this period, with relatives mainly changing from high EE to Low EE status. Relatives exhibiting high levels of emotional over involvement coupled with low levels of criticism reported significantly higher feelings of loss. Those whose expressed emotion status changed from high EOI to high criticism reported low levels of loss indicating that the evolution of criticism may be mediated by loss appraisals. One can draw parallel's between Bowlby's (1980) conceptualisation of the loss of a loved one of and the attendant angry and rejecting responses frequently observed as part of the mourning process, and the loss through changes to friendships, relationships, or roles experienced in psychosis (Gumley, Schwannauer, MacBeth & Read 2008). Using a

similar conceptualisation of "loss" as the threat posed by the loss of cherished roles, goals or relationships previously associated with the patient, Patterson and colleagues (2000; 2005) reported changes in the level of expressed emotion in 30.7% of their sample, predominantly from high EE to low EE. When the components of EE were examined, there was an interaction over time between levels of emotional overinvolvement and criticism. Over half of those relatives initially scoring high in critical comments remained so at follow-up. In addition, 50% of those relatives rated as high in emotional over involvement were rated as high in criticism at follow-up. Crucially, the change from high emotional involvement to high criticism or to low levels of overall EE was linked to significant reductions in the appraisal of loss. Consistent with this, Bowlby (1980) observed that the mourning process modulated over time to an acceptance of the situation as it had become, leading to a reorganisation and reorientation of psychological resources. This is consistent with the function of attachment in aiding the development of resilience. Furthermore, adolescence and young adulthood - the period of greatest risk for development of FEP - is also a time of important transitions in the relationship between parent and offspring.

Thus, offspring are undertaking important developmental tasks including autonomy, independence and individuation (Harrop and Trower, 2003). Therefore, the experience of psychosis will impact upon parental representations of the attachment relationship with their offspring at a time where such representations are also likely to be in a period of reorientation. A further intriguing point concerns the role of EE prior to the development of psychosis, rather than in relation to relapse. The one longitudinal study of adolescents at high risk of psychosis which measured parental EE– the UCLA Family project – reported that after 15 years, 36% of individuals whose parents both scored high on EE (including hostility and criticality) has received a diagnosis of schizophrenia. In contrast for individuals for whom only one parent scored high for EE the proportion was 0%. Read & Gumley (2008) have related this finding to the protective secure base function of the parent not rated high for EE.

Attachment, mentalisation, affect regulation and psychosis – points of contact for an integrative theory?

In conclusion, this chapter has established multiple points of contact between attachment theory and psychosis, following Bowlby's (1969/1982, 1973, 1980, 1988) themes of the development of psychological security/insecurity, the impact of life events upon the attachment system, help-seeking, and resilience (and the recommencement of exploration).

Firstly, with regard to security, in common with most psychopathologies evidence suggests that insecure attachment representations overwhelmingly predominate in psychosis, particularly insecure/avoidant classifications. However as the majority of research so far has focussed on multiple episode samples, confounded by the presence of secondary disabilities impacting upon quality of social relationships, the extent to which insecure/avoidant representations predominate in an FEP sample has not been established. Indeed, Coutoure and colleagues (2007) provide evidence that attachment *style* in FEP is characterised by high levels of attachment anxiety and avoidance. It also seems plausible that Unresolved/Disorganised attachment representations may be present at elevated levels in FEP populations, reflecting a breakdown in the regulatory capacity of the attachment system. Therefore, establishing the distribution of secure and insecure attachment representations in FEP (and implicit within this the cognitive-affective-interpersonal model that each attachment classification represents) could provide a basis for tailoring treatment models towards the specific needs of the individual.

The emerging self-report literature on relationships between attachment and psychotic phenomenology suggests that there may be links between specific attachment patterns and specific symptomatology. For instance, paranoia can be conceptualised as a hyper-activated orientation towards potential threat in the social environment (Gilbert, 2001), whereas Dismissing/avoidant attachment indicates a stance towards others where attachment concerns are minimised, often as a consequence of developmental experiences where the individual's own concerns have been minimised by attachment figures; thus leading to the individual to adopt

a stance towards the social environment where one cannot rely on others to assist them in times of threat.

Furthermore, conceptualising mentalisation as acting symbiotically with the attachment system has ramifications for understanding adaptation to psychosis. Negative interpersonal experiences during an individual's childhood and adolescence reduce opportunities to develop mentalisation skills, with the consequence that one's understanding of mental states is compromised. Therefore, when a distressing life event such as psychosis occurs, adaptation to the experience of psychosis (including integration of the experience of symptoms and treatment) may differ according to the degree of mentalisation skills possessed by the individual, Adaptation to psychosis may also differ by the degree to which the individuals can draw on an underlying sense of security. In particular, attachment security and higher levels of mentalisation should lead to better engagement with clinical services, and better adjustment to psychosis. Conversely insecure attachment, particularly dismissing states of mind should hypothetically link to poorer adaptation to psychosis, and less engagement as a consequence of minimising both the impact of psychosis, and awareness of affective dysregulation.

Secondly, the emphasis Bowlby gave to life events as threats to the integrity of the attachment system, particularly with regard to loss, separation and trauma, can be seen as equally relevant to the experience of and adaptation to psychosis. Patterson and colleagues (2000; 2005) have focussed on adapting attachment principles to understanding adaptation to the experience of psychosis within the family dyad, however if one constructs psychosis itself as a life event further predictions emerge. Again, attachment security and/or higher mentalisation should act as a buffer against the emergence of secondary difficulties (such as post-psychotic depression or post-psychotic PTSD) by facilitating the integration of the experience of psychosis, via the reflective understanding of interpersonal experiences inherent in autonomous attachment narratives and/or higher levels of mentalisation. In contrast, individuals with a preoccupied stance towards attachment may be at increased risk of secondary difficulties as the experience of psychosis may be overwhelming to the integrity of the attachment system, triggering the secondary experience of dysregulating affect.

The importance of life events may also impact on the epigenesis of psychosis via Birchwood's (2003) emotional dysfunction pathway. The literature reviewed above on loss, separation and trauma suggests, although not unequivocally, that such experiences are ontogenetically destabilising towards both the attachment and mentalisation systems. In particular, there are multiple points of contact between infant attachment disorganisation, the adult attachment sequelae of unresolved attachment states, dissociation and psychotic symptomatology. In addition,, Main, and colleagues (2005) note that infant disorganisation frequently 'resolves' to insecure/dismissing attachment in childhood and on to adulthood. It is also unclear as to how the impact of prototypical threats (and the experience of psychosis) to the attachment system may impact on insecure attachment organisations such as the above.

Finally, as attachment is a theory of help-seeking, it is plausible that adult attachment states of mind will have implications for duration of untreated psychosis, onset of difficulties, and adaptation in the first year (particularly with regard to helpseeking at times of heightened distress). This is of clear value to the understanding of FEP, given the close links between DUP and outcome, and also between premorbid functioning and outcome (see Chapter 3). The evidence reviewed in this chapter suggests that individuals with secure attachment and/or higher mentalisation will be able to access treatment quicker, thus truncating their DUP, and also manifest better engagement with clinical services after onset of symptoms. In contrast, one would expect that individuals with a dismissing stance will manifest a longer DUP, with potentially more formal routes into treatment (e.g. the use of Mental Health Act) and also be less likely to engage with services. Given the conflicted internal working model characteristic of preoccupied attachment individuals with this pattern may well access treatment effectively, however their adaptation to the experience of psychosis and the affective impact may predispose them towards a greater distress and an engagement pattern characterised by crisis. Finally, unresolved attachment representation may cut across the above organised patterns, especially as attachment disorganisation inhibits the psychological and

neurobiological systems responsible for mentalisation and attachment behaviours, posing particular problems for clinicians in containing individual's distress.

The above resume also generates a number of testable hypotheses regarding the function of attachment and mentalisation in FEP. Therefore, to conclude this chapter I offer a set of hypotheses pertaining to the relevance of attachment and mentalisation to psychosis. These hypotheses will be addressed in the following five chapters. Firstly, before exploring attachment in a clinical sample, the validity of attachment as a construct for investigating psychosis will be tested in a non-clinical sample. This study, using an analogue methodology will explore possible links between attachment and psychotic phenomenology (Study One, Chapter 6). (). The specific hypothesis to be tested is detailed below:

1) Differential patterns of attachment should associate with different patterns of psychotic phenomenology. Specifically, attachment avoidance will associate with higher endorsement of paranoid ideation; a relationship would be specific to paranoia, and not voice-hearing or overall delusional ideation (see Chapter 6).

The remainder of the hypotheses regarding attachment and mentalisation will be explored in Study Two, utilising a clinical sample of individuals experiencing a first episode of psychosis and receiving treatment from early intervention services. The hypotheses to be tested are as follows:

2) Attachment representations in psychosis are more likely to be insecure than secure, compared to a non-clinical group. In particular, one would expect a substantial proportion of individuals with psychosis to report dismissing attachment states of mind. However, the distribution will be more varied in a first episode group, compared to a repeat-episode sample.
3) There will be a higher proportion of unresolved classifications in an FEP sample compared to non-clinical samples, but not in comparison to a multi-episode sample.

4) Higher mentalisation (operationalised as reflective function, RF) will be associated with secure attachment status.
5) Individuals with secure attachment will have a shorter DUP, better help-seeking, and better premorbid social adjustment than individuals with an insecure attachment organisation.
6) Individuals with secure attachment will have significantly better engagement with clinical services than insecurely attached individuals.
7) Individuals with better reflective function will have better engagement with services
8) Individuals with better reflective function will have better psychological adjustment to a first episode of psychosis.

Section II:

First empirical study

Is it valid to investigate attachment in psychosis?

Chapter 6:

The association between attachment style, social mentalities and paranoid ideation

Introduction

Before proceeding to an empirical investigation of attachment representations in a first episode sample, it is first desirable to examine the validity of relating attachment constructs to psychosis. As discussed in the previous chapter (pp's 136 – 147) there is a paucity of studies exploring, the relevance of attachment to psychosis, however a growing number of studies have investigated links between attachment and psychotic phenomenology (e.g. Wilson &; Berry, Barrowclough, Wearden & Liveridge, 2006; Berry, Band, Corcoran, Barrowclough & Wearden, 2007; Meins, Jones, Fernyhough, Hurndall & Koronis, 2007; Pickering, Simpson & Bentall, in press). Using an analogue sample of non-clinical participants permits investigation of the veracity of the link between attachment and psychosis while not requiring the same level of clinical consideration before testing the veracity of the link in a clinical sample. Therefore, it is ethically responsible to investigate these variables in a non-clinical sample before moving on to a clinical investigation.

Several authors have investigated the link between attachment style and psychotic phenomena using a schizotypy model (e.g. Wilson & Costanzo, 1996; Berry et, al., 2006, 2007; Meins, et al. 2007); while a recent study suggested that self esteem mediated the relationship between attachment style and paranoia (Pickering et al., in press). As discussed in Chapter 4, in self-reported adult attachment style, there is a general consensus for two underlying dimensions – attachment anxiety and avoidance (Ainsworth, et al, 1978; Bartholomew & Horowitz's, 1991; Brennan & Shaver, 1998; Fraley & Waller, 1998). Adult attachment anxiety refers to an individual's self-worth, reflecting one's perceived acceptability, contrasted with rejection from others. Correspondingly, adult attachment avoidance denotes the degree to which one seeks (or avoids) intimacy and affiliation with close others (Collins & Feeney, 2000).

Bartholomew and Horowitz recast these dimensions in terms of attitudes to attachment held by the self, and expectations of others in their attachment behaviour. In this model, secure attachment reflects a positive representation of the self and significant other's. Preoccupied attachment style contrasts a positive model of others, with a negative model of the self. Contrary to previous conceptualizations of attachment (e.g. Hazan & Shaver, 1987, Main, et al., 1985), Bartholomew and Horowitz differentiated between dismissing attachment style (individuals comfortable without attachment relationships, possessing a positive model of self and negative model of others) and fearful attachment (individuals with a negative model of the self as vulnerable, and others as powerful and rejecting). However, confirmatory factor analysis of attachment self-report measures has failed to replicate this model (Kurdek, 2002).

Social mentalities, threat/safeness, and attachment

In contrast to the above conceptualisations, the current thesis has approached attachment from a psychodevelopmental perspective, rooted in the developmental psychology tradition of the SST (Ainsworth, et al., 1978) and the AAI (Main et al., 2002), which emphasises the evolutionary value of attachment. This creates a difficulty when using measures of attachment *style*, given their focus on current attachment related relational concerns. Therefore, the current study draws upon attachment style in conjunction with social mentality theory to access an evolutionary perspective on close interpersonal relationships, and psychotic phenomenology.

Gilbert (1989, 2001, 2005) conceptualizes the interplay in social situations between emotional, motivational, cognitive, and behavioural processes as reflections of underlying evolutionarily derived systems that shape relationships between the self and others. These social mentalities are implicated in caregiving, care-eliciting, formation of interpersonal alliances, social rank, and sexual behaviour. Social mentalities also have a critical role in appraising threat, enhancing safeness, and in regulating the affect associated with these fundamental evolutionary challenges.

From a developmental perspective, the infant relies upon the parent/carer to provide a sense of safeness and regulate associated arousal. When the parent is responsive to threatening or unusual situations, and capable of de-escalating threat, the infant feels safe and able to explore. Recast in social mentality terms, Bowlby's (1973) conceptualization of attachment as a control system governing safety seeking and exploration can be viewed as an interaction between care-seeking and care-eliciting social mentalities, unfolding between carer and infant. Secure attachment is therefore linked to safeness and thus serves to deactivate threat-based mentalities, with corresponding salutogenic effects upon psychobiosocial development (Schore, 2005a). By contrast, if the carer is unable to provide security, the affect regulating function of attachment breaks down, safeness cannot be guaranteed, and the threat social mentality remains active. Indeed, high levels of attachment insecurity lead to increased sensitivity to threat, with corresponding implications for interpersonal functioning at physiological, psychological, emotional, and behavioural levels (Gerhardt, 2004; Schore, 2005a). Thus social mentality theory encompasses both the development of specific attachment relationships, and the development of more general models of relationships. Importantly, the attachment system is active across the life-span (Bowlby, 1988), in situations where awareness of the need for safeness or the presence of threat is indicated. In adulthood, the activation of the attachment system is increasingly internalized via internal working models of the relational self and others (Main, Kaplan, & Cassidy, 1985). These develop over time as operational models that "*regulate, interpret and predict both significant other's and the self's attachment-related behaviour, thoughts and feelings*' (Bretherton & Munholland, 1999; p.89).

In contrast to previous measures of attachment style, Stein and colleagues (2002) presented an alternative theoretical conceptualization in their analysis of five self-report attachment measures. They proposed two underlying dimensional constructs – 'Security' and 'Strategies for dealing with Insecurity (in relationships)', postulating that as insecurity increases, so does the need for a cogent strategy to deal with insecurity. The concept of 'Attachment strategies' may therefore represent a rapprochement with social mentality theory. Ergo, in a specific interpersonal

situation, heightened attachment avoidance and anxiety patterns can be viewed as (potentially maladaptive) strategies to deal with insecurity in the absence of felt security or safeness.

'The paranoid mind'

Gilbert (2001) and Gumley and Schwannauer (2006) have contended that social mentalities are crucial in the development and maintenance of persecutory ideation and delusions. The latter authors propose the operation of an evolutionarily adaptive state of mind, functioning to optimize the likelihood of survival, via heightened sensitivity to social threat cues, leading to attentional and attributional biases (Morrison, Gumley, Schwannauer, Campbell, Gleeson, Griffin, et al., 2005). Survival is maintained at the cost of requiring the individual to be hypervigilant, mistrustful, avoidant, or aggressive towards individuals or organizations associated with threat cues. The resulting confluence of threat-specific processing, emotions, and behaviours is characterized as the 'paranoid mind'. In social mentality terms, a threat-based social mentality predominates in interpersonal relations. Gumley and Schwannauer (2006) also suggest that vulnerability to a paranoid social mentality would be increased by negative developmental experiences, particularly with attachment figures. Theoretically, attachment interactions between infant and caregiver characterized by neglect, avoidance, or rejection, would leave the infant less likely to experience safeness, and predisposed to maintain an orientation towards threat as a default mentality for social interactions. Although in the paranoid mind the threat-based orientation becomes generalized to multiple social domains, the context of attachment styles presents a specific example of this orientation.

Attachment theory and psychotic phenomena

Therefore, the following study is an investigation of psychotic phenomena in the context of attachment style and social mentality theory. The study had three aims. First, following Kurdek's (2002) factor analysis of the RSQ, e confirmatory factor analysis will be used to generate an optimum model for the attachment style data. collected. Secondly, hypothetical relationships between self-reported attachment status and psychotic phenomenology will be investigated. It was hypothesized that attachment avoidance would be associated with higher endorsement of paranoid

ideation. It was also hypothesized that this relation ship would be specific to paranoia, and not voice-hearing or overall delusional ideation. Finally, a measure of interpersonal problems (Inventory of Interpersonal Problems – 32 item version; Horowitz, Alden, Wiggins, & Pincus, 2000) was used to measure potentially maladaptive interpersonal behaviours. Consistent with social mentality theory, it was hypothesized that higher levels of distancing interpersonal problems (an orientation to interpersonal situations characterized by distancing and hostility) would be associated with higher paranoia scores and greater attachment avoidance.

Methodology

Participants

Two hundred and thirteen participants volunteered to take part in the study. All were university undergraduate students, with the exception of thirty-one participants who were in employment. The male: female ratio was 47:166. The mean age of the participants was 20.28 years (*SD* = 2.82; range = 17–33 years). Female participants were significantly younger than male participants (20.04 years of age versus 21.14 years, $t = 2.016$, $p = .048$).

Measurements

Relationship Styles Questionnaire (RSQ; Griffin & Bartholomew, 1994)

This is a 30-item scale concerning 'feelings about close relationships'. It contains items which measure attachment related concerns such as attachment avoidance - "I am comfortable without close emotional relationships" and attachment- anxiety - "I want emotionally close relationships". Statements are rated on a 5-point Likert scale – anchored at points 1, not at all like me; 3, somewhat like me, and 5, very much like me.

Inventory of interpersonal problems – 32 item Version (Horowitz et al., 2000)

The IIP-32 (Horowitz et al., 2000) is a 32-item self-report questionnaire, with 8 subscales. It contains 18 items preceded by the phrase 'It is hard for me to' (e.g. '. . . . . show affection to people') and 14 items describing interpersonal behaviours a person may do too much (e.g. 'I am too suspicious of other people'). Responses are recorded on a 5-point Likert-type scale. The scale scores for

Domineering/Controlling, Vindictive/Self-centred, Cold/Distant and Socially Inhibited behaviours were combined to give an overall score for distancing interpersonal problems. The scales for Intrusive/Needy, Non-assertive, Overly Accommodating, and Self-sacrificing behaviours were combined to give an overall score for Affiliating interpersonal behaviours. Consistent with the underlying model of the IIP (Horowitz et al., 2000), and social mentality theory, the aim was to create factors that reflect both difficulties in establishing and sustaining interpersonal relations (distancing behaviours), and difficulties in appropriately managing these relations (affiliation behaviours). Internal consistency for both scales was acceptable (α = .86 for both scales). The full 127-item IIP has been shown to yield a factor structure consistent with social mentality theory (Barkham, Hardy, & Startup, 1994); however, this has not to date been applied to the IIP-32.

Paranoia Scale (Fenigstein & Vanable, 1992)

The Paranoia Scale is a 20-item self-report measurement of thoughts, beliefs, and behaviours representative of the concept of paranoia. Responses are recorded on a five point Likert Scale. The measure was designed and validated for a college population (Fengistein & Vanable, 1992). It has been successfully used in studies of paranoia in nonclinical populations (e.g. Combs & Penn, 2004).

Launay-Slade Hallucination Scale – Revised version (Morrison, Wells, & Nothard, 2002)

This is a 20-item questionnaire measures predisposition to hallucinations in healthy individuals. Items are endorsed on a 4-point scale of frequency (1 = never, 2 = sometimes, 3 = often, 4 = almost always). It has three underlying factors measuring vividness of imagination and predisposition towards auditory and visual hallucinations.

Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983)

This measure is an extensively validated 14-item questionnaire, developed to assess symptoms of anxiety and depression in non-clinical populations. Psychometric analysis suggests two underlying factors – anxiety and depression (Bjelland, Dahl, Haug, & Neckelmann, 2002).

Peters Delusion Inventory (Peters, Joseph, Day, & Garety, 2004)

This is a 21-item self-report scale designed to measure delusional ideation in the normal population. It assesses presence/absence and three dimensions of delusions (distress, preoccupation, and conviction) using a 5-point Likert scale. It has good psychometric properties including internal consistency, test–retest reliability, and concurrent validity.

Procedure

A cross-sectional correlational design was used to compare the self-report measures. All participants were fully informed of the nature of the study, and consented to participation (See Appendices 3 & 4). Measurements were administered as a single 'pack', and completed in the order listed above. All questionnaires were completed in one session, took approximately 30 minutes to complete, and were returned by mail to the researcher.

Data collection took place between August 2005 and April 2006.

Statistical analyses

The primary analytic method chosen for this study was structural equation modelling (SEM) using EQS version 6.1 (Bentler, 1996). Advantageously, SEM permits simultaneous assessment and prediction of several dependent variables within a single model. This methodology was applied to calculate confirmatory factor analyses testing alternative hypothesized models of fit of the dimensional structure of the RSQ, and to assess the impact of a number of predictors on paranoia, hallucinations, and emotional distress. SEM is a hypotheses testing or confirmatory approach to data analysis where a theoretical model of the relationship of dependent and predictor variables is hypothesized and subsequently tested to ascertain how well the model 'fits' the data. All other statistical analyses were completed with SPSS Version 11.5 (SPSS Corp, Chicago). Some variables were found to be non-normally distributed; therefore non-parametric analyses were used where appropriate. As expected in non-clinical populations the main dependent variables of Paranoia, Hallucinations, and Delusions showed moderate positive skew and the variables of Hallucinations and Delusions showed moderate kurtosis. Within the SEM robust model statistics are reported that are corrected for nonnormal distributions.

Goodness of fit of all models was evaluated using the Satorra–Bentler robust fit statistics: The Satorra–Bentler χ^2 (S-B χ^2) and the Robust Comparative Fit Index (RCFI; Bentler, 1998). The chi-squared is the most commonly used measure of model fit and assesses the model's 'badness of fit' – a high chi-squared value with a significant *p* value suggests a poor fit of the model to the data. The RCFI ranges from 0 to 1 with values greater than 0.90 indicating a good fit. The Root Mean Square of Approximation (RMSEA; Browne & Cudeck, 1993) is a measure of fit that takes into account a model's complexity where a RMSEA of 0.05 or less indicates a good model fit.

Results

Characteristics of sample

An analysis by gender is detailed in Table 6.1. Scores on the anxiety subscale of the HADS were notably higher than expected, the mean score for Anxiety being 8.19 (*SD* = 4.25), although the depression score was relatively low (mean score = 3.15, *SD* = 2.80). Female participants had significantly higher scores on the HADS anxiety subscale, compared with their male counterparts (mean = 8:53 versus 7.00; independent samples *t* test, *p* = .04). Although the clinical threshold for Anxiety was initially set at > 8 (Zigmond & Snaith, 1983), Crawford, Henry, Crombie, and Taylor (2001) suggested a conservative cut-off of >10 should be adopted for the HADS anxiety subscale. Therefore, HADS anxiety was included as a covariate to control for the possibility that generalized anxiety was a confound of attachment anxiety. There were no other significant differences between genders (Table 6.1).

Table 6.1: Analysis by gender

	Total Sample (n=213)	Male (n=47)	Female (n=166)
Age (s.d., range)	20.29 (2.83, 17 – 33)	21.15 (3.51, 18 – 31)	20.04 (2.57, 17 – 33)
Paranoia Scale Total Score (s.d., range)	16.75 (11.91, 0 – 54)	16.43 (12.76, 0 – 54)	16.84 (11.70, 0 – 50)
PDI Total Score (s.d., range)	5.54 (3.76, 0 – 20)	5.43 (3.79, 0 – 14)	5.57 (3.77, 0 – 20)
LSHS Total Score (s.d., range)	11.85 (9.26, 0 – 43)	12.49 (10.21, 0 – 36)	11.66 (9.01, 0 – 43)
IIP-32 Total Score (s.d., range)	77.81 (32.45, 6 – 158)	78.26 (32.20,12 – 144)	7.69 (32.62, 6 – 158)
RSQ Avoidance Score (s.d., range)	16.80 (4.26, 7 – 28)	16.87 (4.61, 8 – 28)	17.61 (4.97, 7 – 32)
RSQ Anxiety Score (s.d., range)	8.64 (3.06, 4 – 17)	8.85 (3.56, 4 – 17)	8.58 (2.93, 4 - 17)
HADS Anxiety Score (s.d., range)	8.19 (4.25, 0 – 19)	7 (4.61, 0 – 19)	8.53 (4.10, 0 – 19)
HADS Depression Score (s.d., range)	3.16 (2.80, 0- 34)	3.66 (3.02, 0 – 15)	3.01 (2.73, 0 – 12)
HADS Total Score (s.d., range)	11.35 (6.3, 0 – 34)	10.66 (6.87, 1 – 34)	11.54 (6.15, 0 – 26)

Psychometric properties of the RSQ

Consistent with previous explorations of the psychometrics of the RSQ (Kurdek, 2002), a series of measurement models were tested (see Table 6.2) using confirmatory factor analysis. With the exception of Magai, Consedine, Gillespie, O'Neal, and Vilker's (2004) model, the first six models were direct replications of Kurdek's item selections. Model 1 was based on the Hazan and Shaver (1987) three-factor model (secure items: 10, 13, 15, 23, 30; avoidant items: 1, 12, 24, 29; anxious/ambivalent items: 4, 11, 18, 21). A similar three-factor model applied by Magai and colleagues (2004) was the second model tested. Model 3 reflected items drawn from the Collins' (Collins, 1996; Collins & Read, 1990) Adult Attachment Scale (Dependence items 1, 7, 10, 12, 17, 27; anxiety items 4, 11, 18, 21, 23, 25; closeness items 13, 15, 20, 24, 29, and 30). Model 4 replicated Griffin & Bartholomew's (1994) original four-factor structure (secure items 3, 9, 10, 15, and 28; fearful items 1, 5, 12, and 24; preoccupied

by items 6, 8, 16, and 25; and dismissing by items 2, 6, 19, 22, and 26; with item 6 loading on two factors according to direction of scoring). Model's 5a (Simpson, Rholes, & Nelligan, 1992), and 5b (Feeney & Nohaus, 2001), were based on Simpson et al's two-factor model. Both models involve two factors: Anxiety (items 11, 18, 21, 23, and 25; or items 5, 7, 9, 11, 12, 13, 16, 17, 18, 21, 23, 25, and 28 respective of each model) and Avoidance (items 10, 12, 13, 15, 20, 24, 29, and 30; or items 1, 2, 3, 4, 6, 8, 10, 14, 26, and 30).

In the initial factor analysis none of the above measurement models were a satisfactory fit to the proposed theoretical models. Out of these six initial models, only Model 5a approached an appropriate level of fit. Scrutiny of the Wald test (for deletion of unnecessary parameters) suggested removal of item 21 on the Anxiety scale would improve the overall fit of the measurement model to the theoretical structure (Model 6a). After running Model 6a further examination of the data suggested that removing item 15 and permitting the two factors to covary would maximize the fit of the measurement model to the theoretical model. The subsequent model (Model 6b) provided optimum goodness of fit and was adopted as the RSQ factor structure for the following analyses. Internal consistency (Cronbach's alpha) was rated as α = .68 for Attachment Anxiety and α = .78 for Attachment Avoidance, and α = .77 for all items used in the final model. The comparatively lower rating for attachment anxiety perhaps reflected the low number of items in the scale. Although both scales were moderately intercorrelated (Pearson correlation, r = 407, p = .01), the correlation was lower than the between factor correlation for the similar two-factor solution reported by Kurdek (2002).

Attachment style, interpersonal problems, and non-clinical psychopathology

There were positive associations between interpersonal problems and both attachment anxiety and attachment avoidance (see Table 6.3). However, when HADS anxiety was controlled for the relationship between attachment avoidance and interpersonal affiliating was no longer significant. Similarly, there were significant positive correlations between the attachment factors and HADS subscale and total scores. When the analysis was repeated controlling for HADS anxiety, there was no longer a significant relationship between attachment anxiety and HADS depression.

Although the correlation dropped markedly, the relationship between attachment avoidance and HADS depression remained significant.

Paranoia

In this model, the Paranoia Scale (Fenigstein & Vanable, 1992) was the dependent variable. After scrutiny of the EQS correlation matrix, it was hypothesized that Paranoia was predicted by the interpersonal variables Distancing and Affiliation (IIP), Attachment Anxiety and Avoidance (RSQ), and Psychological Distress, Anxiety and Depression (HADS). Additionally, following scrutiny of the correlation matrix it was hypothesized that interpersonal problems with closeness and attachment anxiety would not *directly* predict paranoia. Therefore, SEM was used to assess the fit of the specific hypothesized model predicting that Interpersonal Distancing mediates the relationship between Attachment Avoidance and Paranoia, while Interpersonal Affiliating mediates the relationship between Attachment Anxiety and Psychological Distress (measured using the HADS). In this model the variables Attachment Anxiety and Attachment Avoidance as well as Psychological Distress and Paranoia were correlated. This model had a relatively poor fit: S-B χ^2 = 82 (p = .001) with a RCFI = 0.828 and a RMSEA = 0.120.

Table 6.2: Models and Confirmatory Factor Analysis fit statistics for RSQ data.

Model	S-B x^2	df	p	RMSEA (CI)	AIC	RCFI
1: 3-factor model (Hazan & Shaver)	356.49	65	0.0000	.145 (.130 - .160)	226.49	.550
2: 3-factor model (Magai)	213.59	54	0.0000	.118 (.101 - .134	105.59	.710
3: 3-factor (Collins & Read)	423.48	135	0.0000	.100 (0.89 – 1.11)	153.47	.736
4: 4-factor (Griffin & Bartholomew)	547.42	104	0.0000	.142 (.130 - .153)	339.42	.428
5a: 2- factor (Simpson)	160.04	65	0.0000	.83 (0.67 – 0.93)	30.04	.858
5b: 2-factor (Feeney & Nohaus)	827.83	253	0.0000	.111 (.102 - .119)	367.83	.622
6: 2 factor (factors permitted to co-vary)	75.76	43	0.00150	.060 (0.37 - .082)	-10.24	.927

Table 6.3: Correlations of RSQ factors to psychopathological phenomena variables.

Measure	N	RSQ Anxiety[a]		RSQ Avoidance[a]		RSQ Anxiety (partial correlation for HADS Anxiety)		RSQ Avoidance (partial correlation for HADS anxiety)	
		r	*p*	*r*	*p*	*r*	*p*	*r*	*p*
IIP Distancing[a]	213	**.448**	**.000**	**.576**	**.000**	**.295**	**.000**	**.501**	**.000**
IIP Affiliative	213	**.449**	**.000**	.215	.002	**.389**	**.000**	.127	.066
Paranoia total score[a]	213	**.516**	**.000**	**.516**	**.000**	**.330**	**.000**	**.376**	**.000**
LSHS total score[a]	213	**.304**	**.000**	**.237**	**.000**	.161	.019	.148	.032
PDI total score	213	**.343**	**.000**	**.320**	**.000**	**.262**	**.000**	.164	.017
HADS Anxiety score[a]	213	**.321**	**.000**	**.322**	**.000**				
HADS Depression Score[a]	213	**.337**	**.000**	**.431**	**.000**	.098	.154	**.290**	**.000**
HADS Total score[a]	213	**.366**	**.000**	**.401**	**.000**	.098	.154	**.290**	**.000**

[a] Non-parametric variable. Items in bold denote significance at p <0.01.

Based on the intercorrelation of Attachment Anxiety and Attachment Avoidance and the lack of correlation between Paranoia and Psychological Distress an alternative model was hypothesized where the relationship of Paranoia and the latent variable of Attachment is mediated by Interpersonal Distancing (Figure 6.1). This model had a good fit to the data: S-B χ^2 = 9.49 (p = .147); RCFI = 0.985; RMSEA = 0.052. In this model, Paranoia is predicted by attachment, with interpersonal distancing contributing additional predictive value due to its strong association with the attachment factor.

Hallucinations

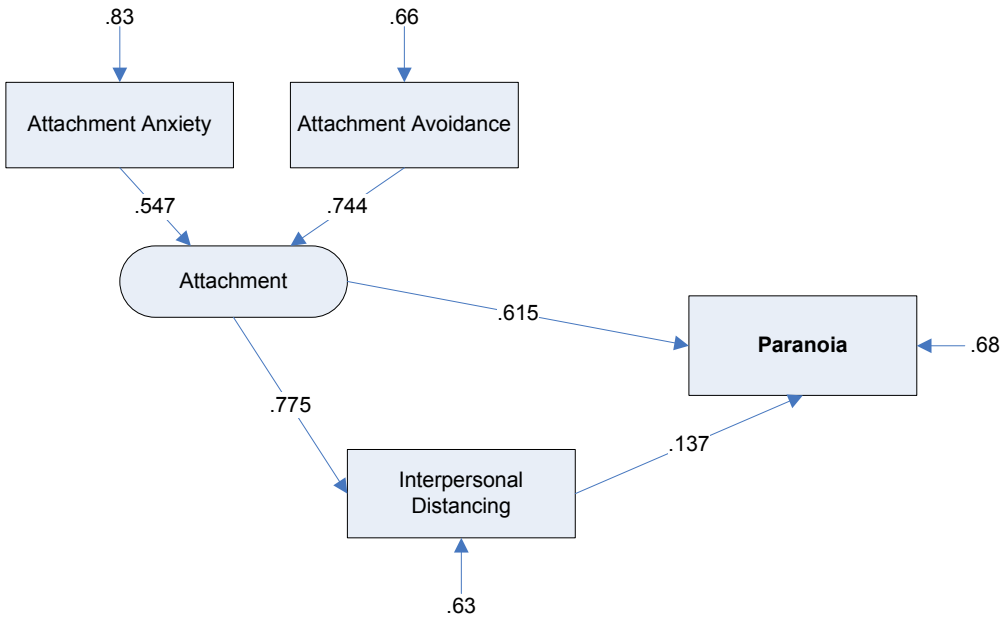
In this model, it was hypothesized that both attachment and interpersonal difficulties predict Hallucinations, with their relationships being mediated by levels of Psychological Distress. In the original model, all possible paths between predictor variables and Hallucinations were included, producing a very poor fit: S-B χ^2 = 128.82 (p = .001); RCFI = 0.685; RMSEA = 0.182. However, this highlighted a strong association between Attachment Anxiety and Interpersonal Affiliating, and between Attachment Avoidance and Interpersonal Distancing. Therefore, two latent factors were constructed ('Dependence' and 'Avoidance') which were then related to Hallucinations with the hypothesized mediators of Depression and Anxiety (Figure 6.2). This model had an excellent fit: S-B χ^2 = 15.70 (p= .152); RCFI = 0.982; RMSEA = 0.045. In the detailed results for this model it was found that Avoidance predicted Hallucinations without an added mediating effect of psychological distress, whereas the relationship of Dependence was mediated by Anxiety. As expected, Dependence and Avoidance were strongly associated factors.

Delusions

Finally, the strength of the factors in predicting a generalized delusional ideation (as opposed to specifically paranoid ideation) was investigated, using total score on the Peters Delusion Inventory (Peters, et al., 2004) as the dependent variable, with the same predictor variables. As a specific model was not hypothesized for differentiating the effects of specific attachment and interpersonal problems dimensions, the first model tested assumed a direct correlation between delusional

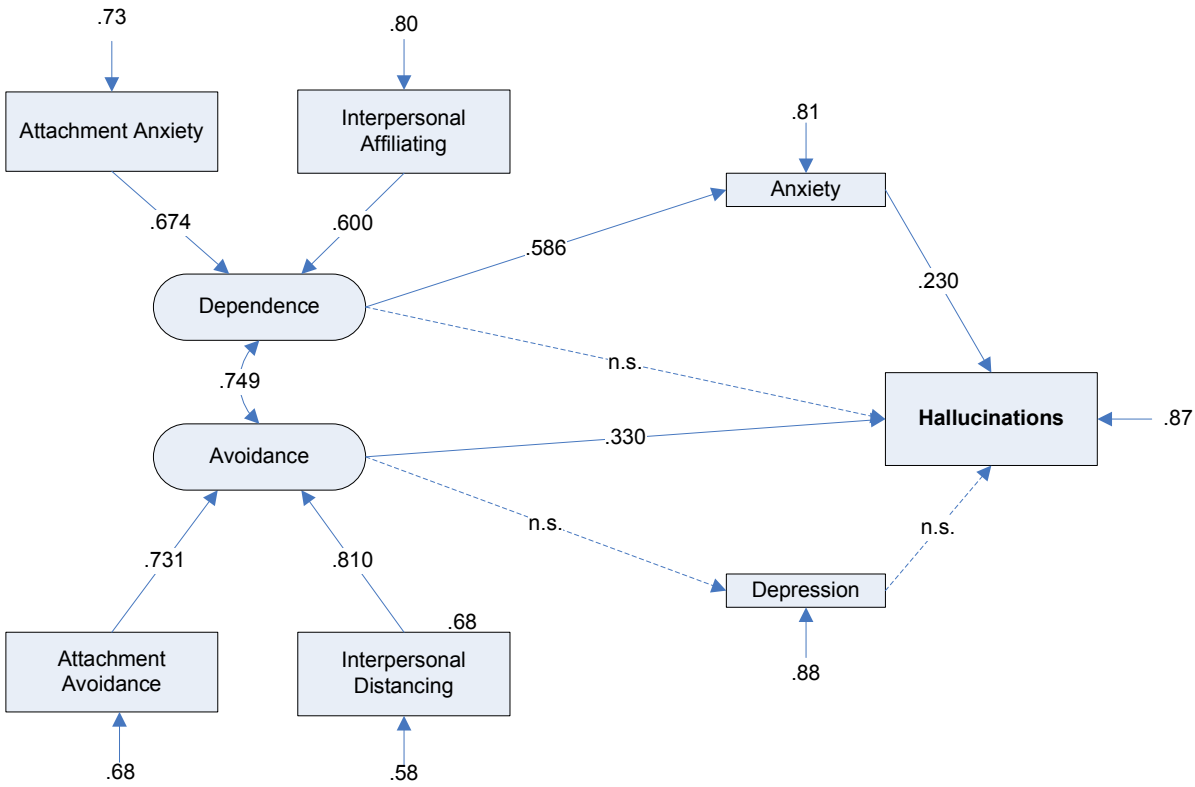
ideation and psychological distress. In keeping with the model derived for paranoid ideation, it was also hypothesized that attachment style would predict delusional ideation, mediated by interpersonal problems. This model had a very poor fit: S-B χ^2 = 181.26 (p .001); RCFI = 0.589; RMSEA = 0.172. Based on the models for paranoia a model was then hypothesized assuming a strong predictive effect of attachment mediated by both emotional distress and interpersonal difficulties. This model reached borderline fit indices but displayed poor overall fit to the data: S-B χ^2 = 60.30 (p = .0009); RCFI = 0.907; RMSEA = 0.082. However, it is interesting to note that in the instance of general delusional ideation as opposed to paranoia there is a clear direct predictive effect from the attachment variable without mediation effects.

Figure 6.1: Path model for relationship of attachment style and interpersonal distancing to paranoia



Model fit: S-B χ^2 = 9.49 (p = 0.147); RCFI = 0.985; RMSEA = 0.052.

Figure 6.2: Path model for relationship of attachment and interpersonal problems to predisposition to hallucinations.



Model fit: S-B χ^2 = 15.70 (p = 0.152); RCFI = 0.982; RMSEA = 0.045.

Discussion

The current study supported evidence (Ainsworth et al., 1978; Berry et al., 2006; Brennan et al., 1998; Kurdek, 2002) for two distinct dimensional components underpinning the attachment system: attachment avoidance and attachment anxiety. The findings corresponded with Kurdek's recommendation that the RSQ should be scored according to this two-dimensional model. Using covariance modelling, significant relationships were found between both attachment and interpersonal distancing, and paranoia. However, the data did not produce a similar model for general delusional ideation, suggesting the model is specific to paranoid ideation. For hallucinations, the data suggest that attachment and interpersonal problems combine to form 'avoidance' and 'dependence' constructs. Avoidance directly predicts hallucinations, while dependence is mediated by overall anxiety.

With regard to paranoia, the findings are consistent with Bentall and colleagues' (2001) speculation that insecure attachment, particularly dismissing/avoidant attachment, may influence the development of later paranoid ideation. However, the data expand this proposal, suggesting that the phenomenology of paranoid ideation involves *both* insecure attachment and threat-based social mentalities – therefore there is an impact of insecurity in close relationships, and also a lack of safeness in general relationships, consistent with a threat based social mentality. Perhaps both insecure attachment and interpersonal distancing reflect the operation of social mentalities in situations where interpersonal safety cannot be guaranteed. If one construes attachment as representing a sense of safeness provided by feeling connected to significant others (Bowlby, 1988), the absence of access to safeness necessitates attendance to the threat posed by others. Thus, the threat system is activated as a fall-back strategy. Considering the data, insecure attachment may reflect the cognitive and emotional components of this lack of safety, while interpersonal distancing reflects the behavioural strategies employed – distancing, dominating, and aggressive behaviours. This strategy, although employed to cope with a suboptimal interpersonal environment, unfortunately serves to reinforce the sense of interpersonal threat. In the absence of a sense of safeness and security, the threat-based social mentality (Gilbert, 1989) remains 'on-line' and active. This proposition is consistent with Gumley & Schwannauer's (2006) concept of 'the paranoid mind', while also congruent with Stein and colleagues (2002) observation of 'Strategies for dealing with Insecurity (in relationships)'. The conjunction of attachment and interpersonal distancing may therefore represent a coherent strategy to deal with a (perceived) interpersonal environment characterized by the lack of a feeling of safeness, with paranoia an unwelcome consequence of this strategy.

Contrary to predictions, significant relationships between the key variables emerged for predisposition to hallucinations. Attachment and interpersonal problems combined to form latent constructs representing 'avoidance' and 'dependence'. These constructs both predicted predisposition to hallucinations, directly in the case of avoidance, while the dependence pathway was mediated by overall anxiety. Unlike the findings for paranoia, the attachment avoidance and attachment anxiety map on to separate factors. This separation of factors is reminiscent of 'disorganized'

attachment, a situation whereby the individual vacillates between anxiety regarding rejection or abandonment; and avoidance where the fear is of being controlled or dominated. A social mentality perspective on attachment disorganisation suggests that attachment disorganisation leads to simultaneous activation of incompatible psychological systems of attachment and fight/flight (Liotti, 2004 a,b) – or "*fright without solution*" (Main & Hesse, 1990; p.163). Disorganized attachment in infants and adults has been repeatedly linked to the experience of trauma (Solomon & George, 1999), and development of complex psychopathology (e.g. Liotti, 2000). Furthermore, evidence increasingly suggests a link between trauma and subsequent predisposition to auditory hallucinations (Read et al., 2005). The hallucinations model may reflect mutually incompatible interpersonal strategies (mediated by anxiety in the case of dependence), combining attachment and social mentalities, which represent distinct psychological pathways towards predisposition to hallucinations. Indeed, Liotti (1995, 2004a, b) has suggested that attachment disorganisation in infancy leads to an adult model of attachment which, under stress, reflects the operation of fragmented, incompatible models of self and others,, which serve to overwhelm an individual's sense of coherence. One possibility is that the predisposition to hallucinations is an external interpretation of the individual's experience of incompatible internal working models. This model also echoes the findings of Birchwood and colleagues (2004), linking threat-based social mentalities in interpersonal relationships with distress in voice hearing. Given that this is the first study to show a relationship between attachment style and predisposition to hallucinations, this finding is in pressing need of replication.

Attachment style in this instance refers to the self-report of current attitudes towards attachment relationships. Therefore, although a developmental stance is the most theoretically valid approach, the attachment measure used cannot capture the representation of developmental experiences of attachment. Nor can it be said that attachment (in)security is causal in the development of psychotic phenomenology. However, both models are consistent with the theoretical predictions made by both social mentality and attachment theory.

The results are subject to several additional caveats. The study used an analogue sample, thus caution is urged in extrapolating to clinical samples. The use of a self-report attachment style measure is also less robust than an interview-based measurement of attachment (e.g. the AAI). Although more expensive in terms of time and resources, an interview offers the optimal measure of individual attachment status, circumventing the problem of reliance on self-report when an individual may not consciously be aware of underlying attachment processes (Crowell, et al., 1999). Following Dozier's (1990) observations, this distinction is particularly relevant to psychosis, as Dismissing states of mind in the AAI are assessed mainly via the structure of the discourse rather than self-reported attachment status. Using self-report measures, individuals with a dismissing stance towards attachment may report as 'false' secure, as their overt model of self precludes awareness of attachment insecurities. Furthermore, the AAI emerged from the developmental attachment research tradition (e.g. Ainsworth et al., 1978), assessing retrospective recollections and feelings about experiences with attachment figures. If (insecure) attachment is associated with the development of a threat-based social mentality, and later psychopathology, a developmental measure of attachment would be a more appropriate methodological approach.

In summary, this chapter provides preliminary evidence of an association between attachment insecurity, a threat-based social mentality, and psychotic phenomenology. This relationship appears particularly strong with regard to paranoid ideation. A novel theoretical model has been proposed for these results, which requires replication in a clinical sample, with a more robust measure of attachment representations. Importantly for the current thesis, this study also confirms the conceptual validity of investigating attachment in psychosis, via an investigation of psychotic phenomenology. Therefore, following chapters will comprehensively characterise a first episode psychosis cohort, including analysis of attachment and mentalisation. Furthermore, these chapters will build on the current study by using the AAI to access a more detailed developmental representation of attachment states of mind.

Section III:

Second Empirical Study

Is attachment of clinical value in understanding psychosis?

Chapter 7:

Glasgow-Edinburgh First Episode Psychosis Pilot Study: Design and methodology

Having established the conceptual validity of applying attachment theory to the understanding of psychosis, via the theoretical integration in Chapters 4 and 5, and the analogue study in Chapter 6, the second aim of this thesis is to build on this link by characterising attachment states of mind and mentalisation in a clinical sample of individuals undergoing treatment for a first episode of psychosis (FEP). To date, only one study has investigated attachment in FEP (Cotoure, et al., 2007), utilising a self-report methodology. The following clinical study will extend the investigation of attachment representations in FEP by using the 'gold standard' Adult Attachment Interview (AAI; Main, et al., 2002) – the first study to do so in an FEP sample. This clinical sample will be drawn from a cohort of 64 individuals receiving treatment for a first episode of psychosis in two Scottish cities. The methodology of the study is embedded in a pragmatic design, sensitive to the needs of participants and clinicians. The current chapter outlines this methodology in detail.

Although the aim of the study is to investigate psychosis in FEP, following the critical review of duration of untreated psychosis and premorbid adjustment in Chapter 3, it is of importance to also consider the relationship of these psychologically informed variables to symptomatology and psychological functioning in a clinical sample. In addition, the sample will also be characterised in terms of engagement with clinicians after onset of treatment. This wide-ranging characterisation of the sample is necessary to allow comparison of this cohort with contemporaneous FEP samples. These variables will be explored in detail in Chapters 8 and 9. The hypotheses to be investigated are those listed at the conclusion of Chapter 3. To recap these are:

1) Increased Positive psychotic symptomatology will be associated with DUP but not premorbid adjustment.

2) Greater Negative symptomatology will be associated with poorer premorbid adjustment but not DUP.

3) Poorer Premorbid adjustment will be associated with greater General Psychopathology.

4) Longer DUP will be associated greater with General Psychopathology.

5) DUP and premorbid adjustment will not be significantly associated with each other.

6) Poorer premorbid adjustment will be associated with diminished quality of life.

7) Longer DUP will be associated with diminished quality of life

8) Shorter DUP will be associated with greater helpseeking during the DUP.

9) Longer DUP will be associated with poorer engagement with clinical services.

10) Poorer premorbid adjustment will be associated with poorer engagement with clinical services.

Finally, consistent with the theoretical integration introduced in Chapter 5 (see pp's 122 – 165), Chapter 10 concludes the clinical study by focussing on the putative role of attachment and mentalisation as explanatory constructs for understanding individual differences in help-seeking prior to initiation of treatment for psychosis; and post onset of treatment, individual differences in engagement with clinical services. In addition, the relationship of attachment and mentalisation to symptomatology and psychological functioning will be examined. The hypotheses to be evaluated are those delineated at the end of Chapter 5, and for ease of reference will be referred to as the "attachment hypotheses". To recap these are:

1) Attachment representations in psychosis are more likely to be insecure than secure, compared to a non-clinical group. In particular, one would expect a substantial proportion of individuals with psychosis to report dismissing attachment states of mind. However, the distribution will be more varied in a first episode group, compared to a repeat-episode sample.
2) There will be a higher proportion of unresolved classifications in an FEP sample compared to non-clinical samples, but not in comparison to a multi-episode sample.
3) Higher mentalisation (operationalised as reflective function, RF) will be associated with secure attachment status.
4) Individuals with secure attachment will have a shorter DUP, better help-seeking, and better premorbid social adjustment than individuals with an insecure attachment organisation.
5) Individuals with secure attachment will have significantly better engagement with clinical services than insecurely attached individuals.
6) Individuals with better reflective function will have better engagement with services.
7) Individuals with better reflective function will have better psychological adjustment to a first episode of psychosis.

Study Design, Inclusion criteria and identification of potential participants

Design

The clinical study utilised a cross-sectional cohort design to characterise individuals presenting to specialised early intervention for psychosis services in two Scottish cities, Glasgow and Edinburgh. Individuals were in their first year of treatment for FEP. Participants were identified from all new clients accepted into ESTEEM Glasgow NHS Early Intervention Service and NHS Lothian Early Psychosis Support Service (EPSS). Individuals were also recruited from adult mental health services in the NHS Lothian catchment area. Recruitment was accomplished in two waves: firstly a pilot sample of consecutive referrals between November 2004 and October 2006, from ESTEEM Glasgow (then ESTEEM North Glasgow), and from EPSS were scrutinised for suitability. A further 31 individuals were recruited as part of the Glasgow-Edinburgh

First Episode Psychosis Study (Gumley et al, 2006; Chief Scientist Office: Scottish Government. Grant Reference Number CZH/4/295). This study commenced recruitment across ESTEEM Glasgow, EPSS and NHS Lothian adult mental health services in November 2006. In collaboration with the aforementioned NHS teams, the research protocol was implemented by researchers from the University of Glasgow and the University of Edinburgh. The author was responsible for the administration of all research measures in the Glasgow pilot sample.

Inclusion criteria

a) in the first 12 months of treatment by an early intervention service for first episode psychosis..

b) experiencing a first episode of psychosis; defined as presentation to clinical services with psychotic symptoms for the first time, with positive psychotic symptoms of sufficient severity and/or distress to require antipsychotic medication.

c) met DSM-IV criteria for schizophrenia, schizophreniform disorder, schizoaffective disorder or delusional disorder, bipolar disorder (American Psychiatric Association, 1994).

d) substance misuse, head injury or organic disorder *not* judged to be the primary cause of psychotic symptoms.

e) capacity to consent.

Patients legally detained in hospital were eligible to be considered for participation in the study.

Identification of participants

All new referrals accepted by the clinical team (after initial clinical assessment) were scrutinised for suitability for the study, initially in the context of formulation at 6 weeks in service. Suitable participants were identified by the relevant keyworker, Registered Medical Officer (RMO), team Clinical Psychologist, and the research

team. Eligibility by DSM-IV criteria was agreed by consultation between research team and RMO and capacity to consent was included in the assessment of suitability for inclusion. Keyworker, RMO, and Clinical Psychologist were encouraged to reach a consensus agreement on an individual's capacity to consent. To maximise likelihood of successful consent, suitability for participation was not governed by a participant's suitability for *immediate* approach for consent. Therefore, a potential participant could be assessed as likely to be suitable to approach in the *future*, although at formulation they were not fit to consent. Thereafter, suitability for consent was revisited on a monthly basis.

Ethical Approval

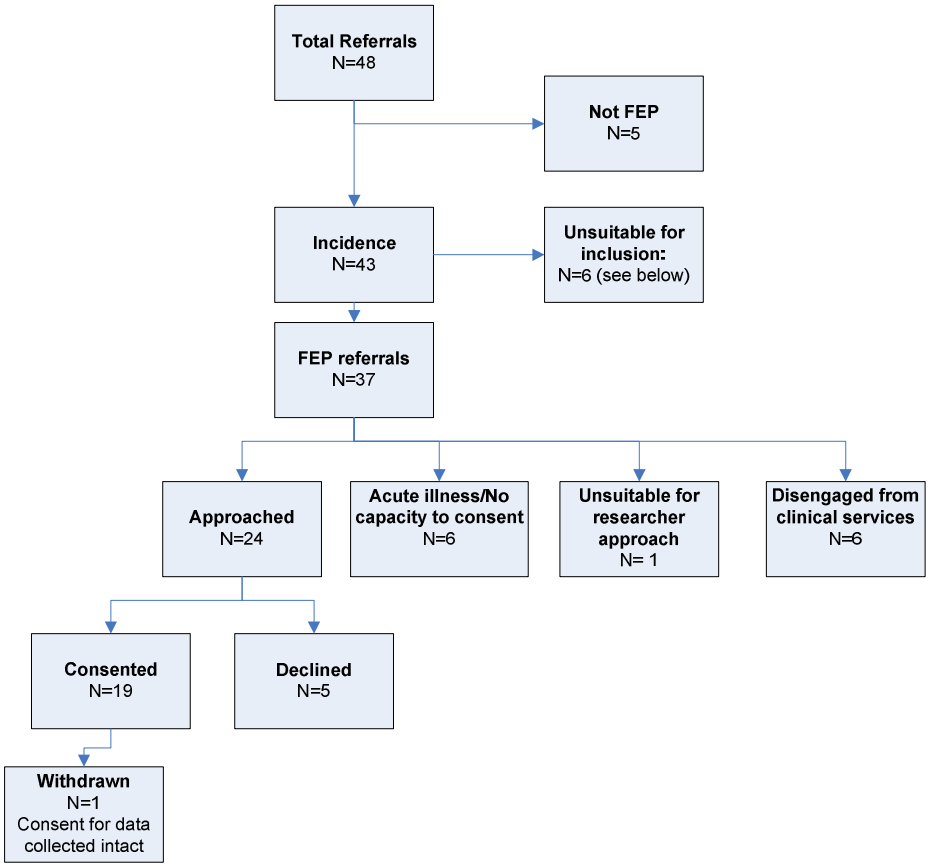
The study received review and ethical approval from Greater Glasgow and Lothian Research Ethics Committees, and received managerial approval from the local Research and Development Departments in Lothian and Glasgow (See Appendices 5 & 6).

Sample selection

Participant flow of individuals into the study for both ESTEEM Glasgow early intervention service, and EPSS adolescent early psychosis service are detailed in Figures 7.1 and 7.2. In total, seventy-three individuals were referred to the research study from these two sites. Of these referrals, eleven individuals were excluded on the grounds of not experiencing a first episode of psychosis, leaving sixty-two individuals. Of those individuals a further eight were excluded due to presence of comorbid learning difficulties, transfer out with geographical area, or in the case of one individual being outwith the age range for acceptance by the clinical team. This left a recruitment pool of 54 individuals. Nine individuals could not be approached due to disengagement from treatment team – precluding contact being made by the research team. One individual could not be approached due to their personal circumstances, and a further 6 individuals remained acutely unwell for the duration of the recruitment timeframe. Of the 38 individuals approached five declined

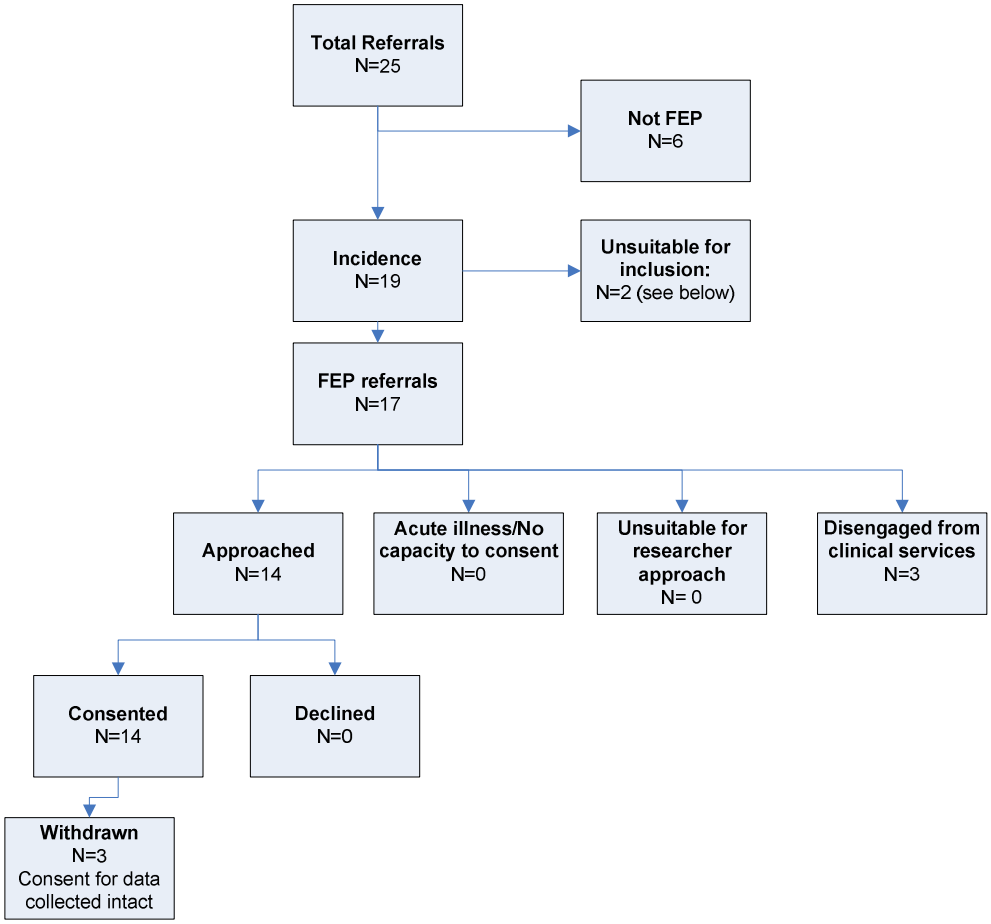
consent, leaving a final sample of 33 individuals. In addition, four individuals later withdrew from the study, but did not withdraw consent to use their data. Given the small sample size, permission was also granted to include data from the first thirty-one consented individual's from the Glasgow-Edinburgh First Episode study (Gumley et al 2006; CSO Grant Reference Number CZH/4/295). Both studies used identical measures and procedures, although in contrast to the first studies' cross-sectional methodology, the Glasgow-Edinburgh Study used a longitudinal design, measuring clinical variables at initiation of treatment for FEP, 6-months after onset of treatment, and 12 months after onset of treatment. For these individuals, 6-month follow-up data was used for clinical and psychological variables.

Figure 7.1: Pathway of participants from ESTEEM Glasgow into pilot study



Individuals unsuitable for inclusion: Transferred out of geographical area (n=3); Comorbid learning difficulties (n=3)

Figure 7.2: Pathway of participants from EPSS Edinburgh into pilot study



Individuals unsuitable for inclusion: Comorbid learning difficulties (n=1), Outside service age range (n=1).

Study Measures

Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987)

The PANSS is a 30 item semi-structured interview of psychotic symptomatology, yielding scores on three factors: positive symptoms, negative symptoms, and general psychopathology. Each item is scored on a 7-point Likert scale from minimal (1) to extreme (7). Seven items assess positive symptomatology encompassing delusions, conceptual disorganisation, hallucinations, excitement, grandiosity, persecutory beliefs and hostility. Seven items measure negative symptomatology encompassing blunted affect, social withdrawal, emotional withdrawal, poor rapport, difficulty in

abstract thinking, lack of spontaneity, and stereotyped thinking. The remaining sixteen items measure general psychopathology encompassing somatic concern, anxiety, guilt, tension, unusual mannerisms/posturing, depression, diminished motor activity/speech, uncooperativeness, unusual/bizarre thought content, disorientation, poor attention/concentration, lack of insight, disturbance of volition (ambivalence), poor impulse control, preoccupation and active social avoidance. Peralta and Cuesta (1994) analysed the psychometric properties of the PANSS, using a clinically relevant sample (n=100). Scores on positive and negative subscales were found to be independent of each other and showed good inter-rater reliability. Both positive and negative scale scores displayed high concurrent validity.

WHOQOL-BREF (WHOQOL Group, 1998)

The World Health Organisation Quality of Life measurement (Abbreviated version) is a 26 item self-report questionnaire assessing a respondent's quality of life across physical, psychological, social relationships and environmental domains. Significant correlations have been observed between the measure and clinical rated quality of life in psychosis (Herrmann et al, 2002; Becchi et al, 2004). Internal consistency of domain scores is generally good (Cronbach's α; r =. 68 - .97), and test-retest reliability is excellent (r = .83 - .86).

Beck Depression Inventory – IA and II (BDI IA; BDI-II) (Beck & Steer 1993; Beck, Steer & Brown, 1996);

Both the BDI-I and the BDI-II are 21 item self-report measurements of depression severity. Regarding the BDI-II, in a sample of outpatients internal reliability was found to be high (α = .92, n=840; Steer et al 1998). Test-retest reliability, using a similar sample of outpatient, at a one-week interval was reported to be stable (r = .93, n=27) (Beck et al 1996). In a comparison of the BDI-1A and BDI-II in a sample of psychiatric outpatients (Beck, Steer, Ball & Ranieri, 1996) both questionnaires reported comparably high rates of internal consistency (α = .89 and α = .91 respectively), and all items were positively correlated with self-reported depression.

The BDI-II was used as the assessment of affective symptomatology in the Glasgow-Edinburgh FEP study.

Duration of untreated psychosis interview (DUP; Beiser et al., 1993; Larsen et al 1998, 2005; Skeate et al., 2002)

This measure is an unstructured interview protocol adapted and enhanced from the methodology of Beiser and colleagues (1993). Information regarding the circumstances of onset and development of psychotic symptomatology is collected from the individual and (where it a clear DUP could not be estimated) a carer or loved one. Information is cross-referenced with clinical case notes, and discussion with the individual's keyworker or RMO. The date of onset of psychosis is calculated to the nearest week. Transition to psychosis is indicated as the presence of one or more symptoms on the positive symptom scale of the PANSS, rated as 4 or greater (indicating a significant degree of impairment). In cases where the exact date of onset is unclear, the date was taken as the 1st day of the month for which symptoms rate above threshold. The protocol used for calculation of the DUP is contained in Appendix 7. The test-retest reliability for Larsen et al., (1998) was reported as good (intraclass coefficient $r = .96$, $p<0.01$).

The definition of duration of untreated illness used in the study followed the definition and guidelines of Norman and colleagues (2004, p. 257): "(the onset of) *noticeable psychiatric symptoms, such as marked symptoms of depression or anxiety" and/or the first signs or symptoms that indicate a change from an individual's previous stable level of functioning (regardless of the level of that functioning)".* This definition makes a distinction between untreated illness, as a psychopathological entity, in contrast to problems or concerns expressed by the participant or relevant others regarding a lifelong behaviour pattern or characteristic such as "always being socially shy" or "a tendency to be anxious and worried since a young child". In addition, following Norman and colleagues (2004) protocol DUP was further subdivided into three sections: Duration to onset of help-seeking; Duration from onset of help-

seeking to first contact with secondary mental health services, and Delay from onset of help-seeking to Onset Criteria Treatment (O.C.T. – see Appendix 6)

In the current study, the DUP protocol was implemented over more than one interview session, partially dependent on the length and complexity of the timeframe under examination. The aim was to approach the construction of a DUP timeline as a collaborative process, with the researcher facilitating the participant in recounting their narrative of the events and leading up to first contact with the treatment team and/or first admission. The aim of the interview process was therefore to allow the participant to describe the salient autobiographical memories and recollections and the emergent themes of these events as they remembered them, starting from onset of treatment, and working back to the initial emergence of psychotic symptomatology. During this session the researcher took freehand notes, while simultaneously sketching a timeline of salient events and themes identified in the narrative. The timeline was assembled using a framework of three separate factors:

1. Factors reflecting psychotic symptoms at or above diagnostic threshold for DSM-IV psychotic disorder.
2. Factors indicative of non-psychotic psychopathology e.g. distress, mood disturbance, anxiety, anger.
3. Factors reflecting life events, interpersonal processes e.g. changes in close relationships and other ongoing stressors.

The number of sessions used to assemble the DUP summary was determined by the historical period recounted, and the complexity of the emergent narrative. Between each session, the researcher would construct a draft typed summary and graphical depiction of the timeline (using Microsoft Visio 2003). At each session the "working copy" of the timeline diagram would be discussed with the participant and used as an *aide memoire* during interview sessions. The range of sessions required was between one and five with the majority of timelines being constructed in two sessions. When a consensus depiction of the DUP timeline was reached between

participant and researcher, a final copy of the graphical and written summaries was produced. The written summary enabled more complex factors implicated in DUP to be fully documented. In addition, for some participants (particularly in cases where the information gathered suggested the DUP/DUI was notably long or development of psychosis was insidious/hard to estimate) the information obtained from the Premorbid Adjustment Scale (Cannon-Spoor, et al., 1982; see below) was also relevant. A copy of this was given to the participant at the next appropriate research appointment. Where consent was given by the participant, a copy of the summary was also shared with the clinical team, the aim being to aid treatment planning for recovery and staying well. An annonymised sample DUP summary is shown below in Figure 7.1.

Pathways to care (Skeate et al., 2002)

Help-seeking and pathways into care were assessed in the context of the DUP timeline construction, then mapped on to a structured proforma. Pathways to care indicates the process involved in an individual becoming known to clinical services, leading to the initiation of treatment for psychosis. This procedure has been successfully applied to early psychosis samples in the UK and France (Skeate et al., 2002; Cougnard, Kalmi, Desarge, Misdrahi, Abalan, Bru-Rousseau, et al., 2004).

Successful and failed help-seeking attempts were recorded, along with the instigator of the help-seeking attempt (e.g. individual, parent, partner, referral from other clinical service). A help-seeking attempt was recorded if the individual presented to a service, agency or individual considered to be capable of offering support or assistance in managing the individuals distress (see Appendix 7). Criteria for classifying help-seeking attempts and the criteria for delineating onset and offset of individual help-seeking attempts are detailed in Appendix 7. The pro-forma also recorded whether the help-seeking attempt was related to direct disclosure of psychotic symptomatology, or whether the help-seeking attempt was indirectly related to psychosis such as presentation to health services for low mood, or sleep

difficulties. Presentations to services for clear physical health difficulties were not considered to be help-seeking attempts unless the physical health problem was directly related to the psychotic episode (e.g. representative of somatic delusions).

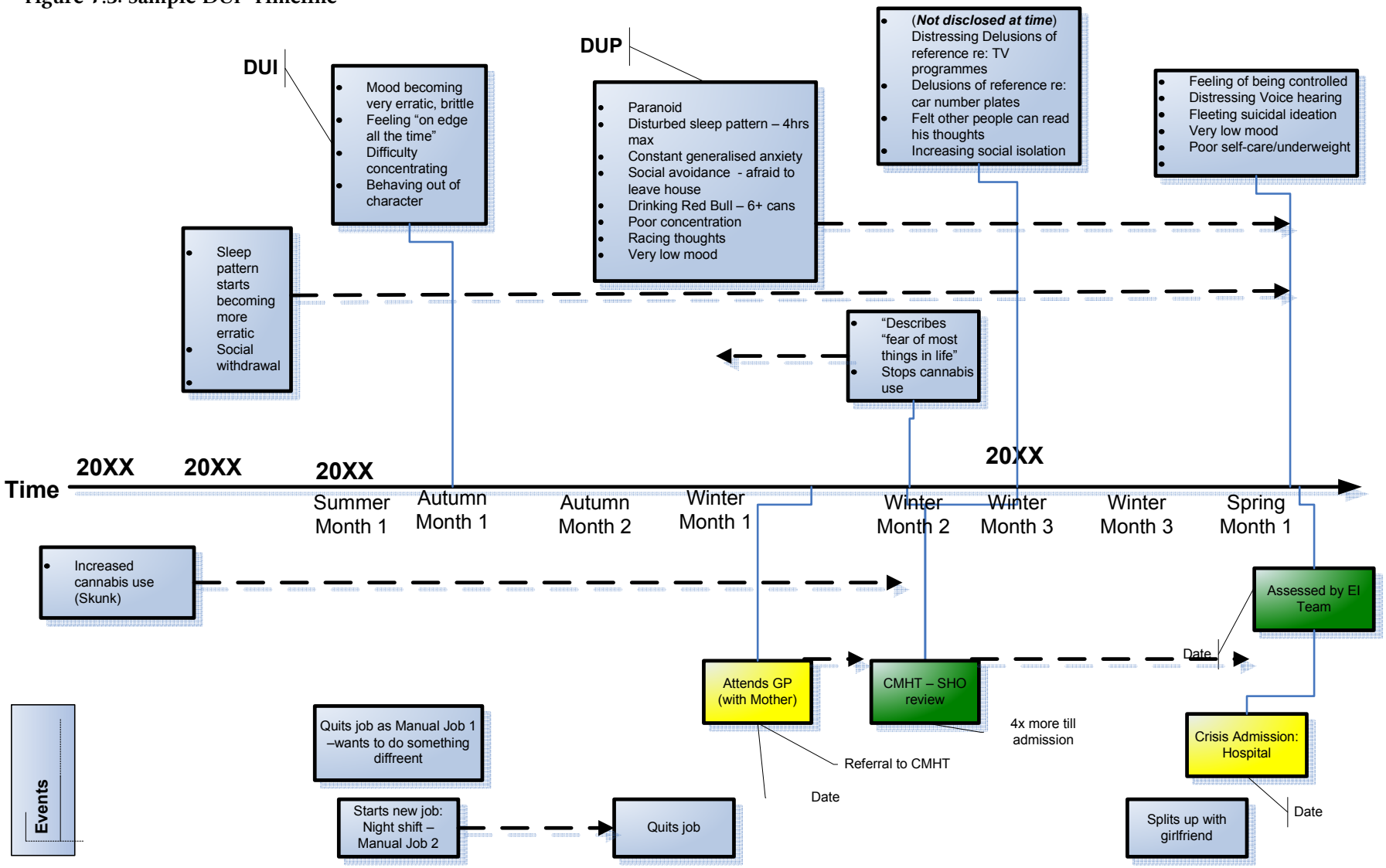
Premorbid Adjustment Scale (PAS; Cannon-Spoor, et al.., 1982)

The PAS is a semi-structured interview constructed from 36 items that retrospectively map level of functioning prior to onset of psychosis. The measurement period is from birth till adulthood; further sub-divided into four age periods. As discussed in Chapter 3, the scale can also be divided into academic and social functioning components (e.g. Melle et al., 2004, 2005), or divided by factor analysis into typologies representing developmental functioning (e.g. Haas & Sweeney 1992; Addington et al., 2003a, 2005a). It has been repeatedly used in studies of psychosis, and has been applied to a multitude of first episode psychosis samples (for a detailed analysis of this measure see Chapter 3). Instructions for adapting ratings for first episode psychosis studies have been published by Van Mastrigt & Addington (2002) and were adopted for the current study.

Inventory of Interpersonal Problems - Short Form (IIP-32; Horowitz, et al., 2000)

The IIP-32 is a short 32 item, self-report measurement of an individual's interpersonal problems, and associated distress. This measure is described more extensively in Chapter 6 (p. 177).

Figure 7.3: Sample DUP Timeline



Adolescent Coping Scale (ACS; Frydenberg and Lewis 1993)

This is a measure of an individual's reliance upon different coping behaviours. It consists of 18-items that assess three forms of common approaches to coping with general difficulties: productive, other-focussed, and non-productive coping. Individuals rate each coping behaviour on a 5-point Likert scale – assessing the frequency of use of each coping behaviour. It has been widely used in adolescent samples (Frydenberg & Lewis, 1993) and has reasonable validity and reliability. It has not previously been used in a sample of individuals presenting with psychosis.

Adult Attachment Interview (AAI) (Version 7.1; Main, et al., 2002)

A semi-structured interview, designed to be administered by trained interviewers, the AAI consists of 20 questions and probes, allowing categorisation of an adult individual's state of mind with regard to attachment behaviour. The AAI is designed to "surprise the unconscious "(Main, et al., 2002), by focussing the interviewee on the task of recollecting and reflecting on one's attachment related developmental experiences. The task for the interviewee is to construct a narrative consistent with Grice's (1975, 1988) conversational maxims: to be truthful in one's discourse while remaining relevant, appropriate and perspicuous. Each interview is transcribed verbatim and coded for attachment status by coders trained in the AAI coding system (Latest edition – Version 7.1; Main, et al., 2002). Transcripts are allocated one of three "Organised" categories: One 'Secure' Category – "Freely Autonomous" - and two 'Insecure' categories – "Dismissing" and "Preoccupied". In addition, transcripts can be assigned a category of "Unresolved/U" with regard to trauma and loss, where the coherence of an interviewee's narrative breaks down. In transcripts coded "U" an additional "Organised" category is also assigned. In addition, scores for subscales of the AAI can also be assigned, of which the subscale for Narrative coherence has found to be a significant predictor of attachment security, ($r=.96$; $p<0.01$; Waters, Treboux, Fyffe, & Crowell, 2001).

The AAI has been tested for stability and discriminant validity (van IJzendoorn, 1995). Interview stability (measured by category allocation) at test-retest interval of 2 months has been reported as 90% at 3 months (kappa = .79, n=59; Sagi, Bakermans – Kranenburg, Scharf, Koren-Karie, Joels, & Mayseless, 1994). Stability of three-category classification at an 18-month interval has been reported as 86 % (kappa = .73; Crowell, Waters, Treboux, O'Connor, Colon-Downs, Feider, et al., 1996), and 70% stability has been recorded at four years (Ammaniti, Speranza, & Candelori, 1996).

Attachment status using the AAI has been found to be unrelated to intelligence and general memory (van IJzendoorn, 1993; Bakermans-Kranenburg & van IJzendoorn, 1993). Discriminant validity has been established by comparing responses to a non-attachment focussed Employment Experience Interview (mirroring the AAI protocol), with the AAI responses (n=53). An individual's classification, when derived from the employment interview was found to be orthogonal to the AAI classification (Crowell et al, 1996). It has also been demonstrated to be ethically appropriate for use in clinical populations (Dozier, 1990; Broberg, 2001). The interview was administered by Research Assistants with extensive training in the AAI protocol. Training was administered by researchers who had attended a 2 –week AAI Training Institute, conducted by qualified AAI trainers. Transcripts were coded by two researchers with attendance at an AAI Training Institute. Angus MacBeth attended the January 2005 Göteborg, Sweden AAI Institute (Trainers: Anders Broberg and Tord Ivarsson, Appendix 11), and was certified reliable over 32 transcripts in 3-category AAI coding by Mary Main and Erik Hesse in December 2006 (Appendix 12). Rebecca Ludford attended the June 2007 London, Ontario AAI Institute (Trainers: David & Dianne Pederson), and is currently completing the AAI reliability check under the supervision of Mary Main and Erik Hesse.

Reflective Function

In addition, to assignment of an attachment category, AAI transcripts can be used to derive an individual's level of reflective functioning (RF), an operationalisation of Fonagy and colleagues (2002) mentalisation construct using the Reflective Function

coding framework (Fonagy, et al., 1998). The narrative task presented by the AAI also offers an opportunity to assess an individual's understanding of the thoughts, feelings, intentions and goals models of self and others, and the interaction of these phenomena. This coding framework has been previously used in studies of therapeutic change in complex psychopathology (Fonagy et al., 1996; Levy et al., 2006). In the current study, Reflective function was provisionally coded by 2 trained coders, who have attended training institutes in the coding system (Andrew Gumley & Matthias Schwannauer – Trainer: Fulvia Ronchi). The author also attended the same training institute (see Appendix 13).

Service Engagement Scale (SES; Tait et al., 2002)

This measure uses a 4 point 14-item scale to assess a persons overall engagement with a service. Unlike the other self-report questionnaires in the study key workers completed the scale. Items assess four subscales including availability, collaboration, help seeking and treatment adherence.). The scale has good reliability and discriminant validity (Cronbach α = 0.76 – 0.90 for sub-scales Tait, et al., 2004). The scale has also been demonstrated to discriminate between individuals with a predominantly sealing over versus integrating recovery style (Tait, et al., 2004).

Demographics

A sheet documenting demographics and treatment data was also completed at 12 months after initiation of treatment, based on information from case notes and reports from key-workers.

Procedures

Approach and recruitment

Individuals identified as appropriate for inclusion to the research (at appropriate timepoint in clinical care and considered capable to consent) were initially approached by their keyworker or RMO. The initial invitation to participate in the

research was informal and made in the context of a routine clinical appointment. The individual's right to decline participation with no corresponding effect on routine care was clearly emphasised. If the individual was willing to participate, a member of the research team accompanied the keyworker/RMO at the next suitable appointment with the potential participant. At that juncture, the researcher formally invited the individual to participate in the research. Potential participants were provided with an information sheet (see Appendix 8) regarding the study and the researcher verbally explained what the research process would entail. It was emphasised that participation in the research was entirely voluntary, and it was reiterated that declining to participate (or leaving the research at any time) had no adverse effects on the treatment offered to the participant by the clinical team. These points were also clearly indicated on the participant information sheet.

Potential participants were given at least 24 hours to consider participation. If the approached individual agreed to participate in the research, both the individual and researcher signed the consent forms. Three copies of the consent form were signed – one for the participant's own reference, one for the clinical team patient file, and one for the research team. In addition, a copy of the information sheet was given to the participant and a further copy filed in the clinical notes.

After consent was obtained, a member of the research team contacted the participant by telephone to arrange a suitable time and location to begin administration of the research measures. The phone contact was, unless unfeasible, made within a week of consent being obtained. In addition, the participant's General Practitioner was notified of the participant's decision to take part in the study by writing within two weeks of the individuals consent to participate.

Administration of measures

After consenting to take part in the study the researcher implemented the measurement protocol by arranging to meet with the participant five to six times,

for approximately one hour per session. The measures were administered as sessions covering the following areas: 'How are you feeling?', 'Timeline and helpseeking', 'Your background and important life events', and 'Attachment and early experiences'. Self-report questionnaires were completed concurrently with these sessions. It was initially intended to run each session sequentially over a period of one to two months. However, in order to be sensitive to both the needs of the participant, and to maintain collaboration with the clinical team the timing of assessments was, where necessary, adjusted according to the ongoing circumstances of the participant e.g. sessions deferred to a later date. Participants were debriefed by the researcher at conclusion of their involvement in the study.

Settings and Equipment

All semi-structured interviews bar the AAI were completed via hand-written notes taken by the interviewer. Notes were then used to complete coding pro-formas for each measure. The AAI was conducted using a digital recording device (Sony ICD SX56). Therefore notes were not taken during the AAI session. The recording was then transcribed and coded via analysis of the annonymised transcript. Subsequently, the original recording was erased to maintain confidentiality.

Research interviews were conducted either in the participant's home or at the relevant clinical team base. Unless there was a pre-existing safety issue participants were given the choice of where they wanted interviews to be conducted. This ensured that the individual could access their keyworker after the interview to discuss any issues that may have been raised by the AAI interview. Prior to commencing the interview, the participant was made aware that they could stop the interview at any time, either for a break, or to end the interview at that point.

No home visit was conducted without an up-to-date risk assessment, carried out by the clinical team. When a home visit was conducted, it was subject to the health and safety procedures for the local clinical team. Health and safety issues were subject to

ongoing local clinical (ESTEEM Glasgow - Dr Suzy Clark; EPSS and NHS Lothian – Dr Matthias Schwannauer) and research (Glasgow - Dr Andrew Gumley; Edinburgh – Dr Matthias Schwannauer) supervision.

Session a: How are you feeling?

The aim of these measurements was to obtain an overview of the participant's current symptomatology, and level of emotional dysfunction. It was also intended to facilitate the construction of a rapport between the participant and the researcher. Measurements administered at this session were as follows:

- Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987)
- Beck Depression Inventory - II, (BDI-II) (Beck et al., 1996)
- World Health Organisation Quality of Life (abbreviated) assessment (WHOQOL – BREF) (WHOQOL group., 1998)

Session b: Timeline and help-seeking

The second assessment session was again arranged at a time convenient to the participant, where possible within three weeks of the first session. The aim of this session was to build up a profile of the circumstances leading to the participant experiencing a psychosis and accessing clinical services. The session consisted of two measurements:

- Duration of Untreated Psychosis – Patient interview component (DUP) (Beiser, et al., 1993, Skeate et al., 2002)
- Pathways to care (Skeate et al., 2002)

Session c: Your background and adjustment to psychosis

The aim of this session was to trace the participant's social and interpersonal development up until the onset of their experience of psychosis – starting from childhood and continuing through to onset of psychosis. This encompasses the duration of the individual's *premorbid* functioning. As the premorbid adjustment

scale was predicated on an accurate estimation of the DUP, this session was always conducted after the DUP sessions. Self-report measures of coping and interpersonal problems were also completed at this session. Measures used were as follows:

- Premorbid Adjustment Scale (Cannon-Spoor et al., 1982)
- Adolescent Coping Scale (Frydenberg & Lewis., 1993)
- Inventory of Interpersonal Problems – 32 item version (Horowitz et al., 2000)

In addition, at this juncture the keyworker with most experience of working with the participant was asked to complete the Service Engagement Scale (Tait et al., 2002). This was completed according to the keyworkers judgement, and did not involve consultation with the participant.

Session d: Attachment related experiences

The final session consisted solely of the Adult Attachment Interview. The aim of the session was to assess the participant's state of mind with regard to attachment with regard to attachment, based on their recollections of childhood. With the exception of two participants, this session was conducted at the clinical team base. By conducting the interview at this location the participant has an opportunity after the interview to access their keyworker or another member of the clinical team to talk over any issues that may have arisen from the interview. This follows the guidelines for good practice set out by Broberg (2001), who noted that the AAI may prime memories of experiences which participants' then wish to discuss further, either with a researcher or a clinical professional.

It was agreed by the research team that participants should not have currently, or recently, been under the influence of alcohol or substances when the AAI session is conducted. If, after completion of the first three assessment sessions the researcher felt that there was a possibility of this occurring the issue was raised with the keyworker. If necessary, administration of the AAI was postponed until such time as the participant was unlikely to be under the influence of alcohol or substances. For

pragmatic reasons, this delay was observed even if the assessment timeframe elapsed. However, where possible the AAI was still attempted at a later date. This caveat was in order to maximise the likelihood that the data obtained from the AAI can be clearly and unambiguously coded and analysed. The same procedure was applied in cases where there was a symptom exacerbation or other considerations where it was agreed that the interests of the participant were best served by deferral of the interview. Given the relative stability over time of attachment representations derived from the AAI, it was felt that the administration of the AAI should not be time limited to the first year of treatment.

Considerations for good practice & feedback mechanisms

For all assessment sessions the participant was made aware that they could take as many breaks as they felt necessary. The order of assessments was designed to maximise the potential for collaborative rapport between the participant and the research worker involved.

Feedback mechanisms a. - Feedback during research process

All sessions with participants, regardless of location, were promptly (within three working days) documented in clinical notes. Any concerns or issues arising from the session were recorded there, based on the guidelines for appropriate information detailed below. In addition, as the research sessions progressed, any concerns raised by the individual, or observations made by the researcher, were appropriately relayed back to the relevant clinical team members via the forum of the clinical meeting.

Appropriate information to feedback was defined as:

a) Information that the researcher felt would help improve the standard of care offered to the individual by the clinical team. This would only be shared with the clinical team if the participant consented to information being shared.

b) Information that the participant disclosed to the research worker, and wanted passed on to the clinical team.
c) Information disclosed by the participant that, in the researchers' clinical judgement, was essential to forming a clinical care plan appropriate to the participant's needs, *and would not otherwise be disclosed to the clinical team.* This form of feedback was guided by the principle that *failure* to disclose the information would increase the risk of the participant harming/ endangering the life of themselves or others. Although this proviso was included in the study protocol, when the study protocol was implemented it was not necessary to breach confidentiality.

Feedback mechanisms b. - Feedback at conclusion of research measures

At conclusion of the participants' involvement in the study any concerns raised by the individual, or observations made by the researcher, if not already communicated, were appropriately relayed back to the relevant clinical team members via the forum of the clinical meeting. The researcher also filed the DUP/Premorbid Adjustment Diagram and Summary in the appropriate section of the clinical case notes. A copy of the Assessment Summary Proforma was also filed in the Psychology Section of the clinical case notes. Particular attention was paid to the information the participant imparted during the AAI. However, before feedback to the clinical team, information from the AAI was evaluated against the criteria for appropriate feedback outlined in the above section.

Power Calculation

As discussed in Chapter 5, there is a paucity of existing empirical data on the use of the Adult Attachment Interview in a first episode psychosis population. The only study in the literature to use the AAI (using categorical ratings) in a sample of individuals diagnosed with schizophrenia, schizoaffective disorder and bipolar disorder reported a sample size of n=42 (Tyrrell & Dozier, 1997). This was drawn from a long-term 'chronic' population. In light of this, and taking into consideration

that one of the aims of the project was to provide empirical data for future large-scale studies, it was initially intended to recruit a sample of 40 – 50 participants.

Data Analysis:

Data were analysed using SPSS version 15. All variables were checked for normality using the Kolmogorov-Smirnov test and parametric/non-parametric analyses of within subjects characteristics (e.g. gender, age) conducted accordingly. Where normality assumptions held, relationships between variables were examined using Pearson correlations, t-tests and ANOVA's where appropriate. For non-parametrically distributed variables relationships were investigated using Spearman correlations, Mann-Whitney tests and Kruskal-Wallis tests. Associations between categorical variables were investigated using Chi-Square tests.

Chapter 8

Characteristics of the FEP sample

The following three chapters outline a comprehensive characterisation of a First Episode Psychosis (FEP) cohort sample recruited from two Scottish cities. This chapter presents the demographic, clinical and psychological characteristics of the sample. No specific hypotheses are presented for this chapter as the emphasis is on detailing the sample prior to commencement of the investigation of DUP, premorbid adjustment, attachment and mentalisation in greater detail. The current chapter will begin with data on recruitment, demographics and diagnostics before delineating levels of symptomatology, psychological characteristics and data pertaining to the onset of difficulties. Finally, the data set will be scrutinised for possible correlations between clinical and psychological variables.

Descriptives of sample

Sample demographics are detailed in Table 8.1. Sixty-four individuals were included in the first episode sample. Forty-three (67%) were male. The mean age at first contact with clinical services for psychosis was 23.67 years (s.d. =6.94; median = 22 years; range = 15 – 45 years), and this variable was normally distributed (Kolmogorov-Smirnov Z = 1.12, p= n.s.). In line with Leung & Chue's (2000) observation of differences in symptomatology and presentation between men and women, gender was explored as a potential covariate for all variables.

Diagnosis

Participant primary diagnoses at 12 months into treatment for FEP are listed in Table 8.1. Forty participants (62.5%) were diagnosed with a first episode psychosis characterised by non-affective psychotic symptomatology (e.g. schizophrenia, schizophreniform disorder, delusional disorder or psychosis Not Otherwise Specified). The remaining twenty-four (37.5%) were diagnosed with an FEP with affective features (e.g. Bipolar disorder, depressive disorder with psychotic features, schizoaffective disorder). There were three individuals for whom clear diagnoses

could not be obtained; these individuals were listed under non-affective psychotic symptomatology. There were no significant differences in diagnostic groupings between genders. There were also no differences between diagnostic groupings with regard to age at first contact with mental health services, hospitalisation, use of the Mental Health Act or medication at first contact.

Treatment characteristics and use of Mental Health Act

Thirty eight individuals (61%) of the cohort were admitted at first contact with clinical services for psychosis. The median number of admissions to hospital at 6 months after initiation of treatment was 1 (IQR = 0 – 1; range = 0 – 2). Three individuals (4.8%) were admitted to an intensive psychiatric care unit in the first six months of treatment. Nineteen individuals (32%) of the cohort were subject to compulsory admission under the Mental Health Act (Section 24 of the Mental Health Act (Scotland) 1984/ Emergency Detention Certificate under the Mental Health Act (Scotland) 2003) at first contact with services.

Table 8.1: Sample Demographics of total sample (n=64)

	n (% of total sample)	Mean (s.d.)	Median (range.)
Gender			
Male	43 (67)		
Female	21 (33)		
Self reported Ethnicity			
White British	58 (90.6)		
Asian British	1 (1.6)		
Black British	1 (1.6)		
Pakistani	1 (1.6)		
Polish	1 (1.6)		
Not reported	2 (3.1)		
Diagnosis			
Schizophrenia	5 (7.8)		
Schizophreniform Disorder	1 (1.6)		
Psychosis NOS	27 (42.2)		
Persistent Delusional Disorder	4 (6.3)		
Schizoaffective disorder	4 (6.3)		
Bipolar Disorder	13 (20.3)		
Mania with psychotic symptoms	2 (3.1)		

Recurrent depressive disorder with psychotic symptoms	5 (7.8)		
Other FEP diagnosis	3 (4.7)		
Occupation at entry into treatment			
Full time paid	10 (15.6)		
Part time paid	4 (6.3)		
House work	3 (4.7)		
Voluntary	3 (4.7)		
Unemployed (benefits)	4 (6.3)		
Unemployed no benefits	23 (43.8)		
Student	10 (15.6)		
Other	2 (3.1)		
Educational attainment			
Left school before age 16	7 (10.9)		
Left school at age 16	16 (25)		
Left School at age 17 – 18	16 (25)		
Completed College course	10 (15.6)		
Completed University degree	8 (12.5)		
Did not complete college/University course	4 (6.3)		
Not recorded	3 (4.7)		
Age at first contact with treatment team (years)		23.67 (6.94)	22 (15 – 45)
Duration of Untreated Psychosis (Weeks)		41.72 (74.46)	20 (1 – 520)

Antipsychotic medication was prescribed at first contact with specialised services in forty-eight cases (81%). All but one of those individuals who were prescribed medication were prescribed atypical antipsychotics, the remaining individual being prescribed Chlorpromazine. Of those individuals prescribed atypical antipsychotics, 29 (61.7%) were prescribed Olanzapine, 12 (25.5%) were prescribed Risperidone, three (6.4%) were prescribed Quetiapine, and two (4.3%) were prescribed Aripiprazole. At 6 months into treatment, five (8.9%) individuals were not prescribed any antipsychotic medication, 22 (39.3%) were prescribed Olanzapine, 11 (19.6%) were prescribed Risperidone, 12 (21.4%) were prescribed Quetiapine, and five (8.9%) were prescribed Aripiprazole. Medication data was unavailable for eight individuals. However, at 6 months no participants had been prescribed Clozapine.

Clinical descriptives: symptomatology and engagement

Table 8.2 details the clinical characteristics of the cohort. Psychotic symptomatology was measured at approximately 6 months into treatment (range – 2 months to 11 months). Scores on the PANSS Positive and Negative symptom subscales were non-parametrically distributed (Kolmogorov-Smirnov test, z=1.739 *p*=.004 and z=1.632, *p*=.008 respectively). However, scores for General psychopathology were normally distributed.

The median score for PANSS Positive symptoms was 10 (IQR = 8 – 14.5, range = 7 – 33). The median score for PANSS Negative symptoms was 11 (IQR = 8 – 18, range = 7 – 35). The median score for negative symptoms was higher for females than males (median = 16 vs. 10), although this difference was not significant. The mean score for PANSS General Psychopathology was 28.98 (*s.d.* = 7.99; range = 17 – 47), and there was no gender effect observed. There were no significant differences between individuals diagnosed with a non-affective psychosis and those diagnosed with an affective psychosis with regard to positive symptoms, negative symptoms or general psychopathology.

Affective symptomatology was measured using the BDI-I and BDI-II. Affective symptomatology scores were normally distributed (K-S Z = 1.18, *p*=.111). The mean score for affective symptomatology was 14.89 (*s.d.* = 11.82, range = 0 – 51), indicative of mild depression. There were no significant differences between males and females on affective symptomatology (*t*=-1.49; df =60, *p*=.141), or differences based on diagnosis (*t*=-.947; df =60, *p*=.348). There was a strong correlation between BDI mean score and the PANSS General Psychopathology item for depression (Pearson's *r*= .598, *p*= .01).

Table 8.2: Summary of Clinical Descriptives

Gender	Males (n=38)		Females (n=18)		Total Sample (n=56)	
	Mean (s.d.)	Median (IQR)	Mean (s.d.)	Median (IQR)	Mean (s.d.)	Median (IQR)
PANSS Positive Syndrome	9.62 (3.71)	8.5 (7 – 10.5)	12.13 (4.22)	11 (9 – 15)	12.09 (6.03)	10 (8 – 14.5)
PANSS Negative Syndrome	10.42 (3.45)	10 (8 – 12)	17.13 (7.72)	16 (10 – 26)	13.59 (6.75)	11 (8 – 18)
PANSS General Syndrome	28.29 (8.28)	25.5 (18 – 29.25)	30.44 (7.33)	29 (25 – 36)	28.98 (7.99)	28 (23.25 – 35(
Affective symptoms	11.65 (10.17)	7.5 (3 – 21.5)	16.40 (14.25)	13 (3 – 25)	14.89 (11.82)	12.5 (4.75 – 24.25)
WHOQOL Physical	64.38 (12.64)	64.29 (53.57 – 75..00)	56.61 (19.74)	67.86 (39.29 – 78.57)	61.65 (15.78)	64.29 (53.57 – 75..00)
WHOQOL Psychological	57.32 (13.30)	62.50 (45.83 – 67.71)	49.58 (19.11)	54.17 (29.17 – 66.67)	54.61 (15.96)	58.33 (41.67 – 66.67)
WHOQOL Social Relationships	56.42 (17.96)	66.67 (41.67 – 75.00)	52.92 (22.66)	58.33 (41.67 – 75.00)	55.19 (19.61)	58.33 (41.67 – 66.67)
WHOQOL Environment	72.08 (13.51)	71.88 (60.38 – 78.91)	66.56 (17.06)	68.75 (50.00 – 84.38)	70.14 (14.94)	71.88 (59.38 – 81.25)
SES Total	7.86 (7.15)	5 (1 – 12.5)	12.45 (9.07)	12 (6 – 22)	9.46 (8.08)	7.5 (3 – 14)
SES Availability	1.11 (1.39)	0 (0 – 2)	1,2 (1.74)	0 (-0 – 2.75)	1.07 (2.03)	0 (0 – 2)
SES Collaboration	1.87 (2.10)	1 (0 – 3.25)	3.63 (2.80)	3 (2 – 5)	2.45 (2.48)	2 (0 – 5)

SES Help-seeking	3.93 (3.65)	3 (0 – 6)	5.5 (3.48)	5 (4 – 7)	4.48 (3.64)	4 (1.75 – 6)
SES Treatment Adherence	0 (0 – 2)	0 (0 - 1)	1.5 (0 – 4)	2 (0 - 4)	0 (0 – 2)	0 (0 – 2)

With regard to engagement with services after initiation of treatment, the total mean score for service engagement was 9.46 (s.d. = 8.08, range = 0 – 33). The mean scores for total SES score, the collaboration, and help-seeking subscales were normally distributed (K-S = .963 – 1.317, all *p* values >0.05). However, the mean scores for availability and treatment adherence subscales were non-parametrically distributed (K-S = 2.35, *p*=0.0001; K-S = 2.24, *p*=.0001). The mean score for the collaboration sub-scale was 2.45 (*s.d.* =2.48, range = 0 – 9), and the mean score for the help-seeking sub-scale was 4.48 (*s.d.* = 3.63; range = 0 – 12). For the availability subscale the median score was 0 (IQR= 0 - 2, range = 0 – 5), while for the treatment adherence subscale the median score was also 0 (IQR = 0 -2, range = 0 – 7).

There were no significant differences between genders for scores on SES total score, and the help-seeking and availability sub-scales. However, mean scores on the treatment adherence and collaboration subscales were significantly higher for females compared to males (median= 1.5 vs. 0; U=168, *p*= .045; mean = 3.63 vs. 1.87, *t*= - 2.42, df=45, *p*=.020); indicative of greater levels of clinician rated adherence and collaboration by male service users. There were significant differences between diagnostic groupings for SES total score (*t*= 2.21, df=43.67, *p*=.033), collaboration (*t*= 2.21, df=43.89, *p*=.032) and the help-seeking subscale (*t*= 2.39, df=43.93, *p*=.021). These indicated lower total scores, greater collaboration and better help-seeking in the affective group. Using Tait and colleagues (2002) cut-off criterion for 'low engagement' (total score of 11 points or greater), 39.1% (n=18) of individuals rated on the SES were classified as having low engagement.

Quality of Life was measured using the WHOQOL-BREF (The WHOQOL Group, 1998). Scores were transformed using published norms. All subscales were normally distributed. The mean score for the Physical Quality of Life sub-scale was 61.65 (*s.d.*

= 15.78), mean score for Psychological quality of life was 54.61 (*s.d.* =15.96), mean score for social relationships was 55.19 (*s.d.* =19.61), and the mean score for the environment subscale was 70.14 (*s.d.* = 14.94). There were no significant differences between males and females for mean scores on any subscales. However, individuals with an affective psychosis diagnosis reported significantly higher scores on the Environmental Quality of Life sub-scale (mean score = 80.13, *s.d.* = 11.27) than individuals with a non-affective psychosis diagnosis (mean score = 66.90, *s.d.* = 14.63; t=-3.094; df = 55; p = .003).

Psychological Characteristics:

With regard to psychological variables two measures featured in the analysis of the FEP cohort – measurement of interpersonal problems using the Inventory of Interpersonal Problems (IIP-32), and measurement of coping using the Adolescent Coping Scale (ACS). In addition to total score and subscales for the IIP-32, the Distancing and Affiliating sub-scales used in Chapter 6 were also applied to the FEP cohort.

The IIP-32 the total score, Distancing and Affiliating scales and cold/distant, socially inhibited, non-assertive, overly accommodating, self-sacrificing and intrusive-needy subscales were normally distributed. However, the scores for the domineering/controlling and vindictive/self-centred subscales were non-parametrically distributed (KS Z= 1.482, p=0.021 and K-S Z= 1.482, p=0.16 respectively). Mean and median scores are given for the IIP subscales in Tables 8.3 and 8.4. There were no significant differences between genders for IIP mean scores. However there were significant differences between diagnostic groups in scores for the Affiliating scale (t= -2.15; df = 51; p = .036), non-assertive (t= -2.73; df = 55; p = .008), overly-accommodating (t= -2.73; df = 54; p = .009) and self-sacrificing sub-scales (t= -2.24; df = 55; p = .029). In each instance the affective psychosis diagnosis group reported significantly higher scores than the non-affective psychosis diagnosis group.

With regard to the Adolescent Coping Scale, Kolmogorov-Smirnov tests of normality indicated all sub-scales were parametrically distributed. The mean score for the Problem-Solving sub-scale was 57.73 (*s.d.* = 10.86), the mean score for the Reference to Others subscale was 55.20 (*s.d.* =15.15), and the mean score for the Non-Productive Coping subscale was 50.00 (*s.d.* =10.85). There were no significant differences between male and female scores on the ACS, or between diagnostic groupings.

Duration of Untreated Psychosis, help-seeking and onset variables

Variables pertaining to the duration of untreated psychosis (DUP), and other onset related factors were derived from the DUP/Pathways interview sessions. In line with the majority of FEP cohort research (e.g. Marshall, et al., 2005), DUP was found to be non-parametrically distributed (K-S Z = 2.301, p= .0001). Following Addington and colleagues procedure for normalising DUP (2004), a transformation using $\log_{10}$ was applied to the DUP data. The results for duration of untreated illness prior to DUP, delay to help-seeking, delay to service contact, and delay to Onset Criterion Treatment (O.C.T) were also non-normally distributed (K-S Z scores = 1.699 – 3.029, all $p < .005$). The data for total number of helpseeking attempts, number of help-seeking attempts initiated by the individual, and number of help-seeking attempts initiated by an "Other" (see Appendix 7) were also non- parametrical (K-S Z scores = 1.366 – 2.531; all $p < .05$).]

TABLE 8.3: IIP-32 Sample characteristics by total sample and gender

	Males (n=36)		Females (n=21)		Total Sample (n=57)	
	Mean(s.d.)	*Median (IQR);*	Mean(s.d.)	*Median (IQR);*	Mean(s.d.)	*Median (IQR);*
IIP Total Score	35.63 (21.45)	37 (14 – 52)	35.47 (19.04)	38 (20 – 56)	35.57 (20.45)	37 (17.75 – 53.5)
Distancing Scale	17.12 (11.12)	16.5 (7.5 – 26)	14.05 (10.28)	12 (5.5 – 19.75)	15.98 (10.82)	15 (6.75 – 24.5)
Affiliating Scale	19.33 (12.06)	19 (49 – 25.5)	22.40 (12.68)	21 (13.5 - 30)	20.49 (12.27)	20 (11 – 26.5)
Domineering/Controlling Subscale	**2.42 (2.58)**	**2 (0 – 3.75)**	**1.24 (1.58)**	**1 (0 - 1)**	1.98 (2.32)	1 (0 - 3)
Vindictive/Self-Centred Subscale	3.75 (3.81)	2.5 (.25 - 7)	2.45 (2.95)	0.5(0 – 4.75)	3.29 (3.55)	2 (0 – 5.75)
Cold/Distant Subscale	4.78 (3.59)	4 (1 – 8)	4.48 (4.42)	4 (0.5 – 8.5)	4.67 (3.88)	4 (1 – 8)
Socially Inhibited Subscale	5.69 (3.96)	5.5 (2 – 8.75)	6.38 (4.78)	7 (1.5 – 9.5)	5.95 (4.25)	6 (2 – 9)
Non-Assertive Subscale	5.61 (4.22)	5 (2 – 8.75)	6.33 (3.93)	6 (2.5 – 8.5)	5.87 (4.10)	6 (2 – 8.5)
Overly Accommodating Subscale	5.11 (3.50)	5 (3 – 7.75)	6.70 (3.96)	6.5 (3.25 – 9)	5.68 (3.71)	6 (3 – 8)
Self-Sacrificing Subscale	5.25 (3.56)	5 (3 – 8)	5.71 (3.29)	6 (4 – 8.5)	5.42 (3.44)	5 (3 – 8)
Intrusive/Needy Subscale	3.49 (3.29)	3 (1 – 5)	3.39 (4.14)	2 (0 – 5.5)	3.45 (3.60)	3 (0 – 5)

TABLE 8.4: IIP-32 Sample characteristics by diagnosis

	Affective Psychosis diagnoses (n=21)		Non-Affective Psychosis diagnoses (n=36)	
	Mean(s.d.)	*Median (IQR);*	Mean(s.d.)	*Median (IQR);*
IIP Total Score	41.37 (19.06)	33 (14 – 45)	32.43 (20.76)	39 (22 – 55)
Distancing Scale	16.50 (10.38)	14.5 (5.75 – 26)	15.68 (11.20)	15 (7.25 – 23.5)
Affiliating Scale	25.00 (11.83)	17 (7.5 – 25.5)	17.76 (11.87)*	23.5 (18 – 32.5)
Domineering/Controlling Subscale	1.97 (2.44)	1.5 (1 – 3)	2 (2.14)	1 (0 – 3)
Vindictive/Self-Centred Subscale	3.50 (3.63)	5 (1.5 – 8.9)	2.9 (3.46)	3 (0 – 7)
Cold/Distant Subscale	5.52 (4.62)	4 (1 – 7)	4.17 (3.34)	5 (1 – 10)
Socially Inhibited Subscale	6.47 (4.20)	5 (2 – 8.75)	5.64 (4.30)	7 (2.5 – 10.5)
Non-Assertive Subscale	7.71 (4.26)	4.5 (1.25 – 8)	4.81 (3.65) *	6 (4.5 – 10.5)
Overly Accommodating Subscale	7.33 (3.72)	5 (2 – 7)	4.69 (3.38) *	7 (4 – 10)
Self-Sacrificing Subscale	6.71 (3.33)	5 (2 – 7)	4.67 (3.32)*	6 (4 – 9.5)
Intrusive/Needy Subscale	3.60 (3.82)	3 (0 – 5.75)	3.36 (3.52)	3 (0.25 – 5)

Note: * Significant difference= $p < .05$

The median Duration of Untreated Psychosis was 20 weeks (mean= 41.72 weeks. IQR = 4 – 51.75 weeks, range = 1 – 520weeks). The Mean Log_{10}DUP was 1.20 (*s.d.* = .65), corresponding to a DUP of 16 weeks. The median DUP for males was 16 weeks (IQR= 4 – 30 weeks, range = 1 – 182 weeks, mean LOG_{10}DUP= 1.09, *s.d.* = .09), whilst the median DUP for females was 26.5 weeks (IQR=8.5 – 160 weeks, range = 1 – 521 weeks, mean LOG_{10}DUP= 1.41, *s.d.* = .16). There was no significant difference in LOG_{10}DUP between diagnostic groups (t= 1.55, df= 60, p= .127). Age at onset of treatment was not correlated with DUP.

The median duration to onset of DUP (i.e. the duration of untreated illness) was 66 weeks (IQR = 9 – 265.5 weeks), and the median delay to onset of helpseeking was 6 weeks (IQR = 1 – 21.5 weeks). The median delay to contact with secondary mental health services was 2 weeks (IQR= 0 – 9.25 weeks), and the median delay to O.C.T. was 4 weeks (IQR= 1 – 20 weeks). There were no significant differences between males and females for duration to onset of DUP, delay to onset of help-seeking, and delay to contact with secondary services. However, the delay to O.C.T. was significantly different between genders (U=274.5, p=.027), with females having a significantly longer delay to O.C.T. than males (13.5 weeks versus 3 weeks). With regard to diagnostic grouping there were no differences between affective psychosis and non-affective psychosis groups for duration of untreated illness, treatment delay to contact with secondary mental health services or delay to O.C.T.

The median number of help-seeking attempts was 3 (IQR = 1 – 4, range = 1 – 9). The median number of attempts initiated by the individual was 0 (IQR = 0 – 2, range = 0 – 5), with the median number of attempts initiated by an "other" being 1 (IQR = 1 – 2; range = 0 – 7). The distribution of help-seeking attempts is depicted in Figure 8.1. There were no significant differences between genders on help-seeking variables. Age at first contact with treatment team was not significantly correlated with total number of help-seeking attempts, however age was significantly positively correlated with participant initiated helpseeking (Spearman r = .401, p <. 01), and significantly negatively correlated with other initiated help-seeking (Spearman r = -.277, p <. 05). Therefore, it would appear that the older participants were, the greater the number of help-seeking attempts they initiated themselves, whereas the younger the individual, the more likely it was that another individual would initiate help-seeking on their behalf.

Figure 8.1: Distribution and characteristics of help-seeking pathways in an FEP cohort

Number of helpseeking contacts made	1st Contact	2nd Contact	3rd Contact	4th Contact	5th Contact	6th Contact	7th Contact	9th Contact
	20	9	9	10	5	3	2	1
Contact (s) initiated by:	*N*= 59	*N*= 39	*N*= 30	*N*= 21	*N*= 11	*N*= 6	*N*= 3	N= 1
Self (n)	1	1	2	2	2	0	--	--
Other (n)	19	7	5	2	0	0	--	--
Both (n)	--	1	2	6	3	3	2	1

Key: Numbers at top refer to the number of participants who received appropriate help (whereby treatment for FEP was initiated) at the denoted contact. The boxes running left to right refer to the number of contacts made before receiving appropriate help.

"Contact's initiated by" refers to the number of participants still to receive appropriate help for FEP help after each help-seeking contact

Boxes at left side denote whether helpseeking at each contact was initiated by Self (the participant), other (as defined in Appendix 7) or both. The numbers running left to right in these rows reflect the initiator of help-seeking at each contact

Twenty-two individuals (34%) had previous contact with secondary mental health services, although not for psychosis. Individuals with previous contact with secondary mental health services had a significantly greater number of total help-seeking contacts (U=222, *p*= .003), and self initiated help-seeking attempts (U=275.5, *p*=.023). There were no significant differences in "other" initiated helpseeking contact related to previous secondary mental health contact. Understandably, individuals with previous secondary mental health contact had a significantly longer duration to onset of DUP (U=240.5, p= .016, median value = 108 weeks vs. 29 weeks), and significantly longer $LOG_{10}DUP$ (*t*= -2.67, df=57, *p*= .01). This $LOG_{10}DUP$ value corresponds to a DUP of 10 weeks for individuals with no previous mental health contact, as compared with a DUP of 29 weeks. However, there were no differences in delay to helpseeking, contact with secondary Mental Health Services (for psychosis), or to O.C.T. There were no differences in hospitalisation on first contact, or compulsory admission based on presence or absence of previous secondary mental health contact.

Finally, Jablensky and colleagues (1992) mode of onset criteria were applied to the data (see Appendix 10). Using these criteria, 8 individuals (13.3%) had an acute onset, 11 individuals (18.3%) had a sub-acute onset, 26 individuals (43.3%) a gradual onset, and 15 individuals (25 %) an insidious onset. This distribution is displayed in Figure 8.2. There were no differences in mode of onset between genders. However, there was a significant effect of age at first contact (one-way ANOVA: F= 4.623, df (3, 56) *p* =.006). Post-hoc Scheffe tests indicated that there was a significant difference in age between the gradual and insidious onset groups (mean age = 21.19 vs. 28.67; *p*=.008). There was also a significant between-groups difference in length of $LOG_{10}DUP$ between the mode of onset categories (one-way ANOVA: F= 13.81, df (3, 56) *p* =.0001). Post-hoc Scheffe tests indicated significant differences between the acute group and both the gradual and insidious onset groups, in the direction of shorter DUP in the acute group (both *p* <.0001).

With regard to diagnosis, there were significant differences in mode of onset between individuals with an affective psychosis and individuals with a non-affective psychosis (X^2 = 11.952, *p*=.007). In particular, while no individuals with an affective psychosis diagnosis had an insidious onset of difficulties, 34% (n=15) of individuals with a non-affective psychosis were classified as having this mode of onset. There were also significant differences in DUP between the sub-acute and both the gradual (*p*= .028) and insidious onset groups (*p* =.008). Chi-square tests indicated significant differences between mode of onset groups in terms of previous secondary mental health contact (X^2 = 9.374, *p*=.025), with acute onset individuals unlikely to have had prior secondary mental health contact (see Table 8.5 for details). However, there were no differences between mode of onset groups on likelihood of admission on first contact with mental health services, use of the mental health act at first contact, or likelihood of being prescribed antipsychotic medication at first contact. Although there were no significant differences between groups for total number of help-seeking attempts and participant initiated help-seeking, there was a significant difference between groups for other initiated help-seeking (Kruskal Wallis test: X^2= 10.18, df=3. $p < .017$). The median number of other instigated help-seeking attempts for all groups was one, apart from the median for the gradual onset group which was two. This finding may be related to the relatively low mean age of the gradual onset group (21.19 years, *s.d.* = 6.41).

Figure 8.2: Histogram of Mode of Onset

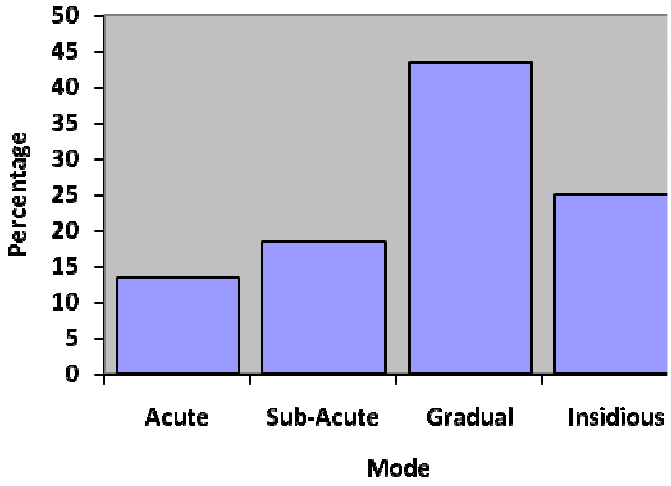


Table 8.5: Table of Mode of Onset and Previous Secondary Mental Health Contact.

	Previous Secondary Mental Health Contact	
Mode of Onset	No	Yes
Acute	7	1
Sub-Acute	9	2
Gradual	16	9
Insidious	5	10
Total	*37*	*22*

X^2 = 9.374, p=.025.

Correlations between Clinical and psychological variables

Pearson correlations were used to explore relationships between relevant demographic, clinical and psychological variables. These are detailed in Tables 8.6, 8.7 and 8.8. Positive symptoms were significantly correlated with negative symptoms (*r*=.416), general psychopathology (*r*= .686), and self-reported affective symptoms (*r*=.396). In addition, positive symptoms were also significantly negatively correlated

with self-reported psychological quality of life (*r*=-.342). Thus, higher levels of positive symptoms were associated with higher clinical psychopathology and lower psychological functioning. Negative symptoms were significantly correlated with general psychopathology (*r*=.674), but also significantly negatively correlated with physical, psychological and environmental quality of life (*r*= - .324 and *r*=-.362, *r*= -2.98). Therefore, higher levels of negative symptoms were significantly associated with substantial impairment in multiple domains of quality of life. Affective symptomatology was also significantly negatively correlated with physical, psychological and social relationship sub-scales of the WHOQOL-BREF, (*r*=-.641; *r*=-.638; *r*=-.403), indicative of an association between heightened affective distress with reduced perceived quality of life.

With regard to coping style, there were significant correlations between problem solving focussed coping, the WHOQOL social relationships (*r*= .414) and environmental quality of life sub-scales (*r*=.335). This suggests that those individual's with a proactive coping style reported higher levels of quality of life. There was also a significant correlation between non-productive coping and affective symptomatology (*r*=.345), and also negative correlations with physical (*r*=-.363) and psychological quality of life (*r*= -.371). Thus non-productive coping strategies such as "*Don't let others know what I am feeling*" were associated with greater distress and reduced quality of life. However, there were no significant correlations between other-focussed coping and clinical variables.

There were significant correlations between the Distancing scale of the IIP and both affective symptomatology (*r* = .380) and the social relationships quality of life sub-scale (*r* = -.339). There were also significant correlations between the Affiliating scale of the IIP and both affective symptomatology (*r* = .274) and the social relationships quality of life sub-scale (*r* = -.307). Therefore, both IIP scales were associated with greater affective symptoms and reduced subjective quality of social interactions. At the subscale level affective symptomatology was significantly correlated with the overly accommodating (*r*=.279), non-assertive (*r*=.286) and self-sacrificing (*r*=.440) sub-

scales (all subscales associated with the IIP Affiliating scale), indicative of greater distress associated with heightened Affiliating related interpersonal problems. The self-sacrificing subscale was also significantly negatively correlated with Psychological quality of life (r = - .354), further indicating perceived lower psychological well-being. The social relationships quality of life subscale was also significantly negatively correlated with dominating problems on the IIP (r= -.277) and the non-assertive IIP sub-scale (r= -.304). However, there were no correlations between either the ACS or the WHOQOL and positive, negative or general psychopathology on the PANSS.

Summary

This chapter has characterised a sample of 64 individuals in the first year of treatment for a first episode of psychosis. In summary, it can be seen that the levels of positive and negative psychiatric symptomatology were both relatively low, but were at a level comparable to other contemporary cohort studies of FEP (e.g. Melle et al., 2004; Addington et al 2005a). The mean level of affective symptomatology was indicative of mild depression, which is also to be expected in an FEP sample (e.g. Birchwood et al, 2000). Participant engagement with clinical services was also good, with 39.1% classified as "poor" engagers, as opposed to the "poor" engagement rate of 60% reported by Tait and colleagues (2003). Quality of life in the first year of treatment also appeared to be noticeably impaired, particularly in the domains of psychological quality of life and social relationships. Greater levels of positive, negative and affective symptoms were all associated with reduced quality of life.

In terms of treatment characteristics it is important to note that almost two thirds of the sample was admitted to hospital at first contact with clinical services. However, the use of the compulsory admission procedures was lower, with only 32% of individuals being subject to the mental health act at first contact. Early use of antipsychotic medication was also prevalent with 81% of participants medicated at first contact with services, rising to 91% at 6-months after onset of treatment.

With regard to duration of untreated psychosis, the median length of DUP reported (20 weeks) was comparable to the median of 26 weeks collated from 19 first episode cohorts reported in Chapter 3 of the current volume. The median number of helpseeking attempts is also comparable to other FEP studies (e.g. Cougnard, 2003). The gender ratio of the current study consisted of a greater proportion of males (67%) compared to the systematic review sample (57.4%). The mean age of the current sample (23.67 years) was also lower than that of the systematic review sample (26.22 years).

From the above summary it can be concluded that the sample is broadly representative of a contemporary FEP cohort, showing low levels of positive and negative psychotic symptoms, at least a mild level of affective distress and impaired quality of life. Antipsychotic medication is, as would be expected the prevalent treatment modality. Having established the representativeness of this cohort, the specific role of both DUP and premorbid adjustment will be analysed in greater detail.

Table 8.6: Correlations between clinical variables and quality of life.

Correlations (Spearman's r)	PANSS Positive Scale	PANSS Negative Scale	PANSS General Psychopathology	BDI Affective symptoms	WHOQOL BREF Physical Scale	WHOQOL BREF Psychological Scale	WHOQOL BREF Social Relationships Scale
PANSS Negative Scale	.416**	_	_	_	_	_	_
PANSS General Psychopathology	.686**	.674**	_	_	_	_	_
BDI Affective symptoms	.396**	.239	.446**	_	_	_	_
WHOQOL BREF Physical Scale	-2.48	-.324*	-.318*	-.641**	_	_	_
WHOQOL BREF Psychological Scale	-.342*	-.362*	-.419**	-.638**	.739**	_	_
WHOQOL BREF Social Relationships Scale	-.239	-.270	-.265	-.403**	.555**	.638**	_
WHOQOL Environment Scale	-.212	-.163	-.298*	-.176	.466**	.366**	.447**

Note: ** = $p<.01$; * = $p<.05$.

Table 8.7: Correlations between clinical variables and Adolescent Coping Scale

Correlations (Spearman's r)	ACS Problem Solving Adjusted	ACS Non-Productive Coping	ACS Reference to Others
PANSS Positive Scale	-0.28	.138	-.031
PANSS Negative Scale	-.227	-.014	0.17
PANSS General Psychopathology	-.208	.121	-.040
BDI Affective symptoms	-.134	.345*	.126
WHOQOL BREF Physical Scale	.219	-.363*	.142
WHOQOL BREF Psychological Scale	.261	-.371*	.102
WHOQOL BREF Social Relationships Scale	.414**	-.272	.174
WHOQOL Environment Scale	.335*	-.207	.189

Note: ** = $p<.01$; * = $p<.05$.

Table 8.8: Correlations between clinical variables and IIP-32 Scales and sub-scales

PANSS Positive Scale	.172	.047	.193	.077	.107	.232	.010	.019	.086	.051
PANSS Negative Scale	.082	-.035	.097	.043	-.007	.061	-.004	-.130	-.026	-.029
PANSS General Psychopathology	.221	.167	.109	.180	.127	.238	.168	.073	.129	.042
BDI Affective symptoms	**.380****	**.274***	.091	.095	.186	.242	**.286***	**.279***	**.440****	.222
WHOQOL BREF Physical Scale	-.069	-.042	.034	.001	-.079	-.005	.003	-.002	-.146	.034
WHOQOL BREF Psychological Scale	-.241	-.237	-.134	-.138	-.151	-.184	-.108	-.097	**-.354****	-.112
WHOQOL BREF Social Relationships Scale	**-.339***	**-.307***	**-.277***	-.229	-.155	-.260	**-.304***	-.208	-.215	-.072
WHOQOL Environment Scale	-.168	-.213	-.041	-.100	-.130	-.217	-.118	-.126	-.114	-.084

Note: ** = $p<.01$; * = $p<.05$

Chapter 9

Exploring Premorbid Adjustment in relation to onset, symptomatology and psychological adjustment.

Having characterised the FEP sample, the next aim of the study was to investigate possible associations between premorbid adjustment, onset of psychosis (including DUP), psychotic and affective symptomatology and adaptation to the experience of psychosis. The hypotheses were as follows:

1) Increased Positive psychotic symptomatology will be associated with DUP but not premorbid adjustment.
2) Greater Negative symptomatology will be associated with poorer premorbid adjustment but not DUP.
3) Poorer Premorbid adjustment will be associated with greater General Psychopathology.
4) Longer DUP will be associated greater with General Psychopathology.
5) DUP and premorbid adjustment will not be significantly associated with each other.
6) Poorer premorbid adjustment will be associated with diminished quality of life.
7) Longer DUP will be associated with diminished quality of life
8) Shorter DUP will be associated with greater helpseeking during the DUP.
9) Longer DUP will be associated with poorer engagement with clinical services.
10) Poorer premorbid adjustment will be associated with poorer engagement with clinical services.

Premorbid Adjustment descriptive statistics

Mean PAS scores for time periods and social/academic distinctions and overall PAS score were calculated by averaging the scores obtained on each of the developmental sub-scales. Ratings for sub-scales were expressed as decimal point numbers ranging from 0.0 to 1.0, where lower numbers represent higher levels of premorbid function (Cannon-Spoor et al 1982). The mean scores for the overall sample and divided by both gender and diagnosis are shown in Tables 9.1 – 9.4. There was a significant difference between genders for overall late adolescent functioning (t= -2.33, df=40, p=.015), indicating that females had significantly greater impairment in functioning than males. There was also a significant difference between genders for late adolescent social functioning (t= -2.233, df= 40, p=.031), indicating that females had significantly greater impairment in social functioning than males. Given the overlap between adult premorbid adjustment and the onset of psychotic disorders, and in line with other FEP samples (e.g. Norman, Malla & Manchanda, 2007; Monte, Goulding & Compton, 2008) the scores for adult premorbid adjustment were not used in subsequent analyses.

Table 9.5 shows the Pearson correlations between PAS academic and social functioning across the three age periods. All correlations were statistically significant, with scores in consecutive age periods (i.e. childhood to early adolescence) more strongly correlated (r= .596 - .686; all p= ≤.01) than those in non-consecutive age periods (e.g. childhood to late adolescence).

Table 9.1: Descriptive statistics for PAS scores by developmental period and gender.

	PAS Age Periods															
	Childhood (n=52)				Early Adolescence (n=52)				Late Adolescence (n=42)				Adulthood (n=32)			
	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR
Overall Sample	.231	.176	.208	.083 – .323	.285	.171	.267	.167 - .392	.259	.199	.200	.100 - .375	.314	.211	.306	.167 - .389
Males	.218	.151	.208	.125 - .292	.277	.162	.250	.167 - .367	.212	.175	.167	.092 - .308	.291	.157	.278	.167 - .389
Females	.260	.224	.208	.052 - .417	.302	.195	.283	.200 - .425	.259*	.199	.350	.158 - .625	.314	.210	.333	.111 - .778

Note: *Significant difference between genders, $p<.05$;

Table 9.2: Descriptive statistics for PAS academic and social scores by developmental period.

PAS Domains	PAS Age Periods															
	Childhood				Early Adolescence				Late Adolescence				Overall			
	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR
Overall Sample																
Social	.224	.211	.167	.083 - .333	.213	.246	.167	.056 - .278	.222	.243	167	056 - .278	.203	.179	.146	.083 - .266
Academic	.237	.200	.208	.083 - .396	.393	.245	.417	.250 - .583	.366	.243	.333	.167 - .500	.294	.182	.278	.153 - .382

Table 9.3: Descriptive statistics for PAS academic and social scores by developmental period and gender

PAS Domains	PAS Age Periods															
	Childhood				Early Adolescence				Late Adolescence				Overall			
	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR	Mean	S.D.	Median	IQR
Males																
Social	.188	.167	.167	.021 - .313	.188	.167	.167	.056 - .278	.176	.182	.139	.042 - .278	.173	.128	.146	.109 - .229
Academic	.248	.200	.250	.083 - .417	.401	.256	.417	.250 – 583	.333	.225	.333	.167 - .479	.293	.185	.278	.153 - .361
Females																
Social	.308	.275	.167	.083 - .563	.267	.205	.167	.056 - .431	.267†	.272	.194	.111 - .653	.272	.250	.198	.083 - .412
Academic	.214	.209	.167	.083 - .313	.354	.223	.417	.167 - .500	.431	.273	.458	.208 - .708	.300	.181	.278	.153 - .417

.*Note:* † Significant difference between genders: $p<.05$

Table 9.4: Descriptive Statistics for PAS academic and social scores by developmental period and diagnosis

PAS Domains	PAS Age Periods															
	Childhood				Early Adolescence				Late Adolescence				Overall			
	Mean	S.D.			Mean	S.D.			Mean	S.D.			Mean	S.D.		
Non-Affective Psychoses																
Social	.213	.211	.167	.083 - .333	.231	.224	.167	.056 - .319	.251	.251	.167	.056 - .333	.219	.195	.156	.083 - .260
Academic	.276	.196	.250	.083 - .417	**.447**	**.226**	.417	.250 - .583	.410	.226	.333	.250 - .583	**.331**	**.176**	.222	.167 - .333
Affective Psychoses																
Social	.173	.208	.125	.000 - .333	.163	.140	.167	.056 - .278	.158	.126	.167	.056 - .278	.159	.120	.146	.109 - .281
Academic	**.131****	**.178**	.083	.000 - .250	**.244****	**.241**	**.250**	.021 - .479	.265	.252*	.333	.042 - .500	**.194****	**.165**	.181	.090 - .354

Note: **: Significant difference between non-affective and affective psychosis groups, $p<.05$

Table 9.5 Inter-correlations between PAS academic scores across the three age periods and PAS social scores across the three age periods.

	Childhood Academic	Early Adolescence Academic		Childhood Social	Early Adolescence Social
Childhood Academic			Childhood Social		
Early Adolescence Academic	.636**		Early Adolescence Social	.686**	.
Late Adolescence Social	.547**	.655**	Late Adolescence Social	.465**	.596**

**p≤.01 (2-tailed)

Hypotheses 1 – 4: Clinical correlates of Premorbid Adjustment and DUP

Table 9.6 lists the clinical correlates of premorbid adjustment. In contrast to hypothesis one that positive symptoms and premorbid adjustment were not associated, positive symptomatology was significantly correlated with impaired premorbid functioning in childhood and early adolescence, in both social and academic domains (r= .332 to r = .423; all p≤.05). Also in contrast to this hypothesis, no significant correlation emerged between DUP and PANSS positive symptomatology.

Contrary to the literature summarised in Chapter 3, and hypothesis two, only impoverished childhood premorbid adjustment was associated with greater negative symptoms, at least in the academic domain (r= .382, p≤.05). However, suboptimal premorbid social functioning was associated with greater negative symptoms at all developmental points (r= .367 to r = .485; all p≤.05). As expected, DUP and negative symptoms were not significantly correlated.

Hypothesis three - that longer DUP would be associated with greater general psychopathology was refuted, with no significant association emerging between DUP and general psychopathology. However, supporting hypothesis four, greater general psychopathology was significantly associated with poorer functioning at all developmental points and in both premorbid domains (r= .387 to r = .453; all $p \leq .05$). The sample was also split into a short and long DUP group, using a median bifurcation, however there were no significant differences between groups on any of the aforementioned clinical variables – positive, negative, general psychopathology.

Although no hypothesis was stated in the introduction, given the pattern of result for psychotic symptomatology relationships between DUP, premorbid adjustment and affective symptoms were also investigated. DUP was significantly correlated with affective symptoms on the BDI (r=.296, p <.05), with longer DUP being associated with greater affective symptomatology. However, the only premorbid functioning variable to be associated with greater severity of affective symptomatology was early adolescent academic functioning (r= .360 $p \leq .01$).

Finally, there were also diagnostic differences in premorbid adjustment (there was no diagnostic differences in DUP, see p.238). Although there were no significant differences between groups on mean social adjustment, there was a significant difference for mean academic adjustment (t= 2.528, df=50, p=.015). Individuals with a non-affective psychotic diagnosis had significantly higher mean academic adjustment scores (mean = .331, s.d. = .176), indicative of poorer academic adjustment than individuals with an affective psychosis diagnosis (mean = .194, s.d. = .165). When academic adjustment was sub-divided by developmental period, significant differences remained for childhood (t= 2.430, df=50, p=.019), and early adolescent adjustment (t= 2.824, df=50, p=.007). For each timepoint higher scores, indicating poorer adjustment were evident in the non-affective psychosis group (see Table 9.2 for mean values and standard deviations).

Table 9.6: Clinical Correlates of Premorbid academic and social functioning

(rho, p value)	*PANSS Positive Symptoms*[1]	*PANSS Negative Symptoms*[1]	*PANSS General Symptoms*[2]	*Affective Symptomatology (BDI)*[2]	*WHOQOL Physical Quality of Life*[2]	*WHOQOL Psychological Quality of Life* [2]	*WHOQOL Social Relationships*[2]	*WHOQOL Environmental Quality of Life*[2]
Childhood Academic	.364* .014	.382** .000	.410** .005	.225 .112	-.340* .017	-348* .017	-.244 .092	-.382** .007
Early Adolescence Academic	.382** .010	.255 .091	.453** .002	.360** .009	-.345* .015	-.232 .109	-.174 .233	-.350* .01 4
Late Adolescence Academic	.291 .095	.255 .146	.407* .017	.113 .520	-.129 .467	-.093 .602	.053 .766	-.471** .005
Childhood Social	.332* .026	.367* .013	.417** .004	.265 .060	-.577** .001	-.463** .001	-.365** .010	-.309* .030
Early Adolescence Social	.423** .004	.485** .001	.387** .009	.246 .082	-.395** .005	-.332* .020	-.291* .043	-.361* .011
Late Adolescence Social	.229 .155	.452** .003	.441** .004	-.121 .450	-.007 .967	-.009 .954	.044 .786	-.188 .245

*$p \leq .05$ (2-tailed); **$p \leq .01$ (2-tailed); [1]= Spearman's *rho*; [2]=Pearson correlations

Table 9.7: Clinical Correlates of Duration of Untreated Psychosis

(rho, p value)	*PANSS Positive Symptoms*[1]	*PANSS Negative Symptoms*[1]	*PANSS General Symptoms*[2]	*Affective Symptomatology (BDI)*[2]	*WHOQOL Physical Quality of Life*[2]	*WHOQOL Psychological Quality of Life* [2]	*WHOQOL Social Relationships*[2]	*WHOQOL Environmental Quality of Life*[2]
$LOG_{10}DUP$	.162	.188	.233	.296*	-.219	.-394**	-.011	-.168
	.233	.164	.083	.022	.109	.003	.937	.221

*$p \leq .05$ (2-tailed); **$p \leq .01$ (2-tailed); [1]= Spearman's *rho*; [2]=Pearson correlations

Hypothesis 5: Are DUP and Premorbid Adjustment associated?

In contrast to the findings of Chapter 3 and hypothesis five, there were significant correlations between $LOG_{10}DUP$ and both academic and social premorbid adjustment (see Table 9.8). These correlations were evident for all timepoints and mean score for premorbid social adjustment (r=.354 to r = .411 all $p \leq .05$). In all cases suboptimal premorbid adjustment was associated with a longer DUP. With regard to premorbid academic adjustment, there were significant correlations with DUP at the early adolescent (r=.385 $p \leq .01$), and late adolescent (r = .380, $p \leq .05$) timepoints.,

When DUP was divided along a median split, there was no significant differences between groups for mean childhood early adolescent or late adolescent adjustment, with individuals with a long DUP having poorer adjustment. Individuals with a long DUP also had significantly poorer mean premorbid social adjustment (t=-2.090, df=36.09, p=.044). There was no difference between groups for mean premorbid academic adjustment.

When DUP was subdivided into its component parts, few significant correlations with premorbid adjustment emerged. A longer delay to contact with Secondary Mental Health Services was correlated with poorer mean social adjustment (r=.281 p=.046), and with suboptimal late adolescent social adjustment (r=.382 p=0.13). Longer delay to Onset Criterion Treatment was also associated with poorer late adolescent social adjustment (r=.374 p=0.15). However, no significant correlations emerged with duration to onset of threshold psychotic symptoms or delay to onset of help-seeking. Taken as a whole these findings suggest a robust association between social premorbid adjustment and DUP, particularly in early adolescence.

Hypotheses 6 and 7: DUP, premorbid adjustment and quality of life.

Support for hypothesis six - that poorer premorbid adjustment would link to reduced quality of life – was mixed. Both childhood and early adolescent social functioning emerged as significantly negatively associated with all quality of life domains (r= -.291 to r =-.577; all $p \leq .05$). However, late adolescent social adjustment was unrelated to any quality of life subscales. In the academic domain of premorbid functioning, childhood adjustment was significantly negatively correlated with physical, psychological and environmental aspects of quality of life (r= -.340 to r =-.382; all $p \leq .05$), but not with social relationship aspects of quality of life. Indeed, both early and late adolescent premorbid functioning were associated with the environmental quality of life subscale (r= -.350 and r =-.471; both $p \leq .05$). Early adolescent academic adjustment was also negatively associated with physical quality of life ((r= -.345; $p \leq .05$).

With regard to hypothesis seven, that longer DUP would link to diminished quality of life, DUP was significantly negatively correlated with psychological quality of life (r=.394, p <.01), with longer DUP associating with decreased subjective psychological quality of life. However no other quality of life subscales were associated with DUP.

Hypothesis 8: Do DUP or premorbid adjustment contribute to help-seeking?

Hypothesis eight stated that shorter DUP would associate with greater help-seeking prior to onset of treatment. The results are summarised in Table 9.9. Supporting the hypothesis there were significant correlations between longer DUP and greater total helpseeking (r=.600, p<.0001), and between longer DUP and greater self-initiated help-seeking (r=.433, p<.001). The association between DUP and total number of helpseeking attempts remained significant after controlling for premorbid social and academic functioning (partial correlation, r=.575, p<.0001), as did the correlation between self-initiated help-seeking and DUP (partial correlation, r=.391, p<.01). In contrast, there was only one significant correlation between premorbid adjustment

and helpseeking, revealing a significant association between poorer early adolescent academic adjustment and greater total helpseeking (r=.288, p<.05).

With regard to the duration from onset of psychiatric symptomatology to DUP, this variable was also significantly associated with total help-seeking attempts (r=.417, p<.001), and self-initiated help-seeking (r=.432, p<.001). In both cases, the association was between longer duration of symptomatology and greater number of help-seeking attempts. There was no significant association between delay to help-seeking and total help-seeking attempts, however, there was a significant positive correlation between length of help-seeking delay and self-initiated help-seeking (r=.360, p<.01). Delay to contact with secondary mental health services was significantly correlated with total help-seeking attempts (r=.387, p<.01), and also with the total number of "other" initiated help-seeking attempts (r=.289, p<.05). Therefore greater delay to contact with secondary mental health services was associated with greater help-seeking instigated by others (including loved ones and primary health care providers). Finally, although delay to onset criterion treatment was not associated with total helpseeking, there was a further significant correlation between delay to O.C.T. and other instigated help-seeking (r=.301, p<.05).

Table 9.8: Associations between Duration of Untreated Psychosis and Premorbid Adjustment

(rho, p value)	*Mean Academic Adjustment*	*Mean Social Adjustment*	*Childhood Social Adjustment*	*Early Adolescent Social Adjustment*	*Late Adolescent Social Adjustment*	*Childhood Academic Adjustment*	*Early Adolescent Academic Adjustment*	*Late Adolescent Academic Adjustment*
$LOG_{10}DUP$[1]	**.405****	**.411****	**.354***	**.396****	**.344***	.275	**.385****	**.380***
	.003	**.003**	**.011**	**.004**	**.026**	.051	**.005**	**.022**
Duration to onset of DUP[2]	.115	.066	.066	.010	.047	-.018	.116	.110
	.426	.648	.650	.946	.767	.901	.424	.523
Delay to helpseeking[2]	.189	.255	.136	.213	.062	.140	.160	.120
	.183	.071	.342	.134	.695	.328	.263	.485
Delay to secondary services[2]	-.025	**.281***	.235	.179	**.382***	.038	.011	.055
	.864	**.046**	.096	.096	**.013**	.790	.936	.751
Delay to O.C.T[2]	.005	.159	.109	.095	**.374***	-.053	.130	.171
	.970	.266	.446	.508	**.015**	.710	.364	.318

*p≤.05 (2-tailed); **p≤.01 (2-tailed); [1]= Spearman's *rho*; [2]=Pearson correlations

Table 9.9: Associations between DUP, premorbid adjustment and helpseeking

	Total number of helpseeking attempts *Spearman's rho (p-value)*	Self-initiated helpseeking attempts *Spearman's rho (p-value)*	Other initiated helpseeking attempts *Spearman's rho (p-value)*
DUP (LOG_{10})	**.600** (.000)**	**.433** (.001)**	.246 (.061)
Duration to DUP	**.417** (.001)**	**.432** (.001)**	.017(.897)
Delay to helpseeking	.201 (.126)	**.360** (.005)**	-.197 (.134)
Delay to accessing Secondary mental health services	**.387** (.002)**	.200 (.129)	**.289* (.027)**
Delay to O.C.T	.226 (.085)	-.002 (.991)	**.301* (.020)**
Mean Academic adjustment	.100 (.501)	.114 (,439)	-.086 (.559)
Mean Social Adjustment	.013 (.928)	.019 (.899)	.043 (.774)
Childhood Social Adjustment	-.088 (.554)	.029 (.846)	-.086 (.559)
Childhood Academic Adjustment	-.095 (.520)	-.062 (.677)	-.076 (.608)
Early Adolescent Social Adjustment	.051 (.731)	.032 (.831)	.059 (.689)
Early Adolescent Academic Adjustment	.288* (.047)	.177 (.229)	.114 (.439)
Late Adolescent Social Adjustment	-.072 (.657)	-.072 (.657)	.170 (.296)
Late Adolescent Academic Adjustment	.069 (.698)	.069 (.698)	.059 (.741)

Hypotheses 9 and 10: Do DUP and premorbid adjustment contribute to engagement?

It was hypothesised that longer DUP and poorer premorbid adjustment would both be associated with poorer engagement with clinical services (Hypotheses 9 and 10

respectively). Correlations for these variables are listed in Table 9.10. In contrast to the hypothesis, it is of note that there were no significant correlations between DUP and either total or subscale scores for the service engagement scale. Furthermore, there were no significant associations between DUP component or duration of untreated illness and engagement with clinical services.

However, as stated in hypothesis 10, there were several significant associations between premorbid adjustment and engagement. Firstly, there were significant associations between total scores on the SES and mean social (r=.411, p<.005) and academic (r=.405, p<.005) premorbid adjustment, with poorer premorbid adjustment in both domains linked to poorer engagement. There were also significant associations between premorbid social adjustment and collaboration (r=.452, p<.005), helpseeking, (r=.496, p<.005) and treatment adherence (r=.442, p<.01) sub-scales of the SES, although there were no correlations with mean academic premorbid adjustment. This suggested that poorer social premorbid adjustment was associated with less active collaboration with treatment, greater difficulties in actively help-seeking and greater difficulties in adhering to medication-related aspects of treatment.

With regard to developmental periods, similar to the pattern for mean social adjustment there was a significant correlation between childhood social adjustment and poorer total engagement (r=.354, p<.05), and also with the collaboration (r=.348, p<.05), helpseeking, (r=.359, p<.05) and treatment adherence (r=.322, p<.05) sub-scales of the SES. Again there were no significant correlations between academic premorbid adjustment and engagement subscales for the childhood period. This pattern of correlations was repeated for early adolescent social adjustment with significant correlations between suboptimal adjustment and poorer total engagement (r=.396, p<.01), reduced collaboration (r=.375, p<.05), poorer helpseeking, (r=.526, p<.01) and greater difficulties in treatment adherence (r=.417, p<.01). In addition, there was a significant positive correlation between early adolescent academic adjustment and total service engagement (r=.385, p<.01).

With regard to late adolescent premorbid adjustment, this pattern was repeated, with the same pattern of correlations. Poorer premorbid social adjustment was correlated with poorer total engagement (r=.344, p<.05), and also with diminished collaboration (r=.626, p<.001), greater difficulties in helpseeking, (r=.528, p<.01) and poorer treatment adherence (r=.657, p<.001) sub-scales. Furthermore, robust correlations also emerged between suboptimal late adolescent academic adjustment and poorer total engagement (r=.380, p<.05), but also indicating higher scores (and thus greater difficulties) on the availability (r=.406, p<.05) collaboration (r=.534, p<.05), and helpseeking (r=.481, p<.05) sub-scales.

When DUP was controlled for the significant correlations between poorer social premorbid adjustment and greater total engagement score, (partial correlation, r=.340, $p < .05$) diminished collaboration (partial correlation, r=.367, $p < .05$) and reduced help-seeking (partial correlation, r=.410, $p < .05$) remained, although the significant association with treatment adherence was no longer evident. The strength of correlations was also slightly weakened. The relationship between poorer premorbid academic adjustment and higher total engagement score also became non-significant after controlling for DUP.

Table 9.10: Associations between DUP, premorbid adjustment and engagement

	Total Engagement Scale Score	Availability Subscale	Collaboration Subscale	Helpseeking subscale	Treatment Adherence Subscale
	Spearman's rho (p-value)	*Spearman's rho (p-value)*	*Pearson's rho (p-value)*	*Pearson's rho (p-value)*	*Spearman's rho (p-value)*
DUP (LOG_{10})	.196 (.191)	-.023 (.881)	.187 (.208)	.199 (.184)	.145 (.332)
Duration to DUP	-.062 (.687)	-.137 (.364)	-.188 (.211)	.032 (.835)	-.091 (.546)
Delay to helpseeking	.009 (.952)	-.052 (.726)	-.045 (.762)	.087 (.566)	-.066 (.660)

Delay to accessing Secondary mental health services	.004 (.981)	-.190 (.201)	.131 (.381)	.043 (.779)	-.018 (.906)
Delay to O.C.T	.076 (.616)	.099 (.509)	.110 (.464)	-.007 (.965)	.257 (.0981)
Mean Academic adjustment	**.405** (.003)**	.149 (.366)	.288 (.076)	.277 (.092)	.219 (.180)
Mean Social Adjustment	**.411** (.003)**	.083 (.616)	**.452** (.004)**	**.496** (.002)**	**.442 (.005)**
Childhood Social Adjustment	**.354* (.011)**	.073 (.661)	**.348* (.030)**	.359* (.027)	**.322* (.046)**
Childhood Academic Adjustment	.275 (.051)	.104 (.527)	.173 (.292)	.159 (.339)	.179 (.276)
Early Adolescent Social Adjustment	**.396** (.004)**	-.012 (.943)	**.375* (.019)**	**.526** (.001)**	.417** (.008)
Early Adolescent Academic Adjustment	**.385** (.005)**	.129 (.432)	.137 (.405)	.167 (.315)	.150 (.364)
Late Adolescent Social Adjustment	**.344 (.026)**	.234 (.175)	**.626** (.000)**	**.528** (.001)**	.657** (.000)
Late Adolescent Academic Adjustment	**.380* (.022)**	**.406* (.029)**	**.534** (.003)**	**.481** (.010)**	.338 (.073)

*p≤.05 (2-tailed); **p≤.01 (2-tailed);

A more complex picture emerged between premorbid adjustment and engagement by timepoint when DUP was controlled for. With regard to premorbid social adjustment, all correlations between engagement and the childhood timepoint became non-significant. For early adolescence there was a significant correlation between poorer social adjustment and higher overall engagement score (partial correlation, r=.383, p < .05), indicating greater engagement difficulties. However, at the subscale level, the only significant correlation that remained was between poorer premorbid social adjustment and diminished help-seeking (partial correlation, r=.486, p < .01). For late adolescence significant correlations remained between poorer social adjustment and greater engagement total score (partial correlation, r=.554, p < .01), and also with diminished collaboration (partial correlation, r=.597, p<.001), greater difficulties in helpseeking, (partial correlation, r=.470, p<.01) and poorer treatment

adherence (partial correlation, r=.514, p<.01). For premorbid academic adjustment, after DUP was controlled for, all significant associations between childhood and early adolescent timepoints and both engagement total score and subscales were rendered non-significant. However, for late adolescent premorbid academic adjustment significant correlations remained with poorer total engagement (partial correlation, r=.518, p<.01), and also greater difficulties on the availability (partial correlation, r=.473, p<.05) collaboration (partial correlation, r=.475, p<.05), and helpseeking (partial correlation, r=.413, p<.05) sub-scales.

Finally, when Tait and colleagues (2002) "poor engagement" criteria were applied there were significant differences between groups for premorbid social functioning (t=-2.742, df=17.98, p=.013), premorbid academic functioning (t=-2.173, df=36, p=.036), childhood social functioning, (t=-2.120, df=17.50, p=.049), early adolescent social functioning (t=-2.708, df=18.442, p=.014), late adolescent social functioning (t=-3.868, df=32, p=.001), and late adolescent academic functioning (t=-2.524, df=26, p=.018). For all significant differences the poor engagement group had significantly higher premorbid adjustment scores on the relevant developmental period or academic/social factor. Therefore, it would appear from the data that the magnitude of associations between poorer premorbid adjustment and subsequent difficulties with engagement increases over progressive developmental periods. There are also notable associations between poorer engagement and poorer premorbid social adjustment at all time points, but also with academic adjustment at late adolescence

Summary

The findings of this chapter provide a comprehensive overview of relationships between pre-existing psychologically and developmentally informed variables in FEP. This establishes a basis for the next chapter's investigation of the role of attachment in FEP. To summarise, I will evaluate the initial ten hypotheses outlined for this chapter.

In a reversal of the first hypothesis, increased positive psychotic symptomatology was not associated with DUP, although poorer premorbid adjustment did associate with

greater positive symptoms. The second hypothesis received some support, as although negative symptomatology was not consistently associated with overall poorer premorbid adjustment, the relationship between premorbid *social* adjustment and negative symptoms emerged as a consistent association. As highlighted in the systematic review, the magnitude of association between premorbid social adjustment and negative symptoms seemed to increase across developmental timepoints. As expected there was no relationship between negative symptoms and DUP.

The third hypothesis, that longer DUP would be associated with greater general psychopathology was not supported. However, supporting hypothesis four, poorer premorbid adjustment was associated with greater levels of General Psychopathology.

In contrast with the findings of Chapter 3 and refuting the fifth hypothesis, a significant association between DUP and premorbid adjustment was observed. Correlations between DUP and premorbid adjustment, particularly with regard to social adjustment were consistently comparable to a medium effect size (Cohen, 1988), indicating an association between longer DUP and poorer premorbid adjustment. This association was evident for all premorbid developmental points, and was repeated when DUP was dichotomised into long and short DUP groups a significant difference emerged between groups - long DUP being related to poorer overall social adjustment.

Both hypothesis six and seven were partially supported, with poorer quality of life consistently associated with childhood and early adolescent social adjustment in all sub-domains However, longer DUP was only associated with the psychological quality of life sub-domain.

Supporting hypothesis eight, DUP *was* significantly associated with a greater number of help-seeking attempts and *greater* self-initiated help-seeking. Furthermore, there was no consistent association between premorbid adjustment and help-seeking. In contrast to hypothesis nine, there was no relationship between DUP and engagement. However, supporting hypothesis ten, there was a strong correlation between both early and late adolescent premorbid social adjustment and overall engagement,

collaboration, help-seeking and treatment adherence – with poorer adjustment relating to poorer engagement. Furthermore, the magnitude of association was similar for both academic and social adjustment. It is of note that this pattern of relationships between DUP, premorbid adjustment and engagement (including help-seeking after the onset of treatment) is the reverse of the pattern of results for DUP, premorbid adjustment and help-seeking. To conclude, the current chapter demonstrates the importance of psychodevelopmental variables, represented by premorbid adjustment, in adaptation to the early phase of treatment for psychosis. This is in addition to the acknowledged importance of DUP. The next chapter wishes to explore psychodevelopmental aspects of FEP further, utilising an attachment framework.

Chapter 10

Attachment and Mentalisation in a First Episode Psychosis sample

The final aim of the clinical study was to investigate the distribution of attachment and mentalisation in an FEP sample, and also explore relationships between attachment and mentalisation, and of onset, clinical presentation and adaptation to psychosis. The specific hypotheses are as detailed at the conclusion of Chapter 5, and reiterated in Chapter 7. To explore relationships between the variables of interest, attachment status and reflective function in the FEP sample, a smaller sub-sample of individuals from the larger sample was utilised. Due to the pragmatic nature of the study it was not possible to conduct the AAI with all participants. Therefore, the attachment sub-sample was to an extent a convenience sampling, with inherent sampling bias. In addition, not all AAI interviews that had been conducted could be transcribed and coded in the timeframe afforded to the researcher. Reasons for non-recruitment to the AAI sub-sample are listed in Table 10.1.

Table 10.1: Reasons for non-administration of the AAI

Reasons for non-recruitment	Number of Individuals
Substance abuse precluded successful administration of AAI	2
Clinical presentation precluded administration of AAI	5
Transfer out of locality/discharged from service without AAI completed	3
Declined to complete AAI	4
Research participation ongoing, AAI not yet administered	9
Disengaged from services	2
AAI completed but not transcribed in research timeframe	6

In addition, as the AAI interview protocol encompasses questions on prototypical threats to the attachment system – e.g. loss, separation, abuse and neglect – a

separate assessment of the experience of neglect and abuse was not carried out. In all other regards recruitment and procedural aspects of their participation in the study were identical.

Descriptives of the Attachment sub-sample

Sample demographics of these individuals are detailed in Table 10.2. Thirty-Four individuals were included in the first episode sample. Twenty individuals (58%) were male. The mean age at first contact with clinical services for psychosis was 23.32 years (*s.d.* =7.56; median = 22 years; range = 15 – 45 years), and this variable was normally distributed (Kolmogorov-Smirnov Z = .884, *p*=n.s.). The median Duration of Untreated Psychosis was 20.5 weeks (mean= 50.09 weeks. IQR = 3.25 – 60.00 weeks, range = 1 – 520 weeks). The Mean Log_{10}DUP was 1.19 (*s.d.* = 0.74), corresponding to a DUP of 15.5 weeks.

Table 10.2: Sample demographics of the attachment sub-sample

	n (% of total sample)	Mean (s.d.)	Median (range.)
Gender			
Male	20 (58)		
Female	14(42)		
Self reported Ethnicity			
White British	32 (94.1)		
Other	2 (5.9)		
Diagnosis			
Schizophrenia	1		
Schizophreniform Disorder	1		
Schizoaffective Disorder	2		

Psychosis NOS	16		
Persistent Delusional Disorder	1		
Bipolar Disorder	10		
Mania with Psychotic Symptoms	1		
Recurrent Depressive disorder with Psychotic Symptoms	2		
Occupation at entry into treatment			
Full time paid	5 (14.7)		
Part time paid	2 (5.9)		
House work	2 (5.9)		
Voluntary	2 (5.9)		
Unemployed (benefits)	16 (47.1)		
Unemployed no benefits	2 (5.9)		
Student	4 (11.8		
Other	1 (2.9)		
Educational attainment			
Left school before age 16	4 (11.8)		
Left school at age 16	8 (23.5)		
Left School at age 17 – 18	8 (23.5)		
Completed College course	4 (11.8)		
Completed University degree	5 (14.7)		
Did not complete college/University course	2(5.9)		
Not recorded	3 (8.8)		
Age at first contact with treatment team (years)		23.32 (7.59)	22 (15 – 45)
Duration of Untreated Psychosis (Weeks)		50.09 (95.46)	20.5 (1 – 520)

Group comparisons were made between individuals with attachment data and those without to ascertain whether there were any significant differences between the groups. There were no significant differences between groups on demographics, or treatment related data or medication, except that the attachment group had a significantly greater mean number of days spent in hospital at 6 months after onset of treatment (52.77 days vs. 27.27 days, U= 320, *p*=.031). However, there were no differences in number of admissions, or proportion of individuals admitted to hospital at first contact. There were no differences between groups on onset, helpseeking and DUP related variables. Furthermore there were no differences between groups on developmental or academic/social subdivisions of the Premorbid Adjustment Scale.

With regard to clinical characteristics, there were no differences between groups on positive, negative or affective symptomatology. However, those individuals for whom attachment data was not available had significantly higher mean scores on the PANSS General Psychopathology scale (31.07 vs. 26.89, *t*=-2.011 *df* = 54, *p*=.049). There was also a significant difference between groups for the WHOQOL-BREF Environmental subscale, pertaining to an individual's quality of life in their everyday environment e.g. neighbourhood, ability to access day-to day services. Individuals from the attachment group had significantly higher mean scores on this factor than those from the non-attachment group (mean= 76.52 vs. 61.38; *t*=4.335, *df*= 55, *p*=.000).

There were no differences between groups on the Adolescent Coping Scale, however there were some differences noted for the IIP-32. Mean scores on the Distancing scale were significantly higher for the group without attachment data (19.59 vs. 13.5; *t*= -2.097, *df*= 52, *p*= .041). At subscale level, scores for those individuals without attachment data were also significantly higher on the Domineering/Controlling subscale compared to those individuals for whom attachment data was available (2.83 vs. 1.36; *t*= -2.291 *df*= 35.13, *p*= .028),

Attachment Hypotheses One and Two: What is the distribution of Attachment in FEP?

Attachment organisation was first categorised using a forced three-way classification, whereby nine individuals (26.5%) were classified as secure/freely autonomous, twenty-one individuals (61.8%) classified as Insecure/Dismissing, and four individuals (11.8%) classified as Insecure/Preoccupied (see Table 10.4). Therefore in a 2-way forced categorisation twenty five individuals (73.5%) could be classified as insecurely attached (see Table 10.3). Applying a four-way categorisation incorporating the classification of Unresolved/Disorganised (U/d) with regard to Loss or Abuse, the distribution was as follows: Ten individuals (29.4%) of the sample were classified as U/d, four (11.8%) classified as secure/freely autonomous, 17 (50%) classified as insecure/dismissing, and three (8.8%) as Insecure/Preoccupied (Table 10.5).

Table 10.3: Distribution of Secure/Insecure Attachment Organisation

Sample	AAI Classification		
	N	Secure/Autonomous n (%)	Insecure n (%)
FEP sample	34	9 (26.5)	25 (73.5)
Young Adults[a]	277	154 (56)	123 (44) *
Chronic mental illness sample[b]	42	4 (9.5)	38 (91.5) †

[a]Van IJzendoorn & Bakermans-Kranenburg (1996). [b]Tyrrell & Dozier (1997) Significant Distribution difference: * $X^2 = 11.68$, $df = 1$, $p = .001$; † $X^2 = 11.3$, $df = 1$, $p = 0.004$.

Table 10.4: Distribution of Three-Category Attachment Organisation

Sample	AAI Classification			
	n	Secure/Autonomous n (%)	Insecure/Dismissing n (%)	Insecure/Preoccupied n (%)
FEP sample	34	9 (26.5)	21 (61.8)	4 (11.8)
Young Adults[b]	277	154 (56)	76 (27)	47 (17) *
Chronic mental illness sample[a]	42	4 (9.5)	30 (71.5)	8 (19) †

[a]Van IJzendoorn & Bakermans-Kranenburg (1996). [b]Tyrrell & Dozier (1997). Significant Distribution difference: * $X^2 = 20.33$, $df = 2$, $p < 0.0001$; † $X^2 = 11.6$, $df = 2$, $p = 0.005$.

There were no differences between secure and insecure classified individuals in terms of age at first contact with clinical services. However, when the three-way categorisation was used, insecure dismissing individuals were significantly younger (median age = 18 years, IQR = 16.5 – 24.5 years) than individuals with secure (median age = 25 years IQR = 18.5 – 28.5 years) and preoccupied (median age = 28 years, IQR = 24.25 – 40.75 years) attachment organisations (K-W $X^2 = 6.32$, $df = 2$, $p = .043$). There was also a significant difference between groups under a four-way classification , with insecure/dismissing individuals (median age = 18 years, IQR = 16 – 22.5 years) continuing to have a significantly younger age at entry into services than individuals with secure (median age = 25.5 years IQR = 18.25 – 33.5 years) , preoccupied (median age = 31 years, IQR = 24 – 31 years), and U/d (median age = 25 years, IQR = 17 – 28 years) attachment organisations (K-W $X^2 = 8.03$, $df = 3$, $p = .045$). There were no differences between categories under 2, 3, or 4-way classifications for gender.

Table 10.5: Distribution of Four-Category Attachment Organisation

Sample	AAI Classification				
	n	Unresolved/ Disorganised n (%)	Secure/ Autonomous n (%)	Insecure/ Dismissing n (%)	Insecure/ Preoccupied n (%)
FEP sample	34	10 (29.4)	4 (11.8)	17 (50)	3 (8.8)
Young Adults[a]	225	44 (20)	107 (48)	47 (21)	27 (12) *
Chronic mental illness sample[b]	42	18 (41)	2 (4)	21 (48)	3(7) †

[a]Van IJzendoorn & Bakermans-Kranenburg (1996). [b]Tyrrell & Dozier (1997). Significant Distribution difference: * $X^2 = 24.93$, $df = 3$, $p < 0.0001$; † Non-Significant Distribution difference: $X^2 = 5.2$, $df = 3$, $p = 0.142$.

The distribution of two-category and three-category attachment classifications in the FEP sample was compared with the distribution of a non-clinical sample of college age adults derived from van IJzendoorn & Bakermans-Kranenburg's (1996) meta analysis, and also with Tyrrell & Dozier's (1997) sample of individuals with "chronic mental health difficulties" - comprised of individuals with a diagnosis of schizophrenia, schizoaffective or bipolar disorder (for more detailed information on these samples, the reader is directed to the original publications). These findings are summarised in Tables 10.3 and 10.4. In the 2-category classification as expected, there was a significant difference in the distribution of attachment categories between the FEP sample and the young adult sample ($X^2 = 11.68$, $df = 1$, $p = .001$). This difference was accounted for by the higher proportion of insecure attachment classifications in the FEP sample. Furthermore, there was also a significant difference in distributions between the FEP sample and the chronic mental health difficulty sample ($X^2 = 11.3$, $df = 1$, $p = .004$). In contrast to the above difference, this was a reflection of the higher proportion of secure attachment classifications in the FEP sample.

A similar set of results emerged for the three-category classification distributions. Again, as expected there was a significant difference in the distribution of attachment categories between the FEP sample and the young adult sample, (X^2 = 20.33, df = 2, p < .0001). This difference was explained by the higher proportion of insecure/dismissing attachment classifications, and the lower proportion of secure attachment classifications in the FEP sample. There was also a significant difference in distributions between the FEP sample and the chronic mental health difficulty sample (X^2 = 11.6, df = 2, p = .005), again reflecting the higher proportion of secure attachment classifications in the FEP sample. Therefore, the predictions of the first attachment hypothesis in Chapter 7 – that attachment representations in psychosis are more likely to be insecure than secure, compared to a non-clinical group; a substantial proportion of individuals will report a dismissing attachment states of mind, and the distribution will be more varied in a first episode group, compared to a repeat-episode sample – were all supported by the current data set.

For the second attachment hypothesis outlined in Chapter 7, the results were also as hypothesised. When the U/d classification was added, there was again a significant difference between the FEP sample and the non-clinical young adult sample (X^2 = 24.93, df = 3, p < .0001). From Table 10.5 it can be seen that there is a substantially higher proportion of insecure/dismissing and lower proportion of Secure classifications in the FEP sample. However, although there are a higher proportion of U/d classifications in the FEP sample, there does not appear to be a significant difference in distribution when the FEP sample is compared with the chronic mental health sample. Indeed, compared with the three category distribution, it can be seen that, in the FEP sample there are less individuals in the secure/autonomous classification when the U/d classification is used.

Attachment Hypothesis Three - Mentalisation (Reflective Function) in the Attachment subsample.

Mentalisation was also measured in the attachment subsample, operationalised via Reflective Function (RF, Fonagy et al, 1991). The mean score for RF was 3.06 (s.d. = 1.86, median = 3, range = 0 – 7), which was equivalent to Questionable or Low RF. This mean score is similar to the mean score for RF of 3.7 (s.d. = 1.8) reported for a psychiatric sample with DSM-IV personality disorders (Fonagy et al, 1996). The Kolmogorov-Smirnov test indicated that RF scores were normally distributed (K-S Z = 1.106, p = .152). Given the hypothesis that secure attachment would be associated with higher RF, mean scores for RF were compared according to attachment classification. These findings are detailed in Table 10.6. Given the small sample size, all differences between variables were examined using the non-parametric Mann-Whitney U test for two independent samples, and the Kruskal-Wallis test for multiple independent samples.

Table 10.6: Attachment Classification and Reflective Function

Attachment Classification	Reflective Function			
	Mean	S.d.	Median	Range
2- Category [a]				
Secure	4.00	1.41	5	1 - 5
Insecure	2.72	1.90	3	0-7
3-Category[b]				
Secure/Autonomous	4.00	1.41	5	1 – 5
Insecure/Dismissing	2.29	1.52	3	0 – 5
Insecure/Preoccupied	5.00	2.31	5	3 – 7

4-Category[c]				
Secure/Autonomous	4.00	1.15	4	3-5
Insecure/Dismissing	2.29	1.57	1	1- 5
Insecure/Preoccupied	4.33	2.31	3	3 – 7
Unresolved/Disorganised	3.60	2.07	3.5	0 - 7

[a] U = 62.0, Z = -2.06, p = .033; [b] X^2 = 9.5, df = 2, p = .009 [c] X^2 = 5.9, df = 3, p = .110

As predicted, with regard to two-category attachment classifications RF was significantly higher for secure attachment classifications than insecure classifications (U = 62.0, Z = -2.06, p = .033). When three-category classifications of attachment were scrutinised, significant differences between groups emerged for RF score (X^2 = 9.5, df = 2, p = .009). From Table 10.6 it can be seen that individuals with both insecure/preoccupied and securely attached classifications have higher RF than individuals with insecure/dismissing attachment classifications. However, there were no differences on RF score between groups for the four-way attachment classification. There were no differences in mean RF scores between genders (males= 2.75, *s.d.* = 1.77; females = 3.5, *s.d.* = 1.95), and there was no significant correlation between age at first contact with clinical services and RF score (Pearson r = .225; p = .200). Thus the support for the hypothesis that secure attachment is linked to higher RF is unclear when 3 and 4-category classifications of attachment are used.

Are attachment classification and RF associated with clinical characteristics?

Given the findings of the analogue study, it was decided to investigate the possibility of associations between attachment classifications and clinical variables, using Mann-Whitney tests for the analysis. There were no differences between attachment classification groups on PANSS Positive, Negative, General Psychopathology or BDI affective symptoms scores. This held for 2, 3 and 4 category classification frameworks. Reflective function was not correlated with PANSS Positive, Negative, or General Psychopathology scores. Furthermore, no significant relationships emerged between attachment classification and the PANSS items for hallucinations, delusions and paranoia. This contrasts with the findings of the analogue study, where

attachment style was related to both paranoia and hallucinatory phenomena. With regard to diagnosis, there were no differences between psychotic and affective-psychotic groups on 2, 3 or 4-way attachment classification, dichotomised RF classification or RF score.

With regard to quality of life there were no significant differences between groups for 2- and 3-category attachment classifications. In contrast, RF scores were significantly negatively correlated with physical quality of life (r= -.478, p= .005) and psychological quality of life (r= - .407, p= .019). Once again, if age was included as a partial correlate these associations were no longer significant. These relationships were maintained when RF was treated as a categorical variable, with individuals with moderate to high RF having significantly lower physical (**U** = 44.00, Z = -2.80, p = .004) and psychological quality of life (**U** = 63.00, Z = -2.05, p = .040).

Attachment Hypothesis Four - Are attachment and mentalisation associated with premorbid adjustment, DUP and other onset characteristics?

In line with attachment hypothesis four, attachment classification and RF were analysed in relation to premorbid adjustment, DUP and related variables, and aspects of onset including hospitalisation at first admission, medication at first contact and use of the Mental Health Act. Tables 10.7 - 10.9 display descriptive statistics for premorbid adjustment variables, subdivided by attachment classification, and dichotomised RF scores (absent to low/moderate to high). Correlational data for RF scores are displayed in Table 10.10.

From scrutiny of the median values listed in Table 10.8 it can be seen that, in contrast to the hypothesis, there were no significant differences between attachment classifications and DUP, duration to onset of DUP, delay o help-seeking, delay to contact with secondary mental health services, or delay to O.CT. This null finding related to 2-category, 3-category and 4-category attachment classifications. Therefore there was no support for the hypothesis that secure attachment would be associated with shorter DUP. There were also no significant relationships between attachment classifications and total, self initiated or other initiated helpseeking. There were also no significant correlations between RF and helpseeking.

Also contrary to the hypothesis, no significant relationships emerged between 2-category, 3-category, or 4-category attachment classifications and premorbid adjustment (see Table 10.8). No significant relationships emerged between Reflective Function and mean premorbid social and academic adjustment.

Attachment Hypotheses Five and Six: Are attachment and RF associated with engagement in the first year of treatment for FEP?

Reflecting hypotheses five and six that secures attachment classification, and higher RF, and better engagement in the first year of treatment for FEP were investigated using Mann-Whitney U tests for categorical variables and Pearson correlations for RF scores (Table 10.11).

Group comparisons between attachment classification, dichotomised RF scores and engagement are displayed in Table 10.10. When the 2-category classification of attachment was utilised, significant relationships emerged between attachment and total engagement score (Mann-Whitney U = 14.5, -2.566, p=.008), and also between attachment and the helpseeking subscale of the SES (Mann-Whitney U = 20.0, -2.196, p=.030). As hypothesised, compared to individuals with insecure attachment classifications, those with secure classifications had significantly better clinician rated engagement, significantly better help-seeking, and were rated as being more available for appointments with clinicians.

Table 10.7: Attachment classification and RF and their relation to DUP and helpseeking

Attachment Classification	DUP (weeks)	Duration to DUP onset (weeks)	Delay to Helpseeking (Weeks)	Delay to contact with Secondary MH services (weeks)	Delay to O.C.T. (Weeks)	Total no. of helpseeking attempts	Total no. of Self-initiated helpseeking attempts	Total no. of Other-initiated helpseeking attempts
2-category								
Secure/Autonomous	20 (163)	53 (396)	3 (105)	3 (41)	7 (164)	2 (4)	0 (5)	1.5 (3)
Insecure -2 category	21 (520)	80 (600)	6 (120)	2 (401)	2 (124)	2.5 (8)	0 (5)	1 (7)
3-Category								
Secure/Autonomous	20 (163)	53 (396)	3 (105)	3 (41)	7 (164)	2 (4)	0 (5)	1.5 (3)
Insecure/Dismissing	23 (123)	145 (600)	6 (111)	2 (60)	2 (124)	2.5 (8)	0 (5	1 (7)
Insecure/Preoccupied	18 (520)	46 (99)	9 (120)	4 (401)	3 (13)	2.5 (4)	1.5 (3)	1 (3)
4-category								
Secure/Autonomous	21 (26)	14 (396)	8 (50)	6 (10)	13 (28)	2 (2)	0 (0)	2 (2)
Insecure/Dismissing	20 (66)	145 (600)	6 (52)	2 (60)	2 (60)	2 (8)	0 (3)	2 (2)
Insecure/Preoccupied	15 (520)	59 (99)	2 (120)	7 (401)	1 (13)	3 (3)	2 (2)	1 (30)
Unresolved	44.5 (163)	59.5 (538)	7 (111)	1 (41)	3.5 (164)	2 (5)	0 (5)	1 (3)
Absent to Low RF	59 (547)	22 (520)	4 (120)	3 (401)	2 (124)	2 .5 (8)	0 (5)	1.5 (7)
Moderate to High RF	145 (591)	18 (162)	6 (105)	2 (60)	5 (164)	2 (4)	0 (5)	1 (3)

.Note: All values given as median, (Range)

Table 10.8: Attachment classifications and RF and their relationship to premorbid social adjustment

Attachment Classification	Mean Premorbid Social Adjustment		Childhood Social Adjustment		Early Adolescent Social Adjustment		Late Adolescent. Social Adjustment	
2-category	Mean, S.D.	Median, IQR	Mean, S.D.	Median, IQR	Mean, S.D.	Median, IQR	Mean, S.D.	Median, IQR
Secure/Autonomous	.193 (.137)	.156 (.067)	.219 (.244 - .307)	.125 (.021 - .437)	215 (.171)	.222 (.028 - .375)	.153 (.138)	.139 (.056 - .208)
Insecure -2 category	.168 (.162)	.146 (-062 - .208)	.181 (.207)	.167 (.000 - .250)	.162 (.199)	.111 (.056 - .278)	.222 (.225)	.167 (.083 - .278)
3-Category								
Secure/Autonomous	.193 (.137)	.156 (.067)	.219 (.244 - .307)	.125 (.021 - .437)	215 (.171)	.222 (.028 - .375)	.153 (.138)	.139 (.056 - .208)
Insecure/Dismissing	.129 (.082)	.125 (.062 - .187)	.154 (.165)	.083 (.000 - .250)	.114 (.100)	.111 (.056 - .167)	.188 (.222)	.111 (.028 - .250)
Insecure/Preoccupied	.349 (.316)	.240 (.135 - .672)	.312 (.349)	.167 (.104 - .667)	.389 (.385)	.278 (.111 - .778)	.333 (.227)	.250 (.181 - .569)

4-category								
Secure/Autonomous	.292 (.125)*	.292 (.167 - .417)	.333 (.300)	.250 (.083 - .667)	.296 (.140)	.278 (.167 - .444)	.259 (.170)	.222 (.111 – 444)
Insecure/Dismissing	.124 (.085)	.125 (.062 - .161)	.115 (.129)	.083 (.000 - .167)	.115 (.104)	.083 (.056 - .167)	.202 (.240)	.167 (.000 - .278)
Insecure/Preoccupied	.389 (.374)	.250 (.104 - .812)	.361 (.411)	.167 (.083 - .833)	.426 (.463)	.278 (.056 - .944)	.370 (.262)	.278 (.167 - .667)
Unresolved	.153 (.094)	.146 (.062 - .219)	.222 (.208)	.167 (.042 - .417)	.161 (.148).	.167 (.000 - .306)	.111 (.072)	.111 (.056 - .167)
Absent to Low RF	.176 (.171)	.146 (.073 - .208)	.171 (.218)	.083 (.000 - .250)	.175 (.207)	.167 (.028 - .278)	.222 (.236)	.111 (.056 - .306)
Moderate to High RF	.171 (.120)	.146 (.062 - .250)	.233 (.207)	.167 (.083 - .375)	.178 (.165)	.083 (.056 - .347)	.153 (.083)	.167 (.083 - .222)

Table 10.9: Attachment classification and RF and their relationship to premorbid academic adjustment

Attachment Classification	Mean Premorbid Academic Adjustment		Childhood Academic Adjustment		Early Adolescent Academic Adjustment		Late Adolescent Academic Adjustment	
	Mean (S.D.)	Median, (IQR)	Mean (S.D.)	Median (IQR)	Mean (S.D.)	Median (IQR)	Mean (S.D.)	Median (IQR)
2-category								
Secure/Autonomous	.274 (.215)	.222 (.118 - .486)	.240 (.233)	.208 (.021 - .500)	.333 (.278)	.333 (.042 - .583)	.286 (.267)	.250 (.000 - .417)
Insecure -2 category	.262 (.156)	.250 (.194 - .333)	.206 (.163)	.167 (.083 - .333)	.377 (.226)	.417 (.250 - .500)	.333 (.219)	.333 (.148 - .500)
3-Category								
Secure/Autonomous	.274 (.215)	.222 (.118 - .486)	.240 (.233)	.208 (.021 - .500)	.333 (.278)	.333 (.042 - .583)	.286 (.267)	.250 (.000 - .417)
Insecure/Dismissing	.267 (.141)	.250 (.194 - .333)	.193 (.127)	.167 (.083 - .333)	.417 (.211)	.417 (.333 - .500)	.367 (.223)	.375 (.208 - .521)
Insecure/Preoccupied	.236 (.240)	.208 (.021 - .479)	.271 (.299)	.208 (.021 – 583)	.188 (.219)	.167 (.000 - .360)	.250 (.215)	.250 (.042 - .458)
4-category								
Secure/Autonomous	.185 (.105)	.139 (.111 -	.139 (.127)	.167 (.000 -	.278 (.347)	.167 (.000 -	.208 (.295)	.208 (.000 - .479)

		.306)		.250)		.667		
Insecure/Dismissing	.250 (.146)	.236 (.194 - .306)	.188 (.138)	.167 (.083 - .333)	.396 (.220)	.417 (.271 - .500)	.333 (.236)	.333 (.125 - .479)
Insecure/Preoccupied	.204 (.284)	.083 (.000 - .528)	.250 (.363)	.083 (.000 - .667)	.139 (.241)	.000 (.000 - .417	.222 (.255)	.167 (.000 - .500)
Unresolved	.340 (.185)	.361 (.222 – .472)	.278 (.200)	.250 (.125 - .456)	..417 (.217)	.500 (.250 - .583)	.365 (.235)	.375 (.187 - .542)
Absent to Low RF	.276 (.147)	.250 (.194 - .347)	.198 (.166)	.167 (.083 - .167)	.397 (.234)	.417 (.250 - .500)	.351 (.205)	.375 (.167 - .500)
Moderate to High RF	.242 (.217)	.222 (.021 - .403)	.250 (.215)	.208 (.063 - .396)	.300 (.240)	.375 (.000 - .521)	.250 (.280)	.250 (.000 - .417)

Table 10.10: Correlations between RF score, DUP, helpseeking and premorbid adjustment.

	Correlation with RF score *R* (*p*)
DUP	.088(.631)
Duration to DUP onset	.273 (.131)
Delay to Helpseeking	.168 (.358)
Delay to contact with Secondary MH services	-.055 (.765)
Delay to O.C.T.	-.013 (.942)
Total helpseeking attempts	-.166 (.382)
Total Other-initiated helpseeking attempts	.079 (.677)
Self-initiated helpseeking attempts	-.347 (.060)
Premorbid Social Adjustment	.119 (.523)
Premorbid Academic Adjustment	.023 (.902)
Childhood Social Adjustment	.355 (.050)
Early Adolescent Social Adjustment	.078 (.677)
Late Adolescent Social Adjustment	.035 (.869)
Childhood Academic Adjustment	.151 (.419)
Early Adolescent Academic Adjustment	-.176 (.342)
Late Adolescent Academic Adjustment	-.092 (.691)

When differences in engagement were examined between attachment categories under the 3-category delineation, a significant relationship remained between attachment and total engagement scale (Kruskal-Wallis X^2= 6.80, *df* = *2*, *p*= .026). Scrutiny of median scores suggested that this difference was accounted for by lower scores, and thus better engagement in the secure attachment group, but also higher

scores, indicating poorer engagement in the insecure-preoccupied group. A significant between-groups difference also emerged for the treatment adherence sub-scale (Kruskal-Wallis X^2= 6.46, *df* = *2*, *p*= .033), indicating that individuals with an insecure-preoccupied attachment classification had significantly poorer medication adherence than individuals with secure and insecure-dismissing attachment organisations. This finding was not predicted by the attachment hypotheses. However, when differences in engagement were examined using the 4-category attachment classification, no significant differences were evident between groups. Furthermore, in contrast to the hypothesised relationship, total engagement and engagement subscales were not related to dichotomised Reflective Function, nor correlated with RF score (see Table 10.12). In the current sample reflective function does not appear to be associated with clinician-rated engagement with mental health services.

Table 10.11: Attachment classifications, RF and engagement with clinical services

Attachment Classification *2-category*	n	Total Engagement Scale score Median (IQR)	Availability Sub-scale Median (IQR)	Collaboration subscale Median (IQR)	Helpseeking subscale Median (IQR)	Treatment Adherence subscale Median (IQR)
Secure/Autonomous	9	1 (0 – 5.25)*	0 (0 - 0.25)	0.5 (0 – 1.25)	0 (0 – 4)*	0 (0 -0)
Insecure -2 category	23	7 (3 – 13.5)	1 (0 – 2)	2 (0 – 3)	4 (2.5 – 6)	0 (0 – 3)
3-Category						
Secure/Autonomous	7	1 (1 – 5.25)**	0 (0 - 0.25)	0.5 (0 – 1.25)	0 (0 – 4)	0 (0 – 0)**
Insecure/Dismissing	13	6 (3 – 13.5)	1 (0 – 2.5)	1 (0 – 3)	4 (3 – 6)	0 (0 – 2)
Insecure/Preoccupied	4	11 (3 – 19.75)	0.5 (0 – 1)	3 (0.75 – 6.75)	3.5 (5 – 10.25)	3 (0.5 – 4)
4-category						
Secure/Autonomous	3	3 (0 – 3)	0 (0 – 0)	1 (0 – 1)	2 (0 – 2)	0 (0 – 0)
Insecure/Dismissing	11	1 (0 - 3)	1 (0 – 3)	1 (0 – 3)	3 (3 – 6)	0 (0 – 2)

Insecure/Preoccupied	3	9 (1 – 9)	0 (0 – 0)	3 (0 – 3)	2 (0 – 2)	2 (0 – 2)
Unresolved	7	5 (0 – 13)	0 (0 – 1)	1 (0 – 3)	0 (0 – 4)	.0 (0 – 4)
Absent to Low RF	14	5.5 (1 – 13.75)	0 (0 – 2)	0.5 (0 – 3.5)	3 (0.75 – 6)	0 (0 – 2)
Moderate to High RF	9	6 (2.5 – 11)	0 (0 – 1.5)	2 (0.5 – 3)	4 (1 – 4.5)	0 (0 – 4)

Note: All values reported as median, (IQR) * Significant difference: Mann-Whitney U, $p<.05$; **Significant difference Kruskal-Wallis X^2, $p<.05$;

Attachment hypothesis 7 - Are attachment and RF associated with psychological variables in the first year of treatment?

With regard to psychological variables, attachment and RF were analysed in relation to the ACS and the IIP-32. There were no significant differences between attachment classification and coping subscales. RF score was not correlated with scores on any of the ACS subscales, however when RF was classified according to presence of moderate to high RF or absent to low RF, a significant relationship emerged with the Reference to Others ACS subscale (U = 58.5, Z = -1.99, p = .047). Individuals with moderate to high RF were significantly more likely to utilise this method of coping than individuals with low to absent RF (median score = 60 vs. 57.5).

Table 10.12: Correlations between RF and Engagement with clinical services.

	Engagement Scale total Score	Availability subscale	Collaboration subscale	Helpseeking Subscale	Treatment Adherence subscale
	r (p)	*r (p)*	*r (p)*	*r (p)*	*r (p)*
RF score	0.16 (.941)	-.019 (.930)	.089 (.679)	-.152 (.488)	.39 (.857)

With regard to interpersonal problems, no relationship emerged between attachment classifications (at 2, 3 or 4 category level) and IIP-32 sub-scales. However, significant associations emerged between RF score and the Affiliating scale (r=.379, p= .033), self-sacrificing (r=.421, p= .015) and intrusive-needy (r=.446, p= .010) sub-scales of the IIP-32. When RF was treated as a categorical variable, these significant relationships were retained, with individuals with moderate to low RF having significantly lower scores for the self-sacrificing subscale (U = 58.50, Z = -2.40, p = .015) and intrusive-

needy subscale (U = 62.00, Z = -2.16, p = .029). Given the possibility of a confounding relationship with the reference to Others subscale of the ACS, correlations with this variable were investigated. The IIP-32 Affiliating scale and the self-sacrificing subscale were not significantly correlated with the Reference to Others subscale (r = .234, p= .212 and r = .274, p= .135 respectively). However, the Reference to Others subscale and the IIP-32 Intrusive-Needy subscale were significantly correlated (r = .492, p= .006). Therefore, in the current sample the evidence for the hypothesis that higher RF is related to better psychological functioning is at best mixed.

Summary

Consistent with the literature on attachment representations in clinical groups, the clinical study reported a predominance of insecure (dismissing and preoccupied) attachment classifications. Using van IJzendoorn & Bakerman-Kranenburg's (1996) meta-analysis as a comparison sample, this distribution of 3-way classifications was significantly different from a sample of college attending young adults. However, the distribution of 3-way classifications in the current study is significantly different from Tyrrell & Dozier's (1997) sample of individuals with a complex mental health diagnosis. Indeed, in contrast to the multiple episode group, 25% of the current sample were classified as Secure/Autonomous on the 2-way categorisation.

As hypothesised in attachment hypothesis two, there was a significant difference between 4-way classifications in the FEP sample compared to the non-clinical young adult sample. When the multiple episode sample was compared with the FEP sample no differences in distribution emerged, although there was a higher proportion of U/d classifications in the multiple episode sample (41% vs. 29%). When one compares the proportions of individuals classified as secure/autonomous under 3- and 4-way classifications (the difference being accounted for by individuals designated Unresolved/Secure); there is a substantial drop in the proportion of secure classifications. In contrast, the proportion of individuals classified as insecure/preoccupied and insecure/dismissing remained relatively stable

Consistent with attachment hypothesis three, when RF scores were compared using the 3-category attachment classification, it was apparent that RF scores for individuals with either secure or insecure/preoccupied attachment classifications were higher than for those individuals with dismissing attachment representations. However, there were no differences in RF scores between groups on the 4-way attachment classifications, suggesting the relationship between RF and attachment was eliminated once unresolved attachment representations were included.

In contrast to the study hypothesis, there were no relationships between attachment classification and either DUP, helpseeking or premorbid adjustment. Nor were these variables related to RF. However, attachment classification on 2-and 3-category classifications was related to engagement with services after initiation of treatment. In particular, secure attachment classifications were associated with better overall engagement and better help-seeking, in comparison to insecure attachment classification, In contrast to the hypothesised relationship, RF was not associated with engagement.

Finally, a different picture emerged with regard to psychological variables. Higher RF scores were associated with more reliance on others as a method of coping, and also greater difficulties with Affiliating related interpersonal problems. At least with regard to interpersonal problems, this relationship was in the opposite direction from the hypothesised relationship. In contrast, attachment classification had no significant relationships to coping style or interpersonal problems. Taken in tandem, the more global evaluation of engagement with clinicians appeared to be more influenced by attachment representations, whereas the more interpersonally focussed coping and interpersonal problem variables were more related to levels of RF, albeit with higher RF serving to heighten the individual's awareness of interpersonal difficulties.

In summary, this chapter has provided preliminary data on the composition of attachment classifications and the distribution of RF in an FEP sample, and compared

these variables to key clinical, onset and adaptation variables in FEP. The following section will discuss these findings in the context of a broader psychodevelopmental framework, and integrate them with the findings of the earlier analogue study.

Section IV:

Discussion

The implications of an attachment informed understanding of psychosis.

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Chapter 11

The implications of an attachment informed understanding of psychosis.

This thesis will be concluded in two parts. Firstly, I will summarise the results of Chapters 6 – 10, regarding the analogue study of attachment style and the clinical study of attachment representations, DUP and helpseeking in FEP. These results will be discussed with regard to the stated hypotheses (see Chapter 5, pps. 118 – 165), but are also grounded within the context of the systematic review findings and the more general psychodevelopmentally informed perspective of psychosis discussed in Chapter 3. Secondly, the remainder of the discussion will focus on the implications of the thesis in terms of advancing our understanding of psychological processes involved in the onset of, and adaptation to the experience of psychosis. I also aim to outline ways in which an attachment and mentalisation based conceptualisation of psychosis can be used to develop new clinical interventions which better reflect the needs of the individual as they adapt to the experience of psychosis; while simultaneously helping to create a structure for promoting recovery and staying well. To conclude, I will also consider the role attachment processes may play in enhancing strategies for primary prevention of psychotic disorders, and revisit the proposition raised in Chapter 1 that psychosis and schizophrenia may be viewed as disorders with an affective component, rather than non-affective disorders.

Overview of studies

The analogue study (Study 1) presented a test of the validity of the theoretical link between attachment and psychosis, using self-reported assessment of attachment style and psychotic phenomenology, The finding of a relationship between insecure attachment, interpersonal problems and paranoid ideation replicates previous studies of attachment style and psychotic phenomenology (Pickering et al, 2008). However, to the author's knowledge this study is the first to report an association between attachment, interpersonal problems and hallucinatory phenomena. Furthermore, it establishes that the investigation of attachment in psychosis is a conceptually valid

research aim. The study also makes explicit that attachment in adulthood, either through attachment style or attachment representations, is grounded within an interpersonal context. This was evidenced by the association between attachment, interpersonal problems and endorsement of psychotic phenomena. The analogue study therefore moves away from investigating associations between (insecure) attachment style and schizotypal phenomena (e.g. Berry et al 2006) and instead focuses on the role of attachment style as a strategy for coping with insecurity, with associated costs in terms of increased endorsement of psychotic phenomena. This position is consistent with findings from the attachment literature (Stein, et al., 2002) and social mentality informed models of psychotic symptoms (Gilbert, 2001; Gumley & Schwannauer, 2006).

Building on the analogue study, the clinical study represents a comprehensive characterisation of a representative sample of individuals presenting to mental health services for treatment of FEP. It is of comparable size to the last study of FEP conducted in Scotland (McCreadie, Wiles, Grant, Crockett, Mahmood, Livingston, et al., 1989), although the current study embraced a broader definition of FEP than the previous authors' narrow definition (derived from the neo-Kraepelinian Feighner (Feighner, Robins, Guze, Woodruff, Winokur, & Munoz, 1972) criteria for schizophrenia). The current study is also the first in Scotland to characterise an FEP cohort since the introduction of treatment models which follow early intervention principles (Addington, 2007). Furthermore, symptomatology, demographic and onset related variables were consistent with contemporary FEP cohorts (e.g. Melle et al., 2004; Addington et al 2005a)., and the data presented in Chapter 3. Therefore, it can be concluded that the sample is broadly representative of a contemporary FEP cohort.

DUP and Premorbid Adjustment reconsidered

In contrast with the findings of the systematic review, a significant association between DUP and premorbid adjustment was observed. Indeed, correlations between

DUP and premorbid adjustment, particularly with regard to social adjustment were consistently comparable to a medium effect size (Cohen, 1988), indicating an association between longer DUP and poorer premorbid adjustment. This association between DUP and premorbid adjustment was evident for all premorbid developmental points. When DUP was dichotomised into long and short DUP groups a significant difference emerged between groups, long DUP being related to poorer overall social adjustment. This unexpected result perhaps reflects the impact of early intervention strategies in terms of providing clear referral pathways for clinicians. The studies collated in the systematic review represent the first wave of evaluations of FEP treatment programmes, where the reduction of DUP was one of the primary clinical objectives. It is possible that the relative entrenchment of early intervention principles within clinical care for psychosis (e.g. Edwards & McGorry 2002) has helped to ameliorate the pronounced effect of DUP reported in the first wave of studies after Wyatt's (1991) initial conceptualisation of DUP. Thus DUP is now an established concept, which can be systematically measured, and can also be targeted for clinical intervention. Interestingly, within the context of an established EI treatment programme, median DUP has been reduced to 15 weeks (Joa, Johannessen, Auestad, Friis, McGlashan, Melle, et al., 2008), a duration identical to the current study. The aforementioned authors interpret this as a regressive result in comparison to an earlier intensive public health information campaign which reduced median DUP to 5 weeks. However, the median value of 15 weeks constitutes a useful comparison for the current study. Perhaps, without further public interventions it is difficult to reduce DUP beyond 15 -20 weeks. Therefore, once the effect upon clinical practice of DUP reduction plateaus, the effect of the interaction between DUP and premorbid adjustment may again become apparent. Alternatively, the current findings may also be consistent with Norman and colleagues (2007b) finding that premorbid adjustment moderated the relationship between DUP and outcome, with DUP being a more powerful predictor of outcome for individuals with good premorbid adjustment. Although the current study was of cross-sectional design, and thus unable to assess outcome over longer periods, the findings do seem to suggest that there is a complex inter-relationship between premorbid adjustment and DUP, which may moderate or mediate outcomes in both symptomatic and functional domains.

As noted in Chapter 3, further studies which comprehensively characterise premorbid adjustment in terms of both developmental period, and social/academic domains are desirable. Indeed, the results of the current study support a psychodevelopmental perspective on the evolution of the symptomatology of psychosis, whereby sub-optimal functioning in the social domain is a potential indicator of developing difficulties which if unidentified may culminate in a florid psychotic episode. This is also consistent with the literature on At Risk Mental States which highlights decline in social functioning as a risk marker for future psychosis (e.g. Addington, Francey & Morrison, 2005d). Furthermore, McGlashan (2008) has recently proposed that assessment of premorbid adjustment, if administered in a clear and detailed manner, may in fact be more prognostically informative (and thus also in improving prediction of adaptation to psychosis, and identifying treatment strategies appropriate to the needs of the individual) than DUP. The same author also emphasises that DUP, although constituting "*a crisis of its own should not be taken to constitute the pathogenic process in schizophrenia. . .DUP is a marker (or epiphenomenon) of course, not it's determinant*" (p. 4). Although a degree of adherence to a Kraepelinian biological stance can be interpreted from the language of this statement, it is also indicates renewed interest in the possibility that pre-onset psychodevelopmental factors in psychosis are of importance in exploring adaptation and heterogeneity in outcome.

Premorbid adjustment was not consistently associated with untreated non-specific illness (i.e. the time period from onset of non-specific symptomatology to the onset of a clearly defined DUP), or delay to help-seeking. However, there was a significant association between mean premorbid social adjustment and delay to contact with secondary services – i.e. the duration from onset of help-seeking to contact with specialised mental health services (not necessarily for psychosis). Poorer social adjustment appeared to create difficulties in being able to access these services once help-seeking had been initiated, indicative of an underlying difficulty in effectively and consistently asserting the need for help. That said, premorbid adjustment was

largely unrelated to the number of help-seeking attempts, suggesting that adjustment was not related to the act of help-seeking itself. Rather, the relationship between premorbid adjustment and delay to contact with secondary services may have been indicative of a general difficulty with the capacity to alert significant other and/or services to the disruptive effect of psychosis. Alternatively, help-seeking may be reciprocally related to the clinical services response to the individual. It may be the case that the clinical presentation of individuals with poorer premorbid social adjustment may not be able to elicit a rapid response from clinicians. This is not inconsistent with Larsen et al's (1998) observation that individuals with poorer premorbid functioning often have a more insidious presentation, which does not come to the attention of clinicians as rapidly as an acute deterioration in function.

In contrast, DUP *was* significantly associated with a greater number of help-seeking attempts. Therefore, it does not appear that longer DUP is caused by a lack of help-seeking. Indeed a longer DUP was associated with *greater* self-initiated help-seeking. Furthermore, a longer duration of non-specific symptoms prior to onset of psychosis was associated with *greater* help-seeking after onset of psychosis. However, when DUP was subdivided into its constituent components an interesting dichotomy emerged. Longer delay to help-seeking was associated with greater self-initiated help-seeking. Thus, although these individuals may not recognise the need for treatment initially, once help-seeking is initiated, they are more likely to help-seek of their own accord. In contrast, greater other initiated help-seeking was associated with a longer duration between initiating help—seeking and contact with secondary services, and also a longer duration to Onset of Criterion Treatment. *Other* initiated help-seeking included help-seeking via family and friends, but also reflected clinician initiated pathways, such as Accident and Emergency practitioners referring on to GP. Thus, those individuals who do not themselves initiate help-seeking manifest longer delay within the portion of DUP that bridges help-seeking to successful treatment. Therefore, it would appear that those whom the individual relies on (either implicitly or explicitly) to help-seek are less proficient at guiding the individual onto a successful treatment pathway. In particular, the role of GP's in identifying psychotic symptomatology has frequently been highlighted as integral to

successful reduction of DUP and expediating the provision of early intervention (Lincoln et al., 1998; Skeate et al., 2002; Addington et al., 2002). Furthermore, it has been suggested that GP's are often consulted by individuals in the earlier stages of the onset of psychosis, where the individuals articulations of their difficulties may be vague, non-specific, or guarded in comparison to later stages of the DUP, where symptoms are more florid, and that recognising these signs and appropriately referring on is a key challenge (Simon, Lauber, Ludewig, Braun-Scharm, & Umbricht, 2005; Platz, et al., 2006). Although the current study did not deconstruct other-initiated help-seeking by instigator, it seems reasonable to interpret the above results as consistent with a complex process of help-seeking where GP involvement is indeed an important aspect of the pathway to care.

Clinical presentation

In addition, the predictions from the systematic review regarding associations between DUP, premorbid adjustment and positive psychotic symptomatology were reversed - with the current study failing to find an association between DUP and positive symptoms, although significant associations between both childhood and early adolescent social premorbid adjustment and positive symptoms emerged. One explanation of this result is the relatively young age of the sample, perhaps suggesting that the current sample have come to services earlier due to the emergence of psychotic symptomatology concurrent with sub-optimal development. However, the methodology of the study was designed to ensure that the assessment of DUP and premorbid adjustment were independent, and the period indicated for premorbid adjustment was terminated after onset of symptoms, e.g. if a participant had a DUP beginning in early adolescence, late adolescent adjustment was not measured. Therefore, earlier age of onset of symptoms should not be a confounding variable. Furthermore, the reporting of premorbid adjustment in the current sample was comprehensive in breaking down adjustment by developmental point, social and academic functioning – allowing for a more detailed representation of premorbid data. Indeed, although Chapter 3 reiterates that there is a consistent relationship between DUP and positive symptoms, the literature does report *some* evidence for a

small effect of premorbid adjustment, albeit of a smaller magnitude. It has also been suggested that the association of DUP with positive symptoms may be more specific to the particular positive symptoms present, as evidenced by DUP being associated with time to response to treatment for delusions, but not hallucinations, even when both symptoms were present (Gunduz-Bruce, McMeniman, Robinson, Woerner, Kane, Schooler, et al., 2005).

Negative Symptomatology

As expected, premorbid adjustment had a stronger association with negative symptoms than the differential relationship between DUP and negative symptoms. Indeed, the relationship between negative symptoms and DUP was not significant. The study suggests that it is the relationship between premorbid *social* adjustment and negative symptoms that is the strongest aspect of this relationship. Consistent with the clinical picture emerging from the systematic review, the magnitude of association between premorbid social adjustment and negative symptoms seemed to increase across developmental timepoints. Therefore, the findings of the current study offer a counterpoint to author's such as Häfner and colleagues (1995), who contend that psychosis is an outcome of a pathogenic neurological process, of which poor premorbid adjustment is an early indicator. The current study is consistent with a broader (admittedly more speculative) position that the link between negative symptoms and premorbid adjustment is predominantly evidenced in the social domain, and therefore is reciprocally influenced not only by individual development, but also by the impact of the interpersonal environment upon the individual across the duration of psychosocial development up to young adulthood (e.g. Räkköläinen 1977, Malmberg, Lewis, David & Allbeck 1998, Wicks, et al., 2005).

Quality of Life, adjustment and DUP in psychosis.

The current study also supports the findings of Chapter 3's systematic review regarding quality of life. Psychological quality of life was associated with both DUP and premorbid adjustment, again predominantly in the social domain – with better

adjustment being associated with higher psychological quality of life. Quality of life was consistently associated with childhood and early adolescent social adjustment in all sub-domains. Thus, it would appear that the 10 years or so (age 5 – 16) covered by these two timepoints have a significant impact upon adjustment to psychosis. From an attachment perspective, these years are of critical importance in terms of the development of a coherent internal working model of self and others, and in terms of the emergence of an autonomous self identity, aided by the capacity to mentalise (Erikson, 1968; Fonagy, et al., 2002). In addition, there is evidence that children with insecure and disorganised attachment organisations have impaired performance on Piagetian reasoning tasks in repeated testing sessions from 7 to 15 years of age (Jacobsen, Edelstein & Hoffman, 1994). Furthermore, children with disorganised attachment organisations are particularly impaired on both cognitive tasks and tests of self-regulatory capacity (Jacobsen, Huss, Fendrich, Kruesi & Ziegenhain, 1997). Thus, given the links between sub-optimal attachment organisation and later psychopathology, it would seem reasonable to suggest that this relationship will be mediated by difficulties in childhood and later adolescence, particularly in functional domains linked to attachment, such as mentalisation and affect-regulation. Conversely, better functioning in these years should confer a degree of resilience in adapting to the experience of difficulties later in life – including distressing experiences such as the onset of psychosis - a proposition borne out by the above data.

The impact of premorbid adjustment was also evident in the data concerning engagement, particularly as, contrary to predictions, there was no relationship between DUP and engagement. Early and late adolescent premorbid social adjustment were correlated with overall engagement, collaboration, help-seeking and treatment adherence – with poorer adjustment relating to poorer engagement. Thus, it would appear that premorbid social adjustment is an important factor in influencing the length of time an individual experiences psychosis without treatment, and how they engage with services. Within the domain of social adjustment, adolescence in particular seems to be crucial. Given that the items of the premorbid adjustment scale are concerned with social interactions, establishing peer

relationships, and the formation of close relationships it would seem that the scale is concerned with psychodevelopmental tasks of separation and individuation (Harrop & Trower, 2003). Thus, in the case of psychosis, those individuals who have poorer premorbid adjustment may well lack the interpersonal skills to recognise the nature of their difficulties, and in turn may have difficulties in communicating their concerns about adaptation to the experience of psychosis, and the attendant disruption to one's life situation. Furthermore, the intensive, psychosocial informed treatment approach implicit within early intervention may also be interpersonally demanding for individuals. The above findings further underline the value of a developmental perspective in elucidating different trajectories of adaptation to the experience of psychosis.

General psychopathology and affective symptomatology

In addition, strong associations were recorded between all premorbid functioning timepoints and general psychopathology, the associations indicating poorer premorbid functioning precipitating greater general psychopathology. Furthermore, the magnitude of association was similar for both academic and social adjustment. This perhaps reflects the broad scope of symptoms encapsulated by the PANSS General Psychopathology scale, including anxiety, depression, somatic and behavioural symptoms. Therefore, the heterogeneity of the scale may well obscure whether certain clusters of symptoms associate more with academic functioning or social domains. However, these relationships can also be viewed from a developmental perspective – similar to the above point regarding negative symptomatology – that sub-optimal premorbid functioning may itself be a reflection of negative developmental experiences, expressed in childhood via behavioural difficulties, affect dysregulation and/or poorer academic performance. After the onset of psychosis, these developmental sequelae are viewed through the prism of general psychopathology. Indeed, it is of note that the correlations between General psychopathology and premorbid adjustment were the most consistent of the three PANSS subscales.

Curiously and somewhat contrary to the above finding, premorbid adjustment was largely unrelated to affective symptomatology (the only significant association being with early adolescent academic functioning). In contrast, DUP was significantly correlated with DUP, suggesting that longer DUP predicated higher affective distress. This finding, in tandem with the *lack* of association between DUP and general psychopathology clearly requires further investigation in a larger sample.

Weaknesses of the studies

Analogue study

The results of the analogue study are subject to several caveats. As the study utilised an analogue sample, caution is urged in extrapolating to clinical samples. The use of a self-report attachment style measure was also less robust than an interview-based measurement of attachment (e.g. the AAI). As discussed in Chapter 4, although more expensive in terms of time and resources, an interview offers the optimal measure of individual attachment status, circumventing the problem of reliance on self-report when an individual may not consciously be aware of underlying attachment processes (Crowell, et al., 1999). Dozier's (1990) observations from a clinical sample is relevant here, as this distinction is particularly relevant to psychosis, Dismissing states of mind in the AAI being assessed mainly via the structure of the discourse rather than self-reported attachment status. Using self-report measures, individuals with a dismissing stance towards attachment may report as 'false' secure, as their overt model of self precludes awareness of attachment insecurities. As has been discussed, the AAI emerged from the developmental attachment research tradition (e.g. Ainsworth et al., 1978). If (insecure) attachment is associated with the development of a threat-based social mentality, and later psychopathology, thus a developmental measure of attachment would be a more appropriate methodological approach.

Clinical study

With regard to the clinical study, the exploratory nature of this study must be acknowledged. The sample size, particularly with regard to the attachment subsample was small, and precluded more extensive use of parametric analyses and more sophisticated statistical techniques. The complexity of the data set also led to a substantial number of analyses, therefore the possibility of Type I errors in the reported results must be acknowledged. Conversely, as noted earlier, the small sample size of the attachment sample also introduced the possibility of Type II errors into the analysis. The numbers of individuals classified in each sub-category of the 4-way classification of the AAI rendered this set of analyses under-powered to adequately explore differences between 4-category attachment and psychosis. Replication in a larger sample is imperative.

The cross-sectional cohort design did not allow for analysis of changes in clinical presentation over time. DUP and premorbid adjustment, by their very definition as pre-treatment factors are static once an individual becomes known to clinical services, however the clinical presentation in terms of the evolution of positive and negative psychotic symptoms, general symptomatology and affective disturbance are dynamic and prone to change, particularly in the "critical period" of treatment (Birchwood, et al., 1998). Indeed, diagnostic stability over the critical period has been reported to be low in schizophreniform disorder (Haahr, Friis, Larsen, Melle, Johannessen, Opjordsmoen, et al, 2008), and also in psychosis NOS (Whitty, Clarke, McTigue, Browne, Kamali, Larkin, et al., 2005). In light of this, future studies would be enhanced by utilising a longitudinal follow-up methodology. The diagnostic heterogeneity could also be interpreted as a weakness from the perspective of including both non-affective and affective psychoses. However, the aim of the study was to characterise a representative sample of individuals with FEP, as they present to clinical services. Furthermore, given the aforementioned lack of diagnostic stability in FEP (Haahr, et al., 2008) it seems more pragmatic to have a broader set of diagnostic criteria, rather than adopting a narrow definition of "Schizophrenia".

Also with regard to methodology, the individuals participating in the study gave voluntary consent, after approach for consent was approved by the RMO. To an extent this consent procedure may have made it more likely that individuals who were perceived by the treatment team to be clinically stable and/or "psychologically minded" were referred to the study. Therefore, the sample may not be representative of the whole spectrum of individuals receiving treatment for a first episode psychosis.

Furthermore, although psychometrically the adult attachment interview is relatively stable over time (Ammaniti, et al., 1996), it is known that negative life events can lead to change in attachment status (particularly from secure to insecure representations, Crowell, et al., 2002). As psychosis can have a pervasive influence on the individual's quality of life, close relationships and relationships with loved ones, it may be of interest to repeat the AAI at a predestined timepoint, e.g. 3 years after onset of treatment, to ascertain whether the experience of psychosis can precipitate changes in attachment organisation. Following from this, evidence is emerging, particularly with regard to the treatment of complex personality pathology, that intensive psychotherapy (e.g. Fonagy, et al., 1996; Levy, et al., 2006) can promote improvement in reflective capacity and promote change in attachment security.

Although the current study did not utilise a matched case control with regard to the attachment component of the study, this constitutes a minor shortcoming of the study. Firstly, it is now widely acknowledged (e.g. Dozier, et al., 1999; van IJzendoorn & Bakermans-Kranenburg 2008) that insecure attachment organisations predominate in clinical populations, as was evidenced in the use of van IJzendoorn & Bakermans-Kranenburg's (1996) meta-analytic sample as comparison in the current study. Secondly, rather than restating the link between attachment insecurity and psychopathology in general, the next stage in the application of attachment to clinical samples is to evaluate how in specific psychopathological conditions, different attachment organisations contribute to symptom profiles, adaptation to

difficulties and recovery trajectories. Both the clinical and analogue studies in this thesis represent an attempt to link attachment and mental health in this way.

It is regrettable that the current study could not, at this juncture consider the Cannot Classify (CC) attachment category. At present AAI training institutes for CC coding are infrequent, and require coders to be reliably qualified in four-category coding. Given the exploratory nature of the current thesis, it would seem valid to establish 3 and 4-category distributions before undertaking further intensive training to become reliable in CC coding. However, investigation of the role and function of CC in psychosis remains theoretically desirable. As Hesse (1996) comments, this category, indicative of a breakdown of attachment related discourse at a global level, via an inability to coherently discuss attachment concerns, or grossly contradictory dismissing and preoccupied discourse, may be of particular relevance to studies of psychopathology. In Levy and colleagues' (2006) study of psychotherapy for BPD, 18% of the total sample was classified as CC. Given the position of the current thesis that affect (and the breakdown thereof) has a central role in psychosis, it would seem reasonable for future studies to endeavour to include Cannot Classify as an attachment classification.

Following from this, although the study included the Unresolved attachment category as a measurement of attachment disorganisation in the discussion of loss or abuse, a formal measure of trauma, such as the Clinician-Administered PTSD Scale (CAPS, Blake, Weathers, Nagy, Kaloupek, Klauminser, Charney, et al., 1998) was not used. Therefore, a clear evaluation of the presence or absence of trauma, and the nature and severity of any such trauma could not be evaluated. Furthermore, evidence suggests that the experience of sexual abuse in particular is under-reported on the AAI (Crowell, 2002). However, it is important to emphasise that Unresolved attachment organisations are based on the perception of the impact of loss or abuse, and thus attachment narratives regarding trauma are not veridical to the experience of abuse. In the case of psychosis this may have ramifications for adaptation to the experience of a first episode. Future studies would be well placed to evaluate how

attachment and trauma interact in the context of psychosis, particularly with regard to the link between dissociative processes and psychosis (e.g. Moskowitz, et al., 2005). Furthermore, the small number of participants in each attachment category, particularly in the 4-category distribution limited the scope of the analysis of this category. Indeed, the possibility of Type II errors obscuring relationships between 4-category classifications and other clinical variables must also be acknowledged.

Veracity of the link between Attachment and Psychosis

The clinical study reported in this thesis is to the author's knowledge the first study to investigate attachment representations using the AAI, in a FEP sample. Furthermore, it is also the first study to empirically investigate mentalisation in FEP, operationalised via Reflective Function. Consistent with the literature on attachment representations in clinical groups, the current study reported a predominance of insecure (dismissing and preoccupied) attachment classifications, indeed almost ¾ of the total sample were classified as giving narratives consistent with an insecure attachment representation. Using van IJzendoorn & Bakerman-Kranenburg's (1996) meta-analysis as a comparison sample, this distribution of 3-way classifications was significantly different from a sample of college attending young adults. However, the distribution of 3-way classifications in the current study is significantly different from Tyrrell & Dozier's (1997) sample of individuals with a complex mental health diagnosis. Indeed, in contrast to the multiple episode group, 25% of the current sample were classified as Secure/Autonomous on the 2-way categorisation. Therefore, at least with regard to FEP, existing assertions that "*patients with schizophrenia almost always display Ds attachment representations*" (van IJzendoorn & Bakermans-Kranenburg, 2008; p.84) are over-simplistic and erroneous. The current studies findings also confirm and extend Coutoure and colleagues' (2007) findings on attachment style in FEP. Consistent with these authors' findings the current study reports the presence of attachment avoidance (dismissing representations) and attachment anxiety (preoccupied representations) in the FEP sample. Furthermore, the current study extends the initial attachment style data to encompass the developmentally grounded AAI classifications.

It is of note however, that under 3-way categorisation individuals with insecure/dismissing classifications were significantly younger at onset of treatment than individuals with secure attachment classifications. The exploratory nature of the current study did not allow these groups to be analysed more closely, but several hypotheses for future study present themselves. Firstly, it may be the case that earlier onset of psychosis is associated with a more complex clinical presentation and greater impairment (Ballageer, et al., 2005), which is also reflected in a minimising attachment representation. Hypothetically, it is individuals with a presentation such as this who also comprised Tyrrell and Dozier's sample (1999). An alternative, more dynamic hypothesis is that the Dismissing attachment representation in younger individuals with psychosis is partially a reflection of the distress and disruption wrought by acute symptomatology upon the individual's interpersonal relationships - particularly with close others - and partially a reflection of the sequelae of difficult developmental experiences such as trauma and loss (also consistent with Main, et al's (2005) observation that Disorganised infant attachment patterns resolve to a Dismissing stance from childhood onwards). In this formulation, following attachment principles, a dismissing stance becomes an adaptive stance to implicitly or explicitly direct mental resources away from memories, thoughts or feelings that may be serve to dysregulate and disorganise the individual's mental state.

Furthermore, the current study reported novel findings regarding the distribution of 4-way classifications (including the Unresolved/Disorganised attachment representation) in the FEP sample. As hypothesised, there was a significant difference between 4-way classifications in the FEP sample compared to the non-clinical young adult sample. However, it is unclear whether this difference was accounted for by the higher proportion of U/d classifications in the FEP sample (29% in the FEP sample vs. 20% in the young adult sample) or the pattern of lower secure attachment and higher insecure/dismissing classifications in the FEP sample. When the multiple episode sample was compared with the FEP sample no differences in distribution emerged, although there was a higher proportion of U/d classifications in the multiple episode sample (41% vs. 29%). However, when one compares the

proportions of individuals classified as secure/autonomous under 3- and 4-way classifications (the difference being accounted for by individuals designated Unresolved/Secure); there is a substantial drop in the proportion of secure classifications. In contrast, the proportion of individuals classified as insecure/preoccupied and insecure/dismissing remained relatively stable. Two key points present themselves from these attachment data. Firstly, in FEP there does seem to be a distribution of attachment classifications, more so than in a chronic sample. Secondly, the current study is underpowered to fully evaluate the contribution of Unresolved attachment status to the clinical presentation and adaptation to FEP.

Importantly, the clinical study refutes Dozier, et al's (1999) suggestion that the symptomatology of psychosis pervasively contaminates the coding of attachment representations of the AAI. In addition to the precaution of not interviewing individuals when acutely psychotic and/or thought-disordered, the current study found no relationship between positive or negative psychotic phenomenology and attachment representations. Thus it is highly unlikely that psychotic symptomatology contaminated the interview coding. In addition, general psychopathology and affective symptomatology were not associated with attachment group. It should be noted that the absence of a relationship between attachment and symptomatology may itself be a result of the precautions taken regarding administration of the AAI. In the overall sample the mean scores for positive and negative symptomatology are relatively low - although at levels comparable to other FEP samples at follow-up in the first year of treatment (e.g. Melle, et al., 2005; Addington, et al., 2005a) - and the variance relatively narrow therefore it is perhaps unsurprising that no differences with regard to symptoms were detected.

That is not to say that there are no relationships between attachment and psychotic symptomatology, indeed the evidence from analogue samples outlined in Chapter 5 and the results reported in Chapter 6 suggests that there are associations at a phenomenological level. However, the current clinical sample was drawn from an early intervention cohort whose *raison d'être* is to reduce distress caused by

psychotic symptoms, thus if treatment is successful psychotic symptoms will invariably reduce in severity. Attachment representations on the other hand are largely stable, and this thesis suggests that the value of attachment in psychosis may lie in enhancing the understanding of adaptation to psychosis and identifying the affect dysregulational processes that may accelerate relapse, with consequent ramifications for recovery and staying well. Future studies which track change in symptoms over time from acute illness through the critical period may well elucidate the relationships between psychotic symptomatology and attachment in greater detail. Furthermore, the analogue study reported associations between attachment and psychotic phenomena in conjunction with greater levels of difficulties in more interpersonal problems – i.e. an individual's social mentality with regard to more general interpersonal functioning – whereas the clinical study did not replicate these relationships. This anomaly requires further investigation.

Preliminary data on Mentalisation (Reflective Function) in Psychosis

The clinical study also provides preliminary data on mentalisation (operationalised as reflective function), also derived from the AAI narrative. The reflective function scores were broadly consistent with those of previous studies of RF in individuals with borderline personality disorder (Fonagy, et al., 1996; Levy, et al., 2006). When RF scores were compared between groups using the 3-category attachment classification, it was apparent that RF scores for individuals with both secure and insecure/preoccupied attachment classifications were higher than for those individuals with dismissing attachment representations. This is consistent with Fonagy & Bateman's (2006) contention that the integrated operation of the attachment system and the mentalisation system are synergistic and mutually beneficial to the individual in terms of buffering against the effects of negative life experiences. It is also of note that there were no differences in RF scores between groups on the 4-way attachment classifications, suggesting that there was not a relationship between RF and attachment once unresolved attachment representations are considered. It must first be acknowledged that these data may have been subject to a Type II error. However, Levy and colleagues (2006) have noted a similar finding

with regard to Borderline Personality Disorder, speculating that low RF and lack of resolution of trauma are thus subsumed by different psychological mechanisms. With regard to the current study, these results can be viewed as broadly consistent with Fonagy & Bateman's (2006) model – attachment disorganisation inhibits the successful deployment of mentalisation skills. Perhaps, when those individuals in the current study with U/d status discussed emotionally charged events, such as loss and abuse, the disorganisation implicit within this process serves to inhibit the mentalising capacity to reflect on the impact of interpersonal relationships on the self. When the median mentalisation scores are viewed (Table 10.5) for 4-category classifications, it can be seen that insecure/dismissing individuals manifest limited or absent RF. Levy and colleagues (2006) speculation of different mechanisms governing RF and trauma resolution may also be valid – although in psychosis it may be that low RF is in fact associated with a minimising stance to close relationships and affectively valenced experiences. In addition, this low RF/Dismissing attachment group may also be at high risk of relapse given the combination of a compromised capacity for awareness of the mental states of self and others, compounded by an affect minimising strategy, and minimal articulation of autobiographical memory. Although speculative, it may be the case that this group may not be able to communicate early signs of crisis to clinicians, leading to increased risk of relapse.

Main, and colleagues (2005) finding that U/d SST behaviour in infants may "resolve" to a dismissing stance may also be relevant here. Although unresolved attachment representations may be pathogenic via their disorientating and fragmenting effect on the individual's sense of security, the presence of an underlying secure or preoccupied model suggests an understanding of the impact of mental states can be accessed and reconstructed, given appropriately sensitive and compassionate clinical intervention. For those individuals who present with the nexus of dismissing/ low RF or Unresolved/Dismissing/low RF the underlying model of mental states and/or attachment security may be far less developed. Thus in addition to ameliorating the distress of psychosis, and facilitating adaptation to the experience of psychosis, a further challenge for clinicians is to support the construction of mental states within a context of safeness.

In parallel to the lack of association between attachment classification and psychosis the lack of a relationship between symptomatology and RF suggests competence in mentalisation is also a stable phenomenon in FEP, rather than an epiphenomena of changes in mental state concurrent with psychotic symptomatology. This is also consistent with Sprong and colleagues (2007) evidence for the cognitive concept of theory of mind being impaired at trait level. However, by investigating mentalisation via RF the current study extends this finding beyond a purely cognitive conceptualisation of mental state awareness (e.g. Frith 2004) to encompass an affectively grounded psychodevelopmental perspective. Furthermore, given the lack of association between RF and early or late adolescent premorbid adjustment it would suggest that variations in mentalisation are specific to the domain of interpersonal functioning, particularly with regard to affectively valenced topics, rather than the global deficit in understanding mental states observed in autistic spectrum disorders (e.g. Phillips, Baron-Cohen, & Rutter, 1998).

DUP, helpseeking and attachment

In contrast to the hypothesis that secure attachment would link to a shorter duration of untreated psychosis, no significant relationships emerged between attachment classification and DUP. Nor did significant relationships emerge between attachment and duration of untreated illness, duration to help-seeking or duration to onset of treatment. In addition, there was no relationship between reflective function and DUP, or the other onset related variables. This finding is surprising given that the onset of psychotic symptoms could be construed as a prototypical example of a "strange situation" in which the attachment system would become activated. However, perhaps the unusual subjective experiences and/or distress that characterises the onset of psychotic symptomatology has a more pervasive effect on the psychological functioning of the individual than merely activating the attachment system. Indeed the fragmentation of cognition, affect and behaviour that characterised Bleuler's (1911/1950) exposition of schizophrenia suggests that the disturbance of functioning implicit within the onset of the first episode will effect

social functioning in all modes, not just the specific attachment-valenced context of relationships with close others.

The role of Attachment and RF in adaptation to psychosis

Several associations were reported between both attachment and RF scores and service engagement. As predicted in the initial study hypotheses, secure attachment representations were significantly associated with better engagement with clinical services and also better treatment adherence, although not with better help-seeking. Furthermore and unexpectedly, individuals with preoccupied attachment representations had lower scores on overall engagement, and were rated by clinicians as having poorer medication adherence. Reflective function was unrelated to engagement with services. Thus it would appear that secure attachment may confer an advantage in facilitating adaptation to the experience of psychosis – securely attached individuals are perceived by their key workers to be better engaged with the process of treatment. Thus the dyadic model of engagement between individual and clinical services can be compared in its function to the arrangement of a secure attachment relationship, at least in the perception of clinicians. Individuals are perceived by clinicians as being more engaged with the process of adaptation to psychosis. However, there was no significant difference between attachment classifications with regard to the help-seeking subscale of the engagement scale.

Furthermore, when scores on the adolescent coping scale were analysed, individuals with secure attachment were more likely than individuals with an insecure attachment stance to seek assistance from others as a method of coping, with regard to general difficulties. It seems probable that these individuals would also display an "integrating" recovery style (McGlashan, 1987; Drayton, et al., 1998), itself linked to better engagement after an acute episode (Tait, et al., 2003). However, recovery style concerns itself primarily with the individual's stance towards the experience of psychotic symptoms and their sequelae. The relationship between attachment

security and engagement expands the concept of recovery style to encompass the underlying affective model that the individual utilises in close relationships - including keyworkers – and how this may govern how individuals continue to access help. Furthermore, although recovery style is essentially a model of health behaviour, attachment in individuals with psychosis appears to be a stable characteristic that predates onset of psychosis, thus a secure attachment organisation should reflect a developmentally acquired ability to contextualise and recover from negative experiences.

The picture that emerges for insecure and disorganised attachment organisations seems more complex. Firstly, it is of interest that engagement does not appear to have been significantly lower in individuals with an insecure/dismissing attachment organisation. This is at odds with the data pertaining to the minimising stance towards both attachment and engagement displayed by individuals with multiple episodes of psychosis (e.g. Dozier, 1990; Dozier & Lee 1995; Dozier, et al., 2001). Three reasons for this null finding are apparent. Firstly, the current study was of individuals in their first episode, predominantly under an intensive outreach model, thus although individuals with secure attachment organisations have *better* engagement, individuals with dismissing attachment are still engaged with services, perhaps with intervention focussed at a more structurally focussed level. Indeed, median total engagement score for individuals with dismissing attachment representations was 6 (range = 3 – 13.5), which is well within Tait and colleagues (2003) 11 point cut-off score for "poor engagement". It is not inconceivable that for those individuals whose experience of psychosis takes a complex trajectory of increasing social impairment, where treatment becomes more coercive, with the attendant increased likelihood of hospitalisation, engagement may become more tenuous, and concurrently attachment organisation may move towards a more dismissing stance. However, this trajectory was not evident in the current sample.

Secondly, insecure-dismissing attachment presents something of a methodological double-bind – in the current study the AAI was the final interview of a research

protocol which required a reasonable degree of time and investment on the part of the participants. From Dozier and colleagues (1990, 1995, 2001) studies of attachment it is apparent that dismissing attachment organisation is associated with difficulties in discussing symptomatology and associated difficulties, therefore it seems not unreasonable that such individuals would be reticent to participate in a study which requires discussion of such difficulties. Furthermore, those individuals with the poorest engagement with services are also those least likely to consent to participation in a voluntary study. Indeed, in the breakdown of referrals that could not be approached for consent the most likely reason for non-approach was "disengagement with services". If one represents organised attachment representations on a continuum from minimising to maximising, one would hypothesise that those individuals would be at the end of the minimising pole of the continuum.

Thirdly, the null finding with regard to Unresolved attachment status and engagement may be misleading. As has been mentioned earlier, the small number of individuals in this category again increases the likelihood of a Type II error, whereby an association between the two variables is obscured. Equally, attachment disorganisation may perhaps only be of import in circumstances where affect and the integrity of the attachment system are likely to be disrupted. In the first year of treatment for psychosis the aim after initial resolution of the acute phase of psychosis is to rebuild confidence and lay the foundations for recovery. Therefore, the impact of attachment disorganisation may only become apparent in discussion of trauma, loss or other attachment related threats (which is most likely to emerge in the context of psychological work), or at times of crisis. Further clarification of the role of Unresolved attachment representations in psychosis is thus a key area for further study.

The finding of poorer engagement in individuals with preoccupied attachment is novel, and was not predicted by the study hypotheses. However, crucial to this finding is that the engagement scale was completed by the individual's keyworker. This is finding is perhaps analogous to Waller et al's (2004) somatoform disorder

group whose help-seeking, albeit prior to onset of treatment, fails to invoke the appropriate care-giving response from clinicians. With regard to engagement a similar process may be occurring, vis à vis that the hyperactivating, affect driven model of helpseeking adopted by individuals with preoccupied attachment representations is particularly challenging to clinicians. It is of note that there is also a trend level association between poorer treatment adherence and preoccupied attachment. In some respects, the relationship with poorer engagement may not reflect *dis*-engagement; instead it may reflect *conflicted* engagement. Main, and colleagues (2002) note that implicit within the definition of preoccupied attachment states of mind is an understanding of the mechanisms and effects of the attachment system, the compromise in the attachment stance being the inability to step back from the attachment frame, in comparison to the reflective stance of secure speakers. Perhaps, for individuals with a preoccupied attachment organisation, a similar situation occurs with regard to engagement – the impact of psychosis is not minimised, however for the preoccupied individual the consequences of the acute phase of the disorder lead to a hyperactivating stance towards treatment, in turn generating conflicted responses from care-givers.

Finally, it would appear that reflective function is not related to engagement with services. With regard to RF it may be that the service engagement scale evaluates an individual's relationship with the clinical service, rather than the individual. Therefore, the explicit one-to-one stance of reflective function simply is not implicated in this relationship. Future studies could relate RF to a measure of one-to-one clinical contact, such as the Working Alliance Scale (Horvath & Greenberg, 1989).

The Reflective Function scale and the dynamics of adaptation

One possibility emerging from the results of the clinical study is that attachment organisation and reflective function have differential effects upon individual adjustment to the experience of FEP. For instance, as discussed above, no significant

associations emerged between RF and engagement with services, although there were relationships between attachment and engagement.

However, although no relationship emerged between attachment and interpersonal problems, significant associations were evident between RF and interpersonal problems. These correlations centred on subscales associated with Affiliating interpersonal problems - difficulties in managing appropriate boundaries of interpersonal relationships – particularly in the domains of self-sacrificing, and intrusive-needy interpersonal problems. In the first year of psychosis, higher RF scores were associated with greater levels of these Affiliating difficulties. Furthermore, moderate to high RF was also associated with a greater likelihood of coping with difficulties by referring to other individuals for support, although this was not correlated with overall Affiliating scores. To a certain extent these associations are unsurprising, as both RF/mentalisation and interpersonal problems, are concepts referring to one's understanding of self and others as social agents. In the FEP sample, it would appear that higher levels of mentalisation are also associated with a greater awareness of one's difficulties in social situations and openness to report these difficulties. Furthermore the association with Reference to Others as a coping style indicates an orientation towards relying on others to modulate one's difficulties. Whereas attachment organisation seemed to reflect a more global stance towards engagement and helpseeking as prototypical sources of safety in the context of distress, the relationship between interpersonal problems and RF may reflect more specific concerns around one-to-one relationships. These individuals do not seem to minimise the impact of psychosis upon their quality of life, but do seem to have greater distress in their relations with others. Therefore, it is tempting to speculate that a sub-group of individuals experiencing an FEP such as this, with greater levels of RF and greater difficulties with affiliating behaviours are a specific group at high risk of relapse via affective disturbance and/or post-psychotic depression. However, the implicit understanding of the mental states of self and others would also be an early indicator of suitability for psychological intervention to ameliorate the detrimental impact upon social relationships of FEP. Indeed, social support has been suggested to be an important factor in minimising relapse via

reducing hospital admissions (Norman, Malla, Manchanda, Harricharan, Takhar & Northcott, 2005). Despite the greater levels of affiliating interpersonal problems, Individuals with high RF and greater levels of other oriented coping may well be able to draw on social support to buffer them against relapse.

Fonagy and colleagues (1996) have suggested that in relation to the psychological sequelae of childhood trauma and abuse, RF may perform a psycho-protective role, conferring a degree of resilience, noting that among individuals reporting abuse, those who scored low on RF were more likely to be diagnosed with BPD compared with those who were abused but scored high on RF. It is possible that an analogous situation may be present in the psychosis sample, whereby higher levels of RF, together with secure or preoccupied attachment representations, allow the individual to adapt to the experience of psychosis to a greater degree than those individuals with lower RF and/or dismissing attachment. In summary, the findings with regard to attachment, mentalisation and premorbid adjustment underline the complex interplay between multiple psychodevelopmental factors, contributing towards adaptation to psychosis.

Gender differences in psychosis

The current study also reports some evidence of gender differences in the presentation of FEP are present even in the first episode. A significant difference was observed between genders for duration to onset of criterion treatment, with females having a significantly longer delay than males. However, there was no difference between genders in the delay to contact with secondary mental health services. Therefore, given that onset criterion treatment is measured in terms of initiation of antipsychotic medication, this finding suggests that the clinicians in the current sample were willing to delay medication longer for females. One explanation for this finding may be that, in the period prior to onset of treatment females tend to have superior social role functioning than males (Häfner, et al., 1993), therefore may be perceived as less in need of immediate medication. In contrast, males presenting

with differentially greater impairment both in terms of psychotic symptomatology, marked deterioration in general functioning and consequentially greater risk of harm to self or others, may require more rapid initiation of medication. Furthermore, as the side effect profiles of typical and atypical antipsychotics are potentially greater for women than men (e.g. Di Paolo, 1994; Kleinberg, Davis, De Coster, Van Baelen, & Brecher, 1999), the RMOs' involved in the study may have had a higher threshold for initiating prescription of anti-psychotics in women compared to men. An additional factor may be, that for a variety of socio-cultural reasons there is a greater tolerance of women's mental health difficulties compared to men (e.g. Goldstein & Kreisman, 1988; Angermeyer, Goldstein & Kuehn, 1989; Read, 2004).

An unexpected relationship emerged between premorbid adjustment and gender, with female service users reporting poorer premorbid adjustment in late adolescence, particularly in the social domain. To date, evidence has suggested that poorer premorbid adjustment is associated with male gender, both in multiple episode (e.g. McGlashan & Bardenstein, 1990; Deister & Marneros, 1992) and first episode samples (e.g. Bailer, et al., 1996; Larsen, et al., 1996; Rabinowitz, et al., 2002). However, the link between male gender and poorer premorbid adjustment is not entirely unequivocal, as some authors have reported no association (Fennig, Putnam, Bromet, & Galambos, 1995; Schmael, Georgi, Krumm, Buerger, Deschner, Nöthen, et al., 2007, Monte, et al., 2008), and there have also been findings of greater impairments in premorbid cognitive performance in females compared to males (Jones & Done, 1997; Weiser, Reichenberg, Rabinowitz, Kaplan, Mark, Nahon, et al et al 2000). Monte and colleagues (2008), in a sample of similar mean age at first contact to the current study, highlight the significance of the transition from early to late adolescence with regard to deterioration in premorbid *academic* functioning, however they did not note an analogous trend for social functioning. However, Cannon, et al., (1997) reported decline in adolescent functioning in both academic and social domains among individuals later diagnosed with schizophrenia, but only deterioration in the social domain in individuals later diagnosed with bipolar disorder, although the premorbid assessment was conducted via maternal recall

only. As the existing data regarding premorbid adjustment and gender was not replicated in this study, it is would seem the current finding may be an anomaly. However, to further investigate this finding, echoing the recommendation of Chapter 3, future studies of adaptation and outcome in FEP should not only include comprehensive assessment of both DUP and premorbid adjustment as standard, but also include gender as a potential covariate.

Finally, it is of note that no differences were found between genders for attachment classification. With regard to attachment, this is perhaps unsurprising, given the formulation of attachment as a universal human characteristic (Bowlby, 1969/1980; 1973). However, it is important to add a note of caution that gender differences in attachment representations have to date been a notably neglected area of attachment research (Hazan & Shaver, 1994). Furthermore, there were no differences between genders for reflective function, a finding consistent with previous research into reflective function in non-clinical populations (Fonagy, et al., 1991). Therefore, in contrast with the clinical characteristics and perhaps also the premorbid adjustment data; the results for attachment and mentalisation appear to be gender invariant.

Further implications of a psychodevelopmental perspective on psychosis

Clinical Implications

Having established that the application of attachment theory to psychosis is both theoretically and clinically valid, the final section of this thesis outlines further lines of enquiry for an attachment informed psychodevelopmental perspective on psychosis. In terms of adaptation to psychosis, the methodology of the AAI supports the emergent literature on the relevance of narrative to recovery. The implications of attachment theory for clinical practice and primary prevention are also relevant. Furthermore, adopting a psychodevelopmental perspective on attachment has important implications for the current *bio* - psychosocial understanding of the aetiology and treatment of psychosis. Finally, the opening preposition of this thesis must be appraised with regard to an attachment, mentalisation and affect regulation perspective: can psychosis be viewed as a disorder of affect?

Attachment, narrative and recovery

Applying an attachment perspective to psychopathology highlights the value of narrative as a window onto individual differences in the capacity to talk cogently and coherently about oneself and one's difficulties. Indeed, the use of the AAI in the current study demonstrates how the articulation of a narrative which demonstrates to an interlocutor a knowledge of oneself, and the capacity to differentiate one's own feelings, beliefs, desires, and fantasies from those of others, is crucial not only in adapting to and recovering from psychosis, but also indicative of the evolutionary drive to survive, thrive and develop (Bowlby 1988; Siegel 1999; Gilbert 2005).

Previously, Lysaker and colleagues (Lysaker, Carcione, Dimaggio, Johannesen, Nicolò, Procacci, et al., 2005a; Lysaker, Dimaggio, Buck, Carcione, & Nicolò, 2007) have explored the loss of narrative coherence in psychosis within a broad neuropsychological framework. They reported that impoverished narratives were associated with impairments in mentalisation and self-reflectivity, as measured by the Metacognitive Assessment Scale (MAS) (Semerari, Carcione, Dimaggio, Falcone, Nicolo, Procaci, et al.., 2003). The MAS contains four scales assessing the individual's understanding of their own mind; their understanding of others minds; 'decentration', denoting the ability to see the world as existing with others having independent motives; and 'mastery', denoting the ability to work through and utilize representations of mental states in problem solving. Lysaker and colleagues have found deficits in the narratives of those diagnosed as having schizophrenia. In particular, they found that impairments in self reflectiveness (understanding the representational nature of one's own mind) were associated with poorer outcomes following psychosis vis à vis greater problems in cognitive functioning and working memory, more negative symptoms, more symptoms of disorganization and thought disorder, poorer social functioning, greater suspiciousness, and more hallucinations (Lysaker et al., 2005; Lysaker, Dimaggio, Buck, Carcione, & Nicolò, 2007). Importantly, using single case evidence, Lysaker and his colleagues have observed positive changes in mentalisation contained within narratives derived from psychotherapy (Lysaker, France, Hunter, & Davis, 2005b).

The current study, and indeed the theoretical backdrop of this thesis has been to focus upon a formulation of psychosis which is informed by attachment theory and mentalisation, and thus takes an interpersonal and affectively grounded stance to the problems presented by adaptation to, and recovery from psychosis. Indeed, as this chapter has summarised, there are numerous links between attachment, mentalisation and the individual differences in presentation in the first year of treatment for FEP. However, it is also notable that two of the measures in the current study have relied on narrative methods: the AAI in regard to articulating a reflective narrative of attachment related experiences; and the DUP interview in regard to the individual constructing a narrative of the salient aspects of the onset of their difficulties, and their pathway into care. In both circumstances, the narrative provides the context to the following key aspects of recovery, as articulated by Gumley and colleagues (2008): *"develop and formulate an understanding of individuals' responses to psychosis and its sequelae; identify the developmental and interpersonal roots of adjustment; examine the underlying processes of cognitive and affective regulation embodied in reflective functioning; and implement core tasks of psychotherapeutic change"* (p.132).

Gumley and colleagues have begun to articulate a narrative based conceptualisation of recovery in psychosis (Gumley, et al. 2008; Gumley & Park, 2008; Gumley & Street, in preparation), presenting three thematic narrative styles which encapsulate the dynamic and interpersonal nature of adaptation to psychosis. These narrative conceptualisations are not inconsistent with the attachment representations outlined in the current thesis. In the first narrative- "Freedom and Autonomy" - painful and difficult aspects of the experience of psychosis are acknowledged in the discourse and not avoided, while negative or painful aspects of the experience of psychosis do not appear to generate a sense of being overwhelmed in discussing painful emotions and experiences. Indeed, the speaker appears to reflect with warmth, empathizing with the responses of her family and friends at the time. The characteristics of the person's responses suggest a consistent narrative strategy characterized by openness, warmth, humour, balance, reflection, and accepting the role of experiences as formative events in shaping personal identity, while also valuing the importance of

relationships and social supports in the processes of recovery. The current study generates points of contact between this recovery narrative and secure attachment with regard to the extent to which individuals are constructively able to draw on support from clinicians and close others.

The second recovery narrative - "Defended Independence" - indicates a stance in which affectively valenced discourse is minimized and little reference is made to specific autobiographical memories. This apparent lack of affectivity potentially serves to inhibit the presence of mentalisation within the narrative reminiscent of Fonagy's (2003) observation of negative developmental experiences predicating over-regulation of the attachment and mentalisation systems. However, the corollary of this avoidance of the complexity of the experience of psychosis is a narrative also asserting a need for independence, particularly from medication and mental health services. The narrative may therefore reflect a defensive strategy – perhaps reflecting difficulties the speaker may have in establishing a sense of trust in relationships. Furthermore, the apparently autonomous and independent narrative may belie an underlying strong sense of vulnerability. The current study also suggests that these individuals are likely to cope with life stressors with minimal reliance on others.

The third narrative is "Thwarted Recovery". In this stance manifestation of psychosis is presented as a threatening, overwhelming, and uncontrollable experience, embodied as a powerful agent in the individual's life. The individual may have experienced considerable trauma in relation to their psychosis in the form of repeated and unwanted memories of psychosis. This sense of trauma may include flashbacks to the onset of acute symptomatology, or painful memories of compulsory admission and treatment. This overwhelming sense of trauma is reflected in the account of the experience of psychosis whereby the speaker appears to be vulnerable to absorption 'anew' into the negative experience of psychosis. Unlike the 'defended independence' narrative, the speaker does not downplay his account of the distress of psychosis, or other emotional material, indeed there is a vivid quality to the discourse. However, unlike the 'freedom and autonomy' account, the narrative appears to reflect a speaker who may not be able to control the emotional aspect of the dialogue, leading to a preoccupation and fear. The current

clinical study highlights that these individuals are likely to have mentalisation skills comparable to non-clinical samples; however they also manifest greater degrees of interpersonal problems, and are perceived as less well engaged with the treatment model offered.

These narratives are consistent with the concepts of 'sealing over' and 'integration' (McGlashan, Wadeson, Carpenter, & Levy, 1977; McGlashan, 1987), further grounded within an explicitly affectively guided and interpersonal stance. The "Freedom & Autonomy" stance has clear parallels with an Integrating recovery style and Secure/Freely Autonomous attachment representations, and also suggests greater levels of mentalisation. Defended Independence echoes both "Sealing Over" and dismissing attachment representation, coupled with lower reflective function. Finally, "Thwarted Recovery" echoes preoccupied attachment organisations, a moderate to high degree of reflective function, and heightened risk of Post Psychotic Depression (Rooke & Birchwood, 1998; Birchwood et al., 2000).

Therapeutic interventions

A psychodevelopmental approach to FEP also suggests new perspectives on psychologically informed models of treatment – both in terms of specific individual therapeutic interventions, and with regard to the general approach of clinical staff to service users. Psychological interventions informed by an understanding of attachment and mentalisation, be they cognitive, interpersonal or psychodynamic in orientation provide a perspective upon the treatment of FEP which is implicitly concerned with the relationship between the individual and their social world (Rosenbaum & Harder, 2007). As discussed above, the content and form of narrative, which in the case of attachment narratives is an affective and linguistic abstraction of ontogenetically earlier observable behaviour (Ainsworth et al 1978; Main, Kaplan & Hesse 2005) provides an insight into the underlying individual state of mind. The current thesis also suggests that this psychodevelopmental perspective is of particular value in enriching interventions for emotional adaptation to the experience of psychosis, rather than psychotic symptoms themselves, a position

consistent with the development of psychological interventions for relapse prevention and staying well (Gumley & Schwannauer, 2006).

In addition, the ethos of early intervention for psychosis as an intensive psychologically informed clinical approach raises the possibility that the provision of needs-responsive care would also serve to foster improvements in attachment security, with or without the addition of psychotherapy. Indeed, the possibility of different trajectories of adaptation to psychosis, suggested by the different attachment organisations and levels of RF is consistent with the proposition that therapeutic interventions may be both needs-adapted to the individual's specific concerns, but also dynamically adapted to his or her stage of adaptation. For instance, individuals with an underlying secure attachment representation and/or moderate reflective function should engage well with therapeutic interventions, and are may voluntarily disclose distress to clinicians as and when it arises. In contrast, those individuals with dismissing attachment representations and/or lower reflective functioning may require a more measured and patient approach to treatment. For instance, psychological interventions may need to begin at a more structural level, addressing specific problems without presupposing a sophisticated understanding of the impact of mental states upon the individual and others. And psychological treatment may need to proceed at a slower pace than interventions for secure/higher mentalisation service users, persist for longer, and move hierarchically from less to more affectively valenced material.

Preoccupied attachment and/or high levels of mentalisation provide a different set of challenges for treatment. These individual's are "psychologically minded", as confirmed by the understanding of mental states implicit within mentalisation. However, affect may well be overwhelming and "unbearable" (Garfield, 1995) to these individuals, thus the clinician needs to be able to contain the individual's distress, in a way that is neither dismissing of the impact upon the individual of such affects nor crisis driven.

With these differences in mind, some interventions may need to cover the duration of the 5-year critical period, to maximise potential for recovery. This philosophy is espoused in therapeutic interventions such as the Finnish "needs-adapted" (Lehtinen, et al 1996) or "open-dialogue" (Seikkula, 2001) treatment models, which are focussed on interpersonal aspects of adaptation to psychosis.

The impact of developmental trauma on adaptation to psychosis

Although the clinical study did not report significant relationships between 4-way attachment classifications and clinical or psychological variables, it is of note that almost 1/3 of the sample were classified as Unresolved with regard to attachment. Recalling that Unresolved status on the AAI refers to narrative disorganisation only when discussing loss or abusive experiences suggests that the experience of these traumatic threats to the attachment system was present in the current sample. It is important to note that although loss is directly probed in the AAI protocol, disclosure of physical or sexual abuse is an elective question, and can only be coded if the interviewee clearly responds in the affirmative. It is not unreasonable to infer that this methodology will make spontaneous disclosure of abuse unlikely. Indeed, the average time from the experience of childhood sexual abuse to disclosure by individuals, if abuse is disclosed at all, has been reported to range from 9.5 years to 16 years (Frenken & Van Stolk, 1990; Andresen, Martin, Mullen, Romans, & Herbison, 1994; Read, McGregor, Coggan, & Thomas, 2006b).

Given that experiences of childhood sexual abuse, physical abuse, and emotional and physical neglect are relevant in psychosis (Read et al,. 2004), and given the importance that such threats to the integrity of the individual's sense of self coherence and their ability to tolerate dysregulating affect are given in an attachment informed perspective on psychopathology, the need to assess the possibility of abuse in the histories of every individual presenting for treatment for psychosis becomes paramount. Read, Hammersly & Rudegair (2007) have

highlighted the need for clinicians to be trained in enquiring about abuse at the earliest appropriate juncture in assessment and in learning the skills to compassionately respond to possible disclosure of abuse. The current thesis strengthens the conceptual basis for this clinical strategy, but also suggests that attachment narratives may offer insights into possible developmental trauma. For instance, a narrative characterised by indices of Unresolved attachment classification may act as an early warning sign for possible underlying trauma in that individual's history. It is however cleat that not asking about the possible experience of abuse is an untenable approach to assessment.

The bio-psychosocial model of psychosis

Acknowledging the impact of attachment, mentalisation and psychodevelopmental frameworks on onset and adaptation to psychosis also poses difficulties for the "narrow" biogenetic model of psychosis and schizophrenia (e.g. Weinberger &McClure, 2002). The analogue study reported that higher levels of insecure attachment style and interpersonal problems were linked to higher levels of paranoid ideation and hallucinatory phenomena. In the clinical sample over 70% of the sample were classified as giving a narrative indicative of an insecure attachment organisation. No attachment informed perspective on the aetiology of psychopathology would deny that the interplay between the attachment system and the risk of psychopathology involves a substantial biological component (e.g. Bowlby, 1969/1982, 1973, 1980; Siegel, 1999; Fonagy & Bateman, 2006). Schore (2004a,b) has written extensively on the pathogenic impact of early trauma to the attachment system upon the infant's emergent neurobiological system. However, where attachment theory as applied to mental health departs from biological models of mental illness is in it's openness to a dynamic, unfolding interplay between the individual's sense of self, his or her neurobiology and physiology, interactions with significant others, and the impact of the wider social environment. The current thesis has concentrated on the psychological aspects of this synergy – i.e. attachment organisation, mentalisation, interpersonal problems and premorbid social/academic development – but future research could explore psychobiological aspects of

attachment in psychosis e.g. stress reactivity, or neuroimaging of the Fonagy & Bateman's "A" and "B" systems (2006).

Furthermore, there are important implications for treatment models. The position of medication in FEP as the first line of intervention is problematic within an attachment framework. Dopamine dysregulation has been hypothesised to be the neurobiological mechanism underlying the subjective experience of positive psychotic symptoms (Kapur, 2003). However, Read and colleagues (2001) suggest that the effects of dopamine dysregulation in psychosis are identical to the neurobiological sequelae of childhood trauma. Antipsychotic medication acts upon dopamine receptors in the brain,, by dampening down the activity of those receptors. However, dopamine is also one of the key chemicals linked to the neurobiological substrate of the experience of reward and positive emotion (e.g., Insel, 1997), and the facilitation of social attachments (Insel, 2003). Therefore, the introduction of medication which dampens dopamine activity will also inhibit these behaviours and feelings. Indeed, in a study where mother-infant interactions in rats were blocked by the use of a dopamine antagonist, the drug used was c-flupenthixol, a variant of a "typical" antipsychotic (Vernotica, Rosenblatt, & Morell, 1999). If an attachment informed perspective on psychosis is adopted, incorporating an understanding of the sequelae of attachment related threats and trauma, a greater awareness of the effects of treatment on the psychobiosocial system may also be needed. Although medication may alleviate acute distress in the short-term, it may be necessary to access affectively valenced memories in the medium to longer term as part of a psychologically informed approach. This approach would require an integrative understanding on the impact of both biological and psychological treatments on the individuals cognitive, emotional and behavioural functioning.

An attachment informed perspective on psychosis also highlights the role of reciprocity in help-seeking. In helpseeking there is the individual seeking help and the "helper" – the individual to who help is sought. The literature to date on pathways to care in psychosis has focussed on establishing how individuals come

into care, and to a lesser extent which health care professionals are accessed (as was emphasised earlier in this chapter the role of GP's at this juncture is crucial). The clinical study is no different in this regard, noting that successful help-seeking is predominantly instigated by another, which includes health professionals referring on to appropriate services. Healthcare professionals should be aware of the dyadic relationship implicit within an attachment model of help-seeking. The individual help-seeking may not be accurately able to articulate his or her distress, but a compassionate "secure base" approach to the clinical interaction represents a vital first step in engaging with the individual. In this situation, models of mental illness which reduce often unclear presentations to genetic or biological abnormalities may be counter-productive to engagement, whereas a clinical stance which acknowledges that trauma or loss may be a factor within the presentation may aid initial engagement.

Similarly, an attachment framework has important clinical implications for treatment strategies after the onset of psychosis. Although the current thesis is grounded in the context of an early intervention model where psychologically informed treatment is available, this is not the norm world-wide. It is crucial to the development of better treatments for psychosis that psychologically informed *practice* becomes *de rigeur*, although acknowledging that not all individuals will need psychological *intervention*. Furthermore, linking attachment, mentalisation and premorbid adjustment to the presentation of psychosis underlines that a narrow illness model is an over simplification of the multiplicity of pathways into and out of psychosis. Psychoeducation (to both the individual and loved ones) which reinforces a biologically derived stress-vulnerability model does not adequately address the interpersonal dynamics of adaptation to psychosis (Aderhold & Gottwalz, 2004). To this end, Read and colleagues (2007) reiterate that Zubin and Spring's (1977) original formulation of stress-vulnerability emphasised that the vulnerability component may be "*due to the influence of trauma, specific diseases, perinatal complications, family experiences, adolescent peer interactions, and other life events that either enhance or inhibit the development of subsequent disorder*" (p. 109). The renewed psychodevelopmental perspective offered by attachment and

mentalisation may allow for a rapprochement between biological and psychological models of psychosis.

Primary prevention – psychosis in the context of prevention of mental health difficulties

There is also the possibility that attachment and psychodevelopmentally informed perspectives on psychosis can, in addition to aiding recovery and staying well after psychosis, also influence primary prevention. In this regard, the ethos of this thesis is consistent with the mental health philosophy currently being espoused in Scotland (The Scottish Government, 2007). Health policy guided by the predictions of attachment policy is already being advocated as a framework for reducing health inequalities and promoting salutogenic development in the early years of life. However, the current thesis provides preliminary evidence that in the Scottish context, attachment theory can also be of value in the understanding of mental health difficulties in adulthood, which themselves may be influenced by sub-optimal developmental experiences. Thus, attachment informed perspectives on mental health, even in acutely distressing conditions such as psychosis can be of influence at the level of service design and health provision.

The theoretical stance and empirical evidence of this thesis suggests there is value in focussing on interventions which promote the development of secure attachment and mentalisation skills. To increase prevention of psychosis, health policy needs to embrace primary prevention and the impact of social factors (Albee, 1996). Davies & Burnett (2004) outline several areas of social and health policy to target in seeking to prevent schizophrenia. These are: decreased reliance on narrow biological models of illness, decrease the impact of stressors such as poverty, exploitation and child abuse, end corporal punishment, strengthen community provision for the teaching of coping skills, enhanced self esteem and enhancing social networks, and promote a nurturing educational ethos. Although this outline could be critiqued as a hypothetical "wishlist" all these areas are ones in which the tenets of attachment theory are relevant.

Bowlby's initial formulation of attachment was presented within a public health report for the World Health Organization (1951). Theoretically, if attachment and mentalisation principles (and particularly the role of insecure attachment and impaired mentalisation) are applicable to psychosis, as this thesis has demonstrated, then at least some cases of psychosis can be prevented by interventions which promote secure attachment and improved mentalisation. As insecure attachment is a risk factor for many psychopathologies, such interventions should also reduce the incidence of a variety of mental health difficulties. This line of intervention is now being put into practice. Techniques designed to enhance mentalisation are also being integrated into shorter term treatment programmes to develop healthy and sustaining mother-baby relationships in inner city families (Sadler, Slade & Mayes, 2006) and for children and adolescents (e.g. SMART; Fearon, Target, Sargent, Williams, McGregor, Bleiberg & Fonagy, 2006). These programmes are showing early promise in terms of promoting health, wellbeing and quality of life in the target groups. It is to be hoped that these gains can be maintained and also that the promotion of resilience implicit within these interventions can serve as an example of how to reduce incidence of all mental health difficulties, including psychosis. As attachment and mentalisation are both closely linked to affect regulation, this position would be further underlined if psychosis was to be viewed as a disorder with an affective component, an issue which I address below.

A psychodevelopmental perspective on affect in psychosis

Throughout this thesis, it has been the author's contention that it is possible to improve our understanding of FEP by utilising a psychodevelopmental framework, and also that this understanding would follow a Bleulerian focus on the ramifications for adaptation and outcome of the affective aspects of psychosis, rather than focussing exclusively on positive psychotic symptoms. Therefore, it is necessary to ask – does the data support this theoretical stance?

Firstly, the results of the clinical study offer an interesting parallel with Bleuler's (1911/1950) observation that in schizophrenia, hallucinations and delusions are secondary to the primary splitting of cognitive and affective aspects of functioning. In the first episode sample, the level of positive symptomatology was relatively low and largely controlled within the first 6 months of treatment. Given the historical context in which Bleuler wrote, with no access to antipsychotic medication, it seems not unreasonable to propose that some reduction of acute distress and the dampening of negative affect is conferred (at least in the short term) by the prescription of medication acting upon dopaminergic pathways. However, supporting Bleuler's position, the first episode sample did display difficulties in the affective-interpersonal domain – affective symptomatology was indicative of an average level of mild depression, mean scores for psychological and social relational quality of life were under 60% (where 100% is optimal functioning in that domain), and over half of the sample was not in employment. Therefore, the primary difficulties evident in the sample were in regulating affect and being able to reflexively interact with the social world. Intriguingly, the current study did not report any differences in positive or negative psychotic symptomatology and general psychopathology between individuals with a diagnosis of non-affective psychosis and those individuals with an affective psychosis diagnosis.

The current data is also consistent with the substantial literature observing that difficulties in functioning, which are not themselves psychotic in content or form, emerge long before the onset of overt psychotic symptomatology (e.g. Bleuler, 1911/1950; Cameron, 1938; Parnas 1999; Møller 2001; Norman, et al. 2005). In the current sample, the DUP has a median value of 20 weeks, however the duration of non-specific symptomatology prior to the DUP was 66 weeks. Therefore, even in the context of robust identification of emerging FEP, the onset of psychosis is more often than not preceded by non-psychotic symptoms. Furthermore, although the current thesis does not take the position that poor premorbid adjustment is indicative of an emergent illness process, difficulties in premorbid functioning, particularly in the domain of social functioning also seem to feature in the first episode presentation. Sub-optimal premorbid adjustment may represent a risk factor for time to recovery,

and emergence of secondary difficulties, rather than merely an indicator of "chronic" course.

The current thesis recasts Bleuler's emphasis on affect within a broader psychodevelopmental framework – whereby the cognitive, affective and interpersonal aspects of presentation and adaptation to the experience of psychosis are reflections of developmental processes, and the dynamic nature of self and other awareness. Both attachment theory - via the concept of internal working models (Bretherton, 1985; Main, 1991) - and mentalisation – via reflective function and mentalised affectivity (Fonagy, et al., 2002) are perspectives on psychological integration and coherence. , In the case of psychopathology this integrative perspective emphasises the *dis-i*ntegration and fragmentation of the individual's sense of coherence. With regard to psychosis, such a framework has been articulated before – such as in the integratory perspective of Ciompi's (1984; 1988; 1991) formulation of Affect-Logic (described as "*an appropriated German neologism meaning, simultaneously, 'the logic of affectivity' and the 'affectivity of logic'* (Ciompi, 1998)). The current perspective is also consistent with an orientation towards treatment which highlights the dynamic interactional nature of psychological and biological processes, unfolding over time, and their ramification for both salutogenesis and pathogenesis (e.g. Alanen, 1994). This perspective positions cognition and affect, within a developmental framework, emphasising the fragmentation of these faculties in the onset of the disorder, and giving primacy in clinical intervention to the re-integration of cognitive and affective functioning.

Turning to attachment first, the clinical study demonstrates heterogeneity of attachment representations in FEP – unrelated to specific diagnosis. Although the majority of individuals display an insecure dismissing stance - minimising attention towards and discussion of affective concerns in close relationships – approximately 25% of individuals display an underlying model of attachment security, whereby the impact of negative and positive interpersonal experiences can be integrated into a coherent narrative without overwhelming affective consequences. A minority of

individuals displayed a preoccupied attachment representation in which attachment related affect becomes chronically activated. The current study suggests that these different patterns associate with variation in engagement with clinical services, and quality of life – with those individuals with a secure attachment state of mind displaying better earlier adaptation. In contrast, individuals with a preoccupied attachment state of mind are perceived to be less well engaged with services For these individuals the effect of affective dysregulation may undermine an integrating adaptation to psychosis. The Dismissing attachment group represents a challenge for clinicians in terms of identifying the emotional impact of psychosis upon the individual, with ramifications for successful identification of relapse signatures and plotting recovery (Gumley & Schwannauer, 2006). Furthermore, attachment states of mind do not appear to impact upon the initial mode of development of psychosis, but influence adaptation, capacity to integrate the experience and therefore presumably have an effect upon recovery.

Mentalisation (via reflective function) also appears to be an important interpersonal construct in adaptation to psychosis, closely associated with attachment organisation. Higher levels of reflective function were associated with secure or insecure-preoccupied attachment, while insecure-dismissing attachment appeared to be associated with lower levels of reflective function. Therefore, extending the purely cognitive conceptualisation of theory of mind deficits in psychosis (e.g. Frith, 1992) to encompass an affective dimension (Fonagy's mentalised affectivity) the disjunction of affect and cognition is evident in the pattern of dismissing attachment and low reflective function. In this presentation affect is minimised, but in conjunction with a lack of reflexive understanding of mental states, putting the individual at a disadvantage in the sociocognitive task of inferring the mental states of others. Furthermore, these individuals appear to have a lower psychological quality of life.

The attachment perspective on psychosis may also hold promise for understanding psychotic symptomatology, via the role of attachment as an evolutionary model of security-seeking, and adaptation to the absence of security. As Chapter 6 outlined,

higher levels of paranoia appeared to be related to greater levels of attachment avoidance and anxiety, coupled with an interpersonal stance of distancing. In contrast, hallucinatory phenomena appeared to be predicted by either heightened levels of attachment anxiety and difficulties in interpersonal affiliation, *or* greater levels of attachment avoidance and greater interpersonal distancing. The implications of these findings were discussed in detail in Chapter 6; however in the context of the current discussion it seems pertinent to highlight the symbiosis of distal developmentally derived factors (attachment) and more proximal interpersonal factors in heightening endorsement of psychotic phenomena. This model of psychotic phenomenology thus incorporates affective, interpersonal and cognitive aspects, which combine in different ways depending on the symptom/phenomena in evidence.

Finally, the other key aspect of the attachment perspective that was introduced in Chapter 5 was that of the role of prototypical threats to the attachment system such as loss, separation and trauma may play in conferring vulnerability both to psychotic symptomatology and difficulties in adaptation to psychosis. Although the clinical study did not explicitly investigate links with trauma, just under a third of the sample were categorised as unresolved on the AAI with regard to loss or abuse. In addition, trauma may have been under-reported due to the phrasing of the relevant questions on the AAI. That not withstanding, this finding suggests that a proportion of individuals adapting to FEP conform to this attachment pattern, conferring risk of disorganisation in the face of affectively valenced experiences, By incorporating factors such as attachment disorganisation, which has it's roots in the experience of care-giving as frightening or disorientating, extends the psychodevelopmental model beyond merely acknowledging the role of affect. Indeed, the model that emerges is one whereby psychodevelopmental factors such as attachment and mentalisation are parts of a dynamic framework which, although not necessarily conferring vulnerability to psychosis over other forms of psychopathology, does have an impact on how the individual adapts, and integrates the experience of the initial episode of psychosis, and the initial experience of treatment. Therefore, it is these factors which may be at the root of the emergence of a positive recovery trajectory or in contrast

the entrenchment of secondary difficulties and a more complex route to recovery. Indeed, the future promise of attachment theory as applied to psychosis lies in capturing the dynamic process of recovery; a process encapsulated within the words of John Bowlby, with which this thesis concludes: *"although the capacity for developmental change diminishes with age, change continues throughout the life cycle so that changes for better or for worse are always possible. It is this continuing potential for change that means that at no time of life is a person invulnerable to every possible adversity and also at no time of life is a person impermeable to favourable influence. It is this persisting potential for change that gives opportunity for effective therapy* (1988a; p.154)*."*

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Date viewed:	Date reviewed:	Reviewer:

Appendix 1: Systematic Review Data Extraction Proforma

DRAFT Systematic Review Rating Pro-forma

General Data

Study Reference Number:	
Title of study:	
Authors:	
Journal:	
Publication year:	
Cohort (Abbreviation, place, year):	
Related Studies from cohort (if applicable):	
Additional notes	

1) Study Design

Type of study	
Retrospective/Prospective	
Interventions used?	
Additional notes:	

2) Follow-up

Follow-up time points	
Drop-out rate (%)	
Notes	

3) Sample Demographics & Diagnostics:

Sample number	
Gender split (M/F)	
Age (mean, s.d.)	:
Relationship status	
Sample composition	
Diagnostic Criteria used	
Treatment method (e.g. inpatient)	
Medication distribution	
First Episode Definition	
Exclusion Criteria	
Additional notes:	

4) Comorbidity

Depression (Y/N)	
Measurement tool	
Details	
Substance Abuse	
Proportion of participants	

5) DUP

Measurement tool used	
Assessor	
Start point used for calculation	
End point used for calculation	
DUP rater blind?	
Unblindings?	
Method of calculation	
Data mean	
Data median	
Data transformation?	
Inter-rater reliability?	
Period of antipsychotic medication?	
Symptom criteria for DUP	
Mode of onset used	
Additional notes:	

6) DUI

DUI (Yes/No)	
Start point	
End point	
Additional notes	
Statistics	

7) Premorbid adjustment

Assessment tool	
Assessor	
Inter- rater reliability?	
Reporting: Intellectual domain	
Reporting: Social domain	
Reporting: General domain	
Statistics: Intellectual functioning	
Statistics: Social Functioning	
Additional notes	
Additional statistics/Associations	

8) Additional factors assessed

Quality of Life (Y/N)	
Measurement tool	
Details	
Social support (Y/N)	
Measurement tool	
Details	

Cognitive Functioning (Y/N)	
Measurement tool	
Details	
Positive Symptom Severity (Y/N)	
Measurement tool	
Details	
Negative Symptom Severity (Y/N)	
Measurement tool	
Details	
General Symptom Severity (Y/N)	
Measurement Tool	
Details	
Global Functioning (Y/N)	
Measurement tool	
Details: Symptoms	
Details: Functioning	
Education level (Y/N)	
Measurement criteria	
Family history taken? (y/n)	
Additional measures	
List	
Details	

9) Statistical measures

DUP and Premorbid Adjust.compared?	
Confounding factors: (association/significance)	
Survival curves to hospitalisation (w/details)	
Additional Statistical measures	

Appendix 2: Ethical Approval Letter for Analogue Study

Dr A.M. McNicol
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AMMcN/AMJG

Mr Angus MacBeth
Section of Psychological Medicine
Academic Centre
Gartnavel Royal Hospital
1055 Great Western Road
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25/05/2005

Dear Mr Angus MacBeth

Medical Faculty Ethics Committee

Project Title: Attachment style and unusual experiences in a non-clinical population: An analogue study.

Project No.: FM00404

The Faculty Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. They are happy therefore to approve the project, subject to the following conditions:

- The research should be carried out only on the sites, and/or with the groups defined in the application.
- Any proposed changes in the protocol should be submitted for reassessment, except when it is necessary to change the protocol to eliminate hazard to the subjects or where the change involves only the administrative aspects of the project. The Ethics Committee should be informed of any such changes.
- If the study does not start within three years of the date of this letter, the project should be resubmitted.
- You should submit a short end of study report to the Ethics Committee within 3 months of completion.

Yours sincerely,

pp Anne Gee

Dr. Anne M McNicol
Faculty Ethics Officer

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Appendix 3: Information Sheet for Analogue Study

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Participant Information Sheet

Study Title: Attachment style and psychotic experiences in a non-clinical population: An analogue study

I would like to invite you to take part in a research study. My name is Angus MacBeth and I am a Research Student. I am interested in people's feelings about close relationships and their experience of unusual or phenomena.

Before you decide whether you would like to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?

This research is being carried out to help us learn more about psychotic experiences. These may include hearing voices, paranoia, and feeling confused or 'not yourself'. Many people will experience psychotic phenomena at some point in their lives, often without becoming distressed by them. I am interested in how an individual's experience of close relationships (such as with a girlfriend/boyfriend) affects psychotic phenomena. You do not need to be in a current relationship with a boyfriend/girlfriend to take part.

The study will help us plan further research into understanding psychotic experiences and help to plan therapies for people who do become distressed by psychotic experiences.

Why have I been chosen?

We are asking people aged 16 – 35, attending a selection of Glasgow Colleges to take part. Your College is one of the colleges that has agreed to be involved.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you decide to take part we would like you to sign a consent form. The consent form is a way of making sure you know what you have agreed to. If you decide to take part you are still free to withdraw at any time and you do not have to give a reason. I will give you a copy of the consent form and a copy of this information sheet to keep.

What will happen next?

If you decide to take part I will be in touch to arrange a convenient time for you to take part in the study.

What do I have to do?

The study will take place at your College. When we meet I will give you a pack containing a set of 9 questionnaires. These are all questionnaires that you fill in on your own. The questionnaires ask about various aspects of close relationships, any unusual experiences that you may have had, and about your current mood.

I will ask you to fill in all the questionnaires and a short sheet of information about yourself. You will be given an opportunity to ask any questions before beginning the questionnaire pack. If you have any questions during the study I will be available to help.

What are the possible disadvantages and risks of taking part?

Although it is unlikely, it is possible that the questionnaires may ask about experiences that you may feel distressed about. If this happens you can stop and take a break or leave the study. If there is anything raised in the study that you still feel distressed by after the study, please contact me at the number given below and I can put you touch with people that may be able to help.

What are the possible benefits of taking part?

There are no direct benefits to you of taking part. The study will help us plan further research into the nature of psychotic experiences and help to plan therapies for people who do become distressed by psychotic experiences.

Will my taking part in this study be kept confidential?

Yes, any information you give us will be anonymous. The only time you have to identify yourself by name is on the consent form. This is kept separate from all the other information.

What will happen to the results of the research study?

I will provide you with a summary of the results of the study. The final results and conclusions of the study will be published in a scientific journal and will form part of my Doctoral Thesis. Your identification will not be included in any publication.

Who is organising and funding the research?

The University of Glasgow.

Who has reviewed the study?

The study has been reviewed by the Department of Psychological Medicine to ensure that it meets important standards of scientific conduct and has been reviewed by the University of Glasgow, Faculty of Medicine Ethics Committee to ensure that it meets important standards of ethical conduct.

Contact for Further Information

If you have any further questions please feel free to ask me them. After the study, you can also phone and speak to me on the following number [*Insert Clinical Base Number*]. If I am not in, then you can leave a message and I will return your call.

Thank you very much for reading this and for any further involvement with this study.

Appendix 4: Consent form for Analogue Study

UNIVERSITY
of
GLASGOW

Identification Number for this study:

CONSENT FORM

Title of Project: Attachment style and psychotic experiences in a non-clinical population: An analogue study

Name of Researcher: Mr Angus MacBeth

Please initial box

I confirm that I have read and understand the Participant Information sheet dated 22nd October 2004 (version 1) for the above study and have had the opportunity to ask questions. ☐

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights being affected. ☐

I understand that the information I provide as part of the study is anonymous. ☐

I agree to take part in the above study. ☐

_____	_____	_____
Name of participant	Date	Signature

_____	_____	_____
Researcher	Date	Signature

1 for participant, 1 for researcher, 1 to be kept with medical notes.

Appendix 5: Clinical Study Ethical Approval

SL3 Favourable opinion at first review
Version 2, October 2004

North Glasgow University Hospitals
Division

West Glasgow Ethics Committee 1

Telephone: 0141 211 6238
Facsimile: 0141 211 1920

Email: andrea.torrie@northglasgow.scot.nhs.uk

10 December 2004

Mr Matthias Schwannauer
Lecturer in Clinical Psychology
University of Edinburgh
Section of Clinical and Health Psychology
Kennedy Tower, Royal Edinburgh Hospital
Edinburgh
EH10 5HF

Dear Mr Schwannauer

Full title of study: *Glasgow-Edinburgh First Episode Study: developmental, interpersonal and psychological predictors of outcome.*

REC reference number: *04/S0703/91*

The West Research Ethics Committee reviewed the above application at the meeting held on 07 December 2004. The Committee wished to thank you for attending the meeting to discuss your study

Ethical opinion

The Committee had concerns initially that the number of "drop outs" might leave you short of numbers but you confirmed the low number of drop outs at your clinics and the committee were happy with this.

The Committee also informed you that we could not give approval to "Under 16s" taking part in the trial and that you would have to seek approval (via a SSA from a paediatric committee) - likewise with "Adults with Incapacity" - if you intend to recruit these participants you would have to submit the whole study to a "type 3" MREC. You agreed that these patients would not be recruited.

The "Young persons Information Sheet" required the undernoted amendments:

a) A sentence should be added as to how long each meeting/interview etc will last and what happens at each meeting.
b) The possible benefits of taking part should be inserted.
c) Participants should be informed that only audio tape-recording will be used.
d) Under Section "Will my taking part be kept private" - a further sentence should be added i.e. "to do this. There may also be some things that come up which we think that

01811

EPSS/your doctor should know to help your treatment and under these circumstances we will inform them"

The above minor amendments should come back to me for filing.

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

However, the Committee has not yet been notified of the outcome of any site-specific assessment (SSA) for the research site(s) taking part in this study. The favourable opinion does not therefore apply to any site at present. I will write to you again as soon as one Local Research Ethics Committee has notified the outcome of a SSA. In the meantime no study procedures should be initiated at sites requiring SSA.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The documents reviewed and approved at the meeting were:

Document Type:	Version:	Dated:	Date Received:
Application		25/11/2004	25/11/2004
Investigator CV		25/11/2004	25/11/2004
Protocol		25/11/2004	25/11/2004
Covering Letter		25/11/2004	25/11/2004
Summary/Synopsis		25/11/2004	25/11/2004
Interview Schedules/Topic Guides		25/11/2004	25/11/2004
Copy of Questionnaire		25/11/2004	25/11/2004
Letters of Invitation to Participants		25/11/2004	25/11/2004
GP/Consultant Information Sheets		25/11/2004	25/11/2004
Participant Information Sheet		25/11/2004	25/11/2004
Participant Consent Form		25/11/2004	25/11/2004
Other		25/11/2004	25/11/2004

Management approval

The study should not commence at any NHS site until the local Principal Investigator has obtained final management approval from the R&D Department for the relevant NHS care organisation.

Membership of the Committee

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

Notification of other bodies

The Committee Administrator will notify the research sponsor that the study has a favourable ethical opinion.

Statement of compliance

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

04/S0703/91	**Please quote this number on all correspondence**

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

Yours sincerely,

Andrea W Torrie

~~Chair~~ Administrator - West Ethics Committee

E-mail: andrea.torrie@northglasgow.scot.nhs.uk

Enclosures *List of names and professions of members who were present at the meeting*

Standard approval conditions

Site approval form (SF1)

Enclosure 3

West Glasgow Ethics Committee 1

LIST OF SITES WITH A FAVOURABLE ETHICAL OPINION

For all studies requiring site-specific assessment, this form is issued by the main REC to the Chief Investigator and sponsor with the favourable opinion letter and following subsequent notifications from site assessors. For issue 2 onwards, all sites with a favourable opinion are listed, adding the new sites approved.

REC reference number:	04/S0703/91	**Issue number:**	1	**Date of issue:**	10 December 2004
Chief Investigator:	Mr Matthias Schwannauer				
Full title of study:	Glasgow-Edinburgh First Episode Study: developmental, interpersonal and psychological predictors of outcome.				

This study was given a favourable ethical opinion by West Glasgow Ethics Committee 1 on 07 December 2004. The favourable opinion is extended to each of the sites listed below. The research may commence at each NHS site when management approval from the relevant NHS care organisation has been confirmed.

Principal Investigator	Post	Research site	Site assessor	Date of favourable opinion for this site	Notes [1]

Approved by the Chair on behalf of the REC:

Andrea H Torrie ..... (Signature of ~~Chair~~/Administrator*)

(*delete as applicable)

ANDREA H TORRIE ..... (Name)

[1] *The notes column may be used by the main REC to record the early closure or withdrawal of a site (where notified by the Chief Investigator or sponsor), the suspension of termination of the favourable opinion for an individual site, or any other relevant development. The date should be recorded.*

SF1 Site approval form, version 2, September 2004

Principal Investigator	Post	Research site	Site assessor	Date of favourable opinion for this site	Notes [1]
Dr Matthias Schwannauer	Consultant Clinical Psychologist	Lothian Primary Care Trust, EPSS Morningside Edinburfgh This is a dedicated first episode psychosis service with a community base.	Lothian Admin	14/01/2005	
Dr Alison Blair	Consultant Psychiatrist	Greater Glasgow Mental Health Division ESTEEM, Springburn, Glasgow. This is a dedicated first episode psychosis service with a community base.	NHS Greater Glasgow Primary Care Division (Community & Mental Health)	02/03/2005	

Approved by the Chair on behalf of the REC:

..... (Signature of ~~Chair~~/Administrator*)

(*delete as applicable)

A. H Torrie (Name)

[1] *The notes column may be used by the main REC to record the early closure or withdrawal of a site (where notified by the Chief Investigator or sponsor), the suspension of termination of the favourable opinion for an individual site, or any other relevant development. The date should be recorded.*

Appendix 6: Clinical Study Management Approval (Glasgow)

Primary Care Division

Research & Development Directorate
NHS Greater Glasgow and Clyde
The Tennent Institute
WIG, 38 Church Street
Glasgow
G11 6NT

NHS
Greater Glasgow and Clyde

Angus MacBeth,
Section of Psychological Medicine,
University of Glasgow,
Academic Centre,
Gartnavel Royal Hospital,
1055 Great Western Road,
Glasgow G12 0XH

Direct Line 0141 232 9524
Fax 0141 232 9516
Email mary.fraser@ggc.scot.nhs.uk

Date 05 September 2007

Dear Angus MacBeth,

Project Title: The applicability of attachment theory to the study of first episode psychosis

I am pleased to inform you that R&D management approval has been granted by NHS Greater Glasgow & Clyde Community and Mental Health Partnership, subject to the following requirements:

- You should notify me of any changes to the original submission, including copies of notification to ethics committee(s) and send regular, brief interim reports including recruitment numbers where applicable. You must also notify me of any changes to the original research staff and send CVs of any new researchers.
- Researchers covered in this approval are:- **yourself; Dr A. Blair; Professor K. Davidson; Dr S. Clark; and Dr A. Gumley**
- Your research must be conducted in accordance with the Scottish Executive Health Department, *Research Governance Framework for Health and Community Care* (Second Edition, 2006) see Chief Scientist Website http://www.sehd.scot.nhs.uk/cso Local research governance monitoring requirements are presently being developed. This may involve audit of your research at some time in the future.
- You must comply with any requirements regarding data handling (Data Protection Act). Advice may be obtained from the Scottish Executive Confidentiality and Security Advisory Group for Scotland website http://www.csags.scot.nhs.uk/
- A final report, with an abstract which can be disseminated widely within the NHS, should be submitted when the project has been completed.

Do not hesitate to contact the R&D Office if we can be of any assistance.

D370787

We wish you every success with your project.

Yours sincerely

Mary Fraser

Dr Mary Fraser

Appendix 7: DUP, O.C.T. and Help-seeking Protocol (adapted from Beiser et al, 1993; Larsen et al 1998)

1. Onset of Psychosis (DUP start point):

Calculated using the positive symptom section of PANSS (Kay, Fiszbein & Opler, 1987)

The onset date (researcher's estimate) is defined as the date when:

a. any one symptom (P1 to P7) is rated as moderate or above (4 or above) in the context of a manifestation of psychotic symptoms. The symptom must have lasted throughout the day for several days or several times a week, not being limited to a few brief moments.

OR

b. a cluster of symptoms (P1 to P7) reaches a total rating of 7 or more (not rating absent symptoms). The cluster must include at least one of the symptoms P1 (Delusions), P2 (Conceptual Disorganisation) or P3 (Hallucinatory Behaviour) to qualify as onset of psychosis.

These symptoms must be present for a period of **two weeks or more** (allowing for remittance due to treatment) to be considered as the onset of psychosis.

2. Onset of Criteria Treatment (O.C.T.):

This date is defined as the date when neuroleptic treatment is commenced which:

1a) **is at or above dosage levels recommended by IRIS guidelines *(see attached list)***

AND

1b) **continues for a period of at least one month, *compliance* across that month being scored as 1 or 2 on the scale below:**

OR *2) leads to a* significant reduction in symptoms

Compliance

1. Evidence from source that the client is taking medication as prescribed.

2. Evidence from source that client is regularly taking medication although too little or too much.

3. Evidence from source that client is taking medication but only on an occasional basis.

4. Evidence that client is non-compliant with medication.

5. Information regarding compliance was not available from source.

Compliance may be assumed where a client is on home treatment or is hospitalised, and there is no record of non-compliance. Where a client has initially been non-compliant, the date of Onset of Criteria Treatment is at the point where the patient begins taking medication.

Significant reduction in psychotic symptoms

May be evidenced by:

1 A reduction in medication
2 Hospital leave in excess of 1 week
3 Medical notes suggesting a significant reduction in symptoms.

Note that the duration of the reduction of psychotic symptoms is irrelevant, as the psychosis has been effectively treated.

2b) IRIS neuroleptic dosage equivalents

Antipsychotic	Daily dose
Chlorpromazine	100 mg
Clozapine	50 mg
Haloperidol	2–3 mg
Loxapine	10-20 mg
Pimozide	2 mg
Sulpiride	200 mg
Thioridazine	100 mg
Trifluoperazine	5 mg
Risperidone	0.5 - 1 mg
Aripiprazole	10mg

Olanzapine	5mg
Quetiapine	300mg

IRIS guidelines recommend a dosage equivalent to 2-3mg haloperidol. Equivalent dosages were derived from BNF-55(Section 4.2.1.; retrieved from www.bnf.org on 19/03/08 and discussed with a senior international researcher in FEP (Jean Addington ,personal communication 19/03/08). The recommended dosage for Risperdal given in BNF-55 (2-4mg) is at variance with the dose equivalent.

3) Duration of Untreated Illness (DUI)

Duration of untreated illness is defined following the guidelines of Norman et al | Psych. Med., 34, 255 – 266; 2004; p.257) as the onset of *"noticeable psychiatric symptoms, such as marked symptoms of depression or anxiety" and/or the first signs or symptoms that indicate a change from an individual's previous stable level of functioning (regardless of the level of that functioning).* This is in contrast to problems or concerns expressed by the participant or relevant others regarding a lifelong behaviour pattern or characteristic such as "always being socially shy" or "a tendency to be anxious and worried since a young child".

Characteristics/patterns such as the above should be noted on the DUP/DUI summary reports and diagrams; however they are not part of the DUI onset criterion.

Where first noticeable psychiatric symptoms reflect psychosis, DUI and DUP will be the same date.

In contrast to some research protocols (e.g. Keshavan et al, Schiz. Bulletin, 29, 757 – 769, 2003), depression and anxiety ARE included as relevant symptom indicators for the onset of DUI.

4) Definition of Helpseeking characteristics

Helpseeking is defined as: the act of seeking advice/treatment from an external individual or agency who could be reasonably construed to be a "helping professional".

Adapting the definition of "helping professional" from Norman et al (2004) the study considers the following individuals and services to be appropriate (although comprehensive, this list is not exhaustive):

General Practitioner

Hospital A & E Department

Non-emergency Hospital Services

Psychiatrist

Psychologist

Primary Care Mental Health Team Worker

Community Psychiatric Nurse

Social Worker

Community Mental Health Team

(specify professional orientation)

Counsellor

Student Health Services

Student Counsellor

Paediatrician

Addiction Services

Child and Adolescent Mental Health Specialist (specify professional orientation)

Early Intervention Service (adult or adolescent)

In-patient Psychiatric Services

Police

Religious Leader

Neurologist

Private Health Service (specify professional)

Prison Services

Educational Services

Homeless Services

Support Worker

4b) What constitutes a "helpseeking pathway"?

A discrete pathway is classified as one help-seeking attempt, initiated by an **individual** or **other**, where there has been attempted contact involving the participant and a "helping professional" as defined above. The help-seeking pathway ends when an **outcome** has been reached.

Outcome consists of one of the following options – treatment by a "helping-professional", referral on to another helping professional, no treatment offered, or the individual declines/disengages from the pathway. Given the multiplicity of possible pathways, the process and outcome of each help-seeking attempt should be carefully noted on the pathways to care recording sheet.

Notes

If the initial help-seeking attempt leads to a referral to another agency this should be noted as **ONE** help-seeking attempt. (e.g. GP referral to Clinical Psychologist is **one** help-seeking attempt).

- If the individual attends the agency they are referred on to, this counts as a **SECOND**, separate pathway. This is then counted as one help-seeking attempt until an **outcome** is reached. (e.g. in the above example if the individual then attends the appointment with a Clinical Psychologist this is a **second** pathway. If the participant then has 3 sessions of psychological intervention with Clinical Psychologist, then discharged, this would be counted as part of the **second** pathway).

- If on the other hand the individual **does not** attend the referral onward, it should be noted as the conclusion of the first pathway. As a rule, disengagement from an intervention is the logical conclusion of a pathway.

- If the individual has a help-seeking attempt (e.g. GP presentation) which then leads directly to hospital admission this counts as **one** pathway - the details should be clearly recorded on the pathways recording sheet.

4c) Multiple help-seeking contacts within the same day.

In the case of multiple help-seeking contacts within the same day. If there is a clear pathway from one agency to another, this is noted and treated as **one** pathway.

- For instance, if an individual presents to his/her GP, is referred directly to Accident and Emergency, attends A & E, and from there is assessed by a Secondary Mental Health Service Psychiatrist this counts as **one** continuous pathway.
- However, if the participant attends the GP in the morning, leaves without treatment being indicated or offered, and *then* presents to A & E in the evening, this would count as **two** discrete help-seeking attempts.

The governing principle is that an **outcome** should be reached. In the first example each contact with a helping professional is a continuation of the first contact, without an intervention being offered or disengagement occurring, it is effectively an ongoing assessment. In the second example the first pathway reaches an outcome – of no treatment being offered. Therefore the A & E presentation is a separate pathway.

4d) Help-seeking attempts initiated by "other"

There is a separate space on the Pathways sheet for help-seeking attempts initiated by "other" - that is to say, an individual who is not the participant.

As a definition "other" includes:

Parent

Relatives e.g. Grandparents, Uncles/Aunts, Cousins etc.

Friends

Partner (including boyfriend/girlfriend)

Flatmate

Work Colleague

All of the agencies listed above under "helping professional.

All parties involved in each help-seeking pathway should be clearly listed on the pathway recording sheets.

Appendix 8: Information Sheet for Clincal Study

Participant Information Sheet

Study Title: Glasgow-Edinburgh First Episode Psychosis Study

Dear *Person,*

I would like to invite you to take part in a research study. My name is *Researcher* and I am a Research Assistant, working as part of a research team. *RMO* and *KEYWORKER* have suggested you may be able to help with this study. Before you decide if you would like to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and if you wish to discuss it with somebody. You do not need to decide whether or not to take part immediately.

Please ask me any questions. You can phone and speak to me on the following number XXXX XXX XXXX. If I am not in, then you can leave a message and I will return your call.

What is the research about?

This research has three aims.

1. How long does it take for people to receive help for their psychosis?
2. By what route do people get support and where from?
3. How do people get on in the three years following an episode of psychosis?

Why have I been asked to take part?

We are asking all people who are in touch with EI SERVICE to take part in this study.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you decide to take part we would like you to sign a consent form. The consent form is a way of making sure you know what you have agreed to. If you decide to take part you are still free to withdraw at any time and you do not have to give a reason.

The support and help you receive from EI SERVICE will not be affected if you decide at anytime you do not want to take part.

What will happen next?

If you decide to take part, I will be in touch and we will arrange a convenient time and place to meet.

What do I have to do?

At our first meeting I will answer any questions or concerns you may have. Initially we will need to meet on three to four occasions. During these meetings I will ask you about your experience of psychosis, and your experience of services. We are also interested in asking you about important life experiences prior to your first contact with EI SERVICE.

I will also ask you if part of the meeting(s) can be recorded on a tape recorder. The purpose of the recording part of our conversation is because two of the measures we would like to use rely on your exact words that you use during the interview. I will transcribe what you have said, take out any information that would identify you personally (e.g. names of people), and destroy the tape.

I will show you the recording equipment and demonstrate how it works before starting recording. You are free to stop the recording at any time during the interview(s). Importantly there are no right or wrong answers. It is your perspective that I would like to hear.

Thereafter we would like to see you again in 1, 2 and 3 years time.

What is the down side of taking part?

It is possible that our meeting(s) may cover topics that are difficult or distressing for you to talk about. If you feel distressed we can stop the interview. You can also take a break at any time.

Will my taking part in this study be kept confidential?

If you decide to take part in the study, your GP and EI SERVICE will know that you are taking part. The interviews and questionnaires will be confidential. If there is anything in the interviews and questionnaires that you feel would be useful to share with your key worker then we can arrange this for you.

What are the possible benefits of taking part?

The information we learn from this study will help us plan future research and develop new psychological therapies to help alleviate the distress of experiencing psychosis.

What will happen to the results of the research study?

I will provide you with a summary of the results of the study. The final results and conclusions of the study will lead to several publications in scientific journals. Your identification will not be included in any publication.

Who is organising and funding the research

The research is being organised by the Universities of Glasgow and Edinburgh, in collaboration with Lothian NHS and Greater Glasgow NHS.

Who has reviewed the study?

The study has been reviewed by Greater Glasgow and Lothian Research Ethics Committees. The research has also been given managerial approval by the local Research and Development Departments in Lothian and Glasgow.

Thank you very much for reading this and for any further involvement with this study.

Appendix 9: Clinical Study Consent Form

Centre No:

Identification Number for this study:

CONSENT FORM

Title of Project: Glasgow - Edinburgh First Episode Study

Name of Researcher:

Please initial box

I confirm that I have read and understand the Participant Information sheet dated 22nd October 2004 (version 1) for the above study and have had the opportunity to ask questions. ☐

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason, without my medical care or legal rights being affected. ☐

I understand that interviews will be tape recorded solely for the purposes of the research study as described in the Participant Information Sheet (29th July 2004, Version 1). ☐

I understand that the information obtained from all measures that I complete as part of the research study will be annonymised. ☐

I understand that the clinical team will be appropriately informed of any information obtained, in order to provide me with a care package that is more responsive to my needs. ☐

After the interviews have been transcribed, and all names, places and identifiers have been removed I understand that the researcher may publish direct quotations. ☐

I understand that my GP will be informed that I have consented to take part in the study. ☐

I agree to take part in the above study. ☐

_____ _____ _____

Name of participant Date Signature

_____ _____ _____

Name of person taking consent Date Signature
(if different from researcher)

_____ _____ _____

Researcher Date Signature

1 for participant, 1 for researcher, 1 to be kept with medical notes.

Appendix 10: Mode of Onset Demarcation (from Jablensky et al, 1992 – WHO study, *Psych. Med, Monograph 22*)

"The onset of the disorder was defined as the beginning of the first psychotic episode, manifested in the emergence of the following signs and symptoms"

A. At least on overt psychotic symptom or sign:
1. Hallucinations or pseudohallucinations (in any modality)
2. Delusions
3. Thought and speech disorder (incoherence, irrelevance, blocking, neologisms, incomprehensibility of speech)
4. Qualitative psychomotor disorder (negativism, mutism or stupor; catatonic excitement; constrained attitudes and postures)
5. Bizarre or grossly inappropriate behaviour; **or**

B. The simultaneous presence of two or more "suggestive" signs or symptoms
1. Marked reduction of interests, initiative, and drive leading to a deterioration of performance
2. Marked social withdrawal
3. Severe excitement, purposeless destructiveness or aggression (frequent episodes or continuous)
4. Persistent, pervasive fear or anxiety
5. Gross self-neglect

Any of the latter would be regarded as a prodromal phenomenon, if it appeared in isolation prior to the outbreak of overt psychotic symptoms.

Acute: A florid psychotic state developing within days (up to a week); mild ('suggestive', non-psychotic) prodromal signs or symptoms may have been absent (sudden onset) or present (precipitous onset)

Subacute: Symptoms appearing and developing into a clear-cut psychotic state over a period of up to one month

Gradual: Slow, incremental development of psychotic symptoms over a period exceeding one month; prodromal signs or symptoms (if any) cannot be clearly distinguished from overt psychotic symptoms as regards their timing because of a gradual transition from one to the other.

Insidious: No clear demarcation can be made between premorbid personality and mental illness, and onset as such cannot be rated; included are also cases in which no overt psychotic symptoms were present at time of examination but the investigator had a strong suspicion of an underlying psychotic illness.

Appendix 11: AAI Training Institute Attendance Certificate

GÖTEBORGS UNIVERSITET
Psykologiska institutionen

GÖTEBORG UNIVERSITY *Department of Psychology*

Anders Broberg

PARTICIPATION IN 'THE 5th NORDIC AAI-INSTITUTE'
Göteborg, 10/1 – 20/1 2005

This is to ceritify that ***Angus MacBeth*** has participated in a 2 week training institute to qualify as coder of Adult Attachment Interview transcripts. The institute was given at the department of Psychology, Göteborg University, Sweden from Monday January 10th 9 am to Friday January 20 4 pm.

Each day included lectures and group discussions of transcripts between 08.30 and 15.30. Participants were then assigned a case to work on during the evening, as well as over the weekend. Participants spent an average of 6 – 8 hours each afternoon/evenening/night on the assignment. In total therefore, the course amounted to around 60 hours of work in class and another 60 – 80 hours of individual homework. During the course, participants have also had the opportunity to present and discuss their own research work, and get feedback from us.

After having completed the AAI institute, participants are now ready to take on the reliability test of 30 cases, of which 24 have to be correctly classified, in order to become certified AAI coders. The reliability test is given by professor Mary Main and doctor Erik Hesse at the University of California at Berkeley.

Göteborg 2005-01-20

Anders Broberg, Ph.D
certified AAI trainer

Tord Ivarsson, MD
certified AAI trainer

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031 – 773 1703
031 – 773 46 28 (FAX)

Datorpost:
Anders.Broberg@psy.gu.se

Appendix 12: AAI Reliability letter of confirmation

December 29, 2006

Dear Angus,

Angus, you have remained an above average, i.e., really very good coder for DsEF now through all four reliability checks. This means that you are now ready to code your own sample, or that of others, for DsEF, relying on the good sense you have had from the beginning in determining overall category placement.

And we are sorry to say that despite your determinedly taking a fourth check, "U" remained elusive in your reading of the transcripts, so as much as you (and we) had hoped it would go otherwise, you are not certified on "U". There is something about reading a whole transcript which tells you what it is, and something about these short lapses which instead evade you, so that you either miss them, or over-code them. Right now, we don't have a fifth check available, but if and when we do, you will be among the first to know. Maybe by then too we will find some way to have a brief "U/non-U" training, either as a regular week-long institute or in a further set of practice materials. You are NOT alone in having difficulty with "U" by any means. What you should do about this is (a) code your own or others' cases for DsEF and (b) get a second coder to read through the case to code it just for "U" (which of course takes much less time).

We opened your package with hope and trepidation for Mary's fellow Scot, and at least half our hopes were answered, in that you can now say that you have been in Group I for every one of four reliability checks you have taken. But we do know our larger hope regarding full certification has not come to pass yet, and we are very sorry about this.

Anyone who codes with such care and integrity; produces such elegant case markings and summary sheets; and pursues their studies so long, is extraordinary, and we hope to meet with you in person whenever we are able.

With all good wishes, and with admiration for your work,

Mary Main

Erik Hesse

Appendix 13: Reflective Functioning Training Course Attendance Certificate

THE ANNA FREUD CENTRE

Dedicated to the Well-Being of Children

21 MARESFIELD GARDENS, LONDON NW3 5SD
UNITED KINGDOM

UNIVERSITY COLLEGE LONDON

Psychoanalysis Unit

SUB-DEPARTMENT OF CLINICAL HEALTH PSYCHOLOGY
GOWER STREET, LONDON WC1E 6BT
UNITED KINGDOM

This is to certify that

Angus Macbeth

attended the Reflective Functioning Core Training Course held at The Anna Freud Centre
from Monday 8th to 10th December 2005

Teaching hours: 21

Dr. Mary Target
Professional Director at The Anna Freud Centre
Reader of Psychoanalysis at University College London

Dr. Fulvia Ronchi
Reflective Functioning Course Organiser and
Trainer at The Anna Freud Centre