

Core Beliefs and Adjustment
in Adolescent and Adult Onset Psychosis

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Declaration

“I certify that this is a true and accurate account of the work carried out. This thesis has been composed by myself and the work herein is my own”

Sean David Nolan

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Abstract

Introduction: Historically, psychosis, or schizophrenia, has been regarded as a biologically explained illness of an enduring deteriorating course. The absence of conclusive evidence regarding its biological nature, however, has led to the proposals of psychological models of psychosis, most recently, psychosis as a disorder of blocked adolescent development (Harrop & Trower, 2001). It was hypothesised that the roles of adult versus adolescent onset; depressive and anxious core beliefs; current emotional dysfunction; and traumatic symptomatology, would be predictive of beliefs about illness and recovery style in psychosis.

Method: A total of 26 adolescents with psychosis and 17 individuals whose first episode of psychosis was after the age of 25 completed the questionnaires used to test the research hypotheses. A single case study illustrates both the theory of psychosis as a disorder of adolescent development, and the proposed, quantitatively tested model of the role of core beliefs in illness beliefs and recovery style.

Results: Independent *t*-tests indicated there were no significant differences between adult and adolescent onset psychosis regarding each of these factors. Multiple regressions analyses indicated that current anxiety is the only significant predictor of beliefs about illness. Excluding the contribution of current anxiety, a further model with anxious and depressive core beliefs as predictors of illness beliefs approached significance. None of the proposed factors were correlated with or, therefore, predictive of recovery style.

Discussion: Findings require cautious interpretation given limited sample size and difficulties recruiting to the adult onset group. Although the quantitative findings do not indicate differences between groups, the case study illustrates the complexity of adolescent psychosis and demonstrates the utility of a developmental psychopathological framework in studying these phenomena.

Conclusion: Further research of the role of core beliefs in adjustment to psychosis is warranted. It might be appropriate to review the concepts of recovery and illness beliefs, perhaps using qualitative research methodologies, to broaden the understanding of individuals' experiences of psychosis and thus promote recovery.

Chapter 1 – Introduction to literature review

For many, be they clinicians, researchers, service users or their relatives, psychosis remains a biologically explained illness, characterised by positive symptoms of delusions and hallucinations and negative symptoms of flattened affect and decreased functioning.

The aim of this thesis is to focus on a developmentally-based formulation for psychosis, examining how individuals' views of themselves and the world affect their views of the experience of psychosis and recovery style. In relation to this, a central aim of this thesis is to determine whether there are differences between adolescent and adult onset of psychosis, in terms of precipitating factors for the illness, and whether these may be two separate entities caught under the same umbrella.

Firstly, a brief historical review of the literature sets the scene for some of the current debates around schizophrenia and psychosis, including moving beyond the problematic, traditional medical model of disease to other psychological models.

Focusing on a developmental formulation of psychosis, the notion that anxious and depressive beliefs have a central, predisposing role in psychosis will be discussed. Such core beliefs may shape beliefs about the experience of psychosis and are likely factors in determining adjustment to, and recovery, from psychosis.

Similarly, different pathways to emotional dysfunction in psychosis will be discussed. Emotional distress has been implicated in the development, maintenance and adjustment to psychosis, with 75% of individuals with psychosis reporting significant anxiety and 80% reporting depression (Freeman et al., 2001).

Furthermore, given the estimate of 43% of individuals with psychosis reporting PTSD (e.g. Meuser et al., 1998), and the significant overlap between symptoms of PTSD and psychosis (e.g. Morrison et al., 2003), a review of the different potential relationships between the experience of trauma and psychosis is warranted.

Finally, of the 1 in 100 people who experience psychosis at some point in their lifetime (Jablensky, 1997), 50-80% do so during late adolescence or early adulthood (Sartorius et al., 1986). Whilst some literature has suggested no differences between

adolescent and adult onset of psychosis (e.g. Basso et al., 1997), other research has (e.g. Menezes & Milovan, 2000). Most recently, it has been suggested that, in some cases, psychosis may be a consequence of disordered adolescent development, (Harrop & Trower, 2003), and literature on differences and similarities between adult and adolescent psychosis will be reviewed.

In summary, this study seeks to look at psychosis within a developmental formulation framework, and to examine what factors are important in determining beliefs about illness and recovery style. Its second central aim is to examine differences between adolescent and adult-onset psychosis.

1.1 – The (mis)conception of schizophrenia

In 1896, Emil Kraepelin outlined the concept of dementia praecox, later renamed schizophrenia by Eugene Bleuler. After its existence for the past 100 years, one might expect that this construct has stood the test of time and its original description remained unchanged, in much the same way that a Victorian engineer's understanding of the workings of a steam engine would still hold today. Alternatively, and perhaps more in line with the ever-changing nature of knowledge, one might think that the years have allowed, as the history of psychiatry might suggest, "gradual unravelling of scientific truths about naturally occurring kinds of mental disorder" (Bentall, 1990, p. xv) and that consequently, after decades of research, the concept of schizophrenia is better understood than ever before.

Neither position is an accurate reflection of the past or present of the schizophrenia concept. Boyle (1990) criticises Kraepelin's original thesis for failing to provide sufficient evidence to support his original syndrome of dementia praecox, and for its unsound proposition that all cases of dementia praecox had a similar onset, course and outcome. Kraepelin himself later abandoned the idea of similar outcome, perhaps taking on board the views of his contemporary Bleuler, who was of the opinion that outcome was not always negative, which led to the change in nomenclature. However in changing what were essentially the defining criteria of schizophrenia, Boyle (1990) points out that Kraepelin failed to acknowledge the implications that this had for the syndrome – altering the original defining criteria raises questions as to whether the same syndrome can be maintained as a valid and reliable construct. Moreover, the later extrapolations and reconceptualisations of schizophrenia, for example by Schneider (1959) with his emphasis on first rank positive symptoms over other difficulties, may be problematic given the questionable foundations on which they are based.

In order to retain the concept of schizophrenia, Bentall (1990) proposes that it would need to be shown to be a usefully reliable and valid scientific concept, "one psychiatrist's schizophrenic must be another psychiatrist's schizophrenic" (p.25). However, as he discusses, the reliability of the concept is very much open to question, as it is not uncommon for different psychiatrists to diagnose the same person with different disorders. Bleuler regarded the 'loosening of associations' –

disordered thinking or discourse – as the central feature of schizophrenia, whereas Schneider held that only a proportion of individuals had such difficulties, and that delusions and hallucinations were the most important symptoms diagnostically. It has been argued that this confusion persists, as it is possible for two or three individuals to have completely different symptoms and yet the same diagnosis of schizophrenia (Bentall, Jackson & Pilgrim, 1988).

As regards construct validity, there is evidence to suggest that there is no clear division between affective and schizophrenic disorders (e.g. Brockington and Wainright, 1980; Bentall, 2003). With regard to predictive validity, an individual having one symptom of a disorder should have a high probability of experiencing other symptoms of the same disorder. However, as research cited above has shown, in schizophrenia this is often not the case. Furthermore, diagnosis is commonly regarded as directing treatment and thus predicting outcome – however outcome is variable in those given a diagnosis of schizophrenia, with a third recovering, a third experiencing repeated episodes of psychosis and a third deteriorating into chronic states (Ciompi, 1981).

With regard to aetiology, a large number of potential causal agents have been implicated in schizophrenia, including genetic endowment, abnormalities of brain structure or chemistry, diet, season of birth, hypothetical viral agents, social stress, life events or family structure (Bentall, 1990). Yet conclusive proof of the role of one or a combination of these variables in the aetiology of schizophrenia remains elusive. Bentall posits that this should not be surprising, “given that schizophrenia appears to be a disorder with no particular symptoms, no particular course, no particular outcome and which responds to no particular treatment” (1990, p. 33).

1.2 – Reconstructions of schizophrenia

Although it has been argued that schizophrenia is not a meaningful scientific concept, critics of the concept plainly acknowledge that people who report having experiences which are regarded as symptoms of schizophrenia are clearly suffering from a “profound loss of well-being” (Claridge, 1990, p. 179) and may thus require the care of professional services. This move from an aetiological to a functional descriptive framework of schizophrenia has ramifications for the meaning of care: treatment or intervention which aims to manage or alleviate individual’s symptoms is

necessarily based on the conceptions of the causes, course and consequences of the disorder.

As described above, a number of researchers have highlighted the flaws of the traditional model of schizophrenia. This is not a new suggestion. The anti-psychiatry movement of the 1960s, led by R.D. Laing, proposed that schizophrenia was the result, not of neurological dysfunction which required pharmacotherapy, but of the social and psychological circumstances of victimised or labelled individuals (Laing, 1960). Although regarded as out of date by some researchers (e.g. Harrop & Trower, 2003), vestiges of these theories remain popular with some clients due to their empowering qualities. Furthermore, they invite and encourage debate about the breadth of factors beyond the biological that may be involved in the development and maintenance of the difficulties that face people with a diagnosis of schizophrenia.

It has been suggested that schizophrenia is not a unitary disease entity and that it may, in fact, represent a heterogeneous set of pathological processes that manifest themselves in broadly similar syndromes, notwithstanding the variation of symptoms within schizophrenia cited above (e.g. Basso et al., 1997; Murray et al., 1992; Tsuang & Farone, 1995). Thus schizophrenia may be best characterised as an umbrella term for a spectrum of disorders, with overlapping groups of symptoms but potentially different aetiologies. This variation may well have implications for course, outcome and most effective treatment of difficulties. As is discussed below, age at onset of difficulties has been identified as a potential distinguishing characteristic between different subtypes of this hypothesised spectrum disorder.

1.2.1 – Problems with terminology

Given the conceptual problems of schizophrenia (or schizophrenias), the continued use of a term with negative connotations and the implication that individuals have some as yet unidentified brain disease with an enduring deteriorating course, many researchers and clinicians (e.g. Harrop & Trower, 2003) use the less stigmatising term psychosis instead, which also includes those difficulties which would be diagnosed as bipolar disorder, schizo-affective disorder and related disorders.

In line with Mueser and colleagues' (1998) approach, and due to limited research in this area, the present thesis seeks to study as broad a sample as possible while imposing minimal diagnostic criteria for inclusion in the study. Thus, for the

purposes of this thesis the term psychosis includes diagnostic categories such as schizophrenia, schizoaffective disorder, bi-polar affective disorder, affective psychosis and non-affective psychosis. Participants in this study will all have experienced psychotic symptomatology, although their diagnoses may be different. That there is a great degree of diagnostic instability with adolescents - Menezes and Milovan's (2000) review indicates that there are high rates of change (40-50%) of initial diagnosis – provides further support for the use of broad inclusion criteria to maximise the number of participants.

1.2.2 – Current models of psychosis

A classic theory of biologically oriented psychosis research is that a reduced temporal lobe size is implicated in individuals' psychotic symptomatology (e.g. Johnstone et al., 1976). However, Harrop and colleagues (1996) argue that many of the findings which result from this approach to studying psychosis are flawed methodologically, and they point out, furthermore, that attempts to replicate such findings have failed (Jernigan et al., 1982). In any case, the duration of untreated psychosis is on average 12 months (Beiser et al., 1993), which leaves open the question of whether physical changes were present before symptom onset or whether they resulted from associated psychological difficulties. Prospective studies which have endeavoured to examine this have not been supportive of previous research, with findings contrary to the neurodevelopmental model that psychosis results from lesions with their origins in the early years of life (Phillips et al., 2002).

Biological theorists of schizophrenia propose that psychological symptoms result from changes in the central nervous system. However, this presents an explanatory gap – such an inference does not indicate how biology effects cognitive organisation. An alternative proposition (Bentall, 1990) is that research should focus on symptoms of functional impairment and distress, namely: hallucinations, delusions, disordered discourse and negative symptoms, before trying to link cognitive (dis)organisation to potentially causal biological or environmental factors.

Current conventional wisdom tends toward an interactionist explanation for psychosis, thus holding on to the notion that psychosis is at least in part biologically determined. An example of this is Neuchterlein's (1987) stress-vulnerability model where stress is seen to precipitate psychotic episodes in individuals who have a

predisposing biological vulnerability. From a developmental perspective, which will be discussed in more detail below, predisposing vulnerabilities need not be solely biological in nature – aversive early experiences, such as attachment problems or traumata, may impact on individuals abilities to handle stress, through the development of dysfunctional assumptions about self and others. Whether predisposers are biological, environmental or a combination thereof, this model allows for individual differences, whereby either a large loading on the predisposing factor combined with a small amount of stress may result in symptoms, or the role of the predisposing factor might be minimal but the level of stress overwhelming. An exemplar of the latter would be the journalist Brain Keenan (Keenan, 1993), who, after being held hostage by terrorists for an extended period of time in horrendous circumstances, began to experience auditory hallucinations. The role of stress or trauma in psychosis warrants further discussion and will be explored at greater depth in section 1.6.

1.2.3 – Alternative models of psychosis

Recently, alternative explanations of the development of psychosis have been put forward (Harrop, Trower & Mitchell, 1996; Harrop & Trower, 2003). These researchers propose that all of the neurobiological differences in psychosis – for example, ventricular enlargement and reduced hippocampal volume (Johnstone et al., 1976) – may result from the symptoms of psychosis. Rather than offering a basic reversal of the biomedical theories, Harrop and Trower (2003) eschew causal mechanistic explanations and posit that the biological and psychological factors work in a reciprocal and iterative fashion, suggesting that both biological and psychological differences may be thought of as emergent properties of this dynamic interchange.

This allows for the re-interpretation of some of the cognitive information processing models of psychosis which have often been linked somewhat erroneously to unknown biological factors. Helmsley's (1987) deficit – that people with psychosis are less able to interpret perceptual data using stored memories and thus have a heightened awareness of irrelevant stimuli which leads to bizarre perceptual experiences such as hallucinations – has been interpreted as anomalies at a neural level leading to cognitive disorganisation, ultimately resulting in psychotic symptomatology (Gray, 1993).

Using an active mix of social factors and neural level dysfunction to account for Helmsley's deficit, or Frith's (1992) notion of "meta-(mis)representing" – that people with psychosis have difficulties with attributing ownership to thoughts or intentions – is congruent with the reciprocal and iterative loop of psychosis.

Social learning experiences impact on nascent emotional and cognitive structures, which are necessarily rooted neurally. These emerging structures, in turn, influence the future socialisation experiences of individuals, who are active agents in their social environment. The reciprocal and iterative cycle continues as further experiences impact on developing intrapsychic and neural structures. A model accounting for such transactional processes, between experience and meaning making throughout an individual's life, is further described in the following section.

1.3 – A developmental psychopathological model of psychosis

The developmental psychopathology paradigm seeks to investigate "the mysterious unfolding of disturbance through time, the integration of person and environmental characteristics in the generation of psychological disturbance through ontogenetic development" (Fonagy, 2003, p. 215). In doing so, developmental psychopathology draws on theories of cognitive psychology and social learning, and also retains a psychodynamic perspective, with particular reference to attachment and individuation experiences.

The model that this paradigm suggests is particularly appropriate for the conceptualisation of psychosis for a number of reasons. Firstly, between fifty to eighty per cent of people who develop psychosis do so in late adolescence or early adulthood (Sartorius et al., 1986).

Secondly, developmental psychopathology investigates the dynamic changes occurring at and between both the personal level (intrapsychically and ontogenetically) and the objects in an individual's environment. With this latter point in mind, there is a particular emphasis on socialisation experiences, particularly intrafamilial socialisation and early attachment experiences, and also peer attachments. This is similar to Harrop and Trower's (2003) reciprocal and iterative loop explanation of the development of psychosis, with its focus on the consequences of the continual interchange between the biological and psychological.

Thirdly, the emotional aspects of psychotic experience, which some regard as central to psychosis and will be discussed further in the following section, can be usefully integrated into a developmental psychopathology conceptualisation. Birchwood (2003) proposes that emotional disorder in first-episode psychosis involves emotional disturbance triggered by an emerging psychosis, childhood trauma or both. This in turn leads to or activates dysfunctional beliefs that hamper adaptation to psychosis and its symptoms, and precipitates adolescent emotional disorders that continue into adulthood. Thus a developmental psychopathology paradigm is able to integrate within a transactional framework the various personal and environmental factors that are key to understanding psychosis.

The following sections of this literature review, regarding emotional dysfunction, trauma and psychosis, and adolescent development will make reference to this paradigm which provides a context for the key research questions of this thesis: namely, exploring the relationship between people's beliefs about themselves and others, their experience of psychosis and their adjustment to their experience.

1.4 – Emotional dysfunction in psychosis

A model that accounts for affect is particularly useful given the prominent place of emotional functioning in individuals' experience of psychosis. The nature of psychotic symptomatology tends to be either emotionally-laden or there is a complete absence of affect – it is rare for emotionally neutral psychotic experiences to be reported as problematic. Harrop and colleagues (1996, p. 650) state that “...any account of hallucinations and delusions that does not account for the very emotional nature of most of them is sadly deficient”. That 80% of people with psychosis have moderate levels of depression and 75% are anxious (Freeman et al., 2001) emphasises the importance of accounting for emotional dysfunction in psychosis.

The cognitive information processing models of psychosis, briefly described above, not only propose ideas regarding formation and maintenance of (predominantly positive) symptoms, namely, that perceptual and reasoning biases are involved in processing both self and social information. Further to this, Garety and colleagues (2001) propose that affective disturbance also has a significant role in independently

influencing this information processing, ultimately “[contributing] to the maintenance of the psychotic appraisal” (p. 192).

Despite its clear existence for people with psychosis, their families and those who work with them, emotional dysfunction – depression, social anxiety, or traumatic symptoms – has sat uneasily with the concept of schizophrenia. Although, along with disordered thinking, Bleuler originally regarded emotional disturbance as central to the concept, other later influential psychiatrists such as Schneider (1959) held that positive symptoms were key, and that any emotional difficulties were a result of a co-morbid mood disorder rather than part of schizophrenia. Persisting to this day is the seemingly paradoxical nature of emotional dysfunction in non-affective psychosis.

1.4.1 – Potential pathways of emotional disorder in psychosis

Birchwood (2003; Birchwood et al., 2004) describes three core but not mutually exclusive pathways of emotional dysfunction in psychosis, and a brief description of these follows.

The first is that emotional disorder is intrinsic to the psychosis diathesis, evidenced by the frequent presence of depression in the first episode prodrome, which then recedes with the positive symptomatology. Social anxiety and social avoidance, often present along with active psychotic symptomatology, may also be part and parcel of the positive symptoms of psychosis themselves.

Secondly, emotional dysfunction may be a psychological reaction to psychosis. It is not psychotic experiences per se that generate distress, rather it is people’s evaluation and the meaning they make of these experiences that determines their ability to cope and their consequent emotional functioning. Iqbal and colleagues (2000) found that with a sample of adults with psychosis, aged between 18 and 65, individuals’ appraisals of psychosis as a loss of social goals and status led to feelings of shame, and then subsequently to a sense of being trapped by mental illness, which resulted in post psychotic depression (PPD) and hopelessness. Jackson and Iqbal (2000) propose that the processes that underlie social anxiety and avoidance, namely feelings of social shame and fear of discovery by others, may well be the same as those that result in anxiety in psychosis.

Birchwood's third proposal is that emotional disorder arises from developmental anomalies and trauma. Congruent with a developmental psychopathology paradigm, social difficulties and emotional problems, in addition to low level psychotic experience stretching back to adolescence, are often found to precede first episode psychosis (Poulton et al., 2000). Rutter (2000) found that the continuity between the characteristics of adolescent and adult psychosis characteristics, including depression and suicide risk, were influenced by social and familial context. More positively, Rutter also found that there was considerable dis-continuity between adolescent and adult emotional functioning – disturbed developmental trajectories can be realigned as a result of positive life events in late adolescence.

These hypothesised pathways of emotional disorder in psychosis can be integrated in a developmental model. Core beliefs are shaped by the interplay of earlier socialisation experiences, the meaning made of them, and further experiences of the self in the world. Aversive earlier experiences, in the absence of sufficient more positive experiences, may lead to the development of maladaptive core beliefs. These beliefs then predispose individuals to emotional dysfunction. Whether an integral part of psychosis, a psychological reaction to it or a combination thereof, emotional dysfunction is hypothesised to be associated with the meaning made of the experience of psychosis, and presumably earlier adverse or traumatic experiences.

1.5 – Core beliefs and psychosis

Core beliefs about the self, world or future are likely predisposing factors for a person's susceptibility to emotional distress. Assumed to have developed as a result of earlier experiences, these beliefs are regarded by some as central to individuals' proneness to psychosis, their beliefs about their difficulties, and adaptation to them (Siddle & Haddock, 2004; Perris & Skagerland, 1994; Birchwood et al., 2004).

Escher and colleagues (2002) found that the core beliefs of people with psychosis affected emotional functioning. Adolescents' appraisals of the power and persistence of voices, as influenced by their beliefs, were found to be associated with distress.

Siris (1995) reports a lower prevalence of depression in those with multiple admissions for psychosis in contrast to first episode psychosis cases. To account for this difference, Jackson and Iqbal (2000) cite Teasdale's (1998) proposal that negative beliefs may be maintaining and modulating factors for depression, rather

than precipitants or predisposers. Birchwood and colleagues (2000) propose that those who have experienced repeated episodes of psychosis may have had longer to adapt to psychosis and the mechanisms that modulate the onset of post-psychotic depression than those experiencing their first episode of psychosis. However, previous research led Birchwood (Birchwood et al., 1993) to suggest the near opposite, that depression in chronic psychoses might result from the sense of hopelessness, the risk of relapse and the concomitant functional and social impairments, such as unemployment, engendered by repeated episodes. While some evidence (e.g. Siris, 1995) suggests that the prevalence of depression is lower in multiple episodic psychosis, at an overall incidence of 80% (Freeman et al., 2001) depressive symptomatology remains a difficulty for the majority of those who experience psychotic episodes. Thus, the roles of core beliefs in psychosis and, as explored in later sections, adjustment to the experience, warrant further investigation with regard to early and later episodes.

It has been proposed that dysfunctional assumptions, which are necessarily based on core beliefs, result from people's meaning-making of the experience of psychosis (Fowler et al., 1995). As described in the following section, people with psychosis have often experienced a number of stressful events throughout their life. The latent maladaptive beliefs, which may have developed from the meaning made of previous aversive experiences, may be activated by particular life events, such as psychosis.

One potential explanation of this process is Parker and colleagues' (1998) "lock and key" hypothesis, where adverse earlier experiences effect individuals' vulnerability to depression – a "lock" – which is unlocked when individuals are exposed to life events – or "keys" – that are similar to the original adversity. Parker's findings do not particularly support the specificity of locks and keys, that is earlier parental rejection is not closely tied to emotional disorder triggered by later interpersonal rejection. Rather, a number of keys could open up a number of locks, which means that emotional disorder, or indeed psychosis, may be triggered by any adverse life event in the context of earlier adverse experiences.

It has been proposed (e.g. Birchwood et al., 2004) that as the prodromal period is often marked by social isolation and interpersonal difficulty, this may lead to the development of maladaptive self and other beliefs which are then activated post onset of psychosis. As discussed later, degrees of social isolation and interpersonal

difficulties are part of normative adolescent development, thus it could be that the experience of psychosis impacts negatively on these forming views of self and others. One possible mechanism for the negative impact of psychosis on adolescent development might be the consequent lack of opportunity for the social learning experiences that would allow the development of more adaptive beliefs.

Fowler, Garrety and Kuipers (1995) propose that there are common themes running through the dysfunctional assumptions of people with psychosis. While acknowledging that there will be variation from person to person, these authors describe five themes, namely: that the self is **vulnerable to harm** or to **losing self-control**, or is **doomed to social isolation**. A further theme includes the belief in **inner defectiveness**, that they are to blame for their difficulties and are in some way inherently flawed. A final theme includes the belief in **unrelenting standards**, which is often associated with grandiose ideation. This manic defence (Lemma, 2003) may compensate for the repeated failures in meeting unachievable goals and protect against internal conflict by dissociation or actively keeping apart contradictory experiences of the self.

Challenging depressive core beliefs and dysfunctional assumptions is regarded as a useful intervention in promoting adjustment to and recovery from psychosis (e.g. Jackson & Iqbal, 2000). This lends support to the explanatory power of models which posit that premorbid, possibly dysfunctional, thinking patterns have a key role in people's adjustment to psychosis. The notion of psychosis as a key unlocking latent beliefs about self rooted in earlier adversity seems plausible given the high incidence of previous trauma amongst people with psychosis, as discussed in the following section. Fowler and colleagues' (1995) proposed dysfunctional assumptions account for both the isolation, alienation and powerlessness that people with psychosis often experience (May, 2004) and also the associated emotional distress. It is thus hypothesised that dysfunctional assumptions, and the core beliefs which underlie them, have an impact on adaptation, adjustment and recovery in psychosis.

Although acknowledged as being a common presenting problem in psychosis, anxious underlying beliefs in psychosis have seen comparatively little research. Wells and Matthews' (1994) Self Regulatory Executive Function (S-REF) model indicates that a range of metacognitive beliefs – essentially beliefs about thinking,

including: ruminative processing, activation of dysfunctional beliefs and self-regulation strategies that perpetuate maladaptive self-knowledge (Morrison & Wells, 2003) – are involved in individuals' vulnerability to and maintenance of psychological dysfunction. Negative metacognitive beliefs, such as “Not being able to control my thoughts is a sign of weakness”, “My worrying could make me go mad” and “It is bad to think certain thoughts” (Cartwright-Hatton & Wells, 1997), have been implicated as predisposing factors in auditory hallucinations (Morrison, Wells & Nothard, 2000).

The role of metacognitions in psychosis has tended to be explored from within an information processing paradigm, investigating the role of cognitive bias in auditory hallucinations (e.g. Baker & Morrison, 1998). However, Morrison and Wells (2003) demonstrated that metacognitive beliefs are more generally associated with psychological dysfunction. Their findings indicate that people with psychosis who experience delusional beliefs, but not auditory hallucinations, have more negative metacognitive beliefs than the general population. The examples of metacognitions above have much in common with Fowler and colleagues' (1995) dysfunctional assumption of inner defectiveness. This suggests that worried or anxious core beliefs may have a role to play in individuals' adjustment to psychosis. The present research aims to investigate the role of such beliefs alongside depressive core beliefs in the appraisals of and recovery from psychosis.

1.6 – The relationships of trauma and psychosis

Birchwood (2003) cites evidence that a history of trauma, including sexual abuse and attachment difficulties, may account for the emotional difficulties found in first episode psychosis, and may also increase an individual's susceptibility to PPD and other emotional disorders. Recent reviews of the literature on trauma and psychosis (e.g. Morrison et al., 2003) indicate that the topic merits further discussion, as detailed below.

1.6.1 – Can trauma cause psychosis?

Investigating the developmental and life histories of people with psychosis indicates that many have endured specific or cumulative experiences of trauma, such as sexual or physical abuse, before the onset of psychosis (Honing, 1988; Stampfer, 1990). That there is often much in common between the nature of earlier trauma (for

example, being abused by a male family friend who always wore beige pullovers) and the form and content of psychotic symptomatology (delusional paranoia or hallucinatory experiences about all men who wear beige pullovers) suggests there may be a causal relationship between the two. Alternatively, Morrison and colleagues (2003) posit, because symptoms of psychosis are always connected to developmental histories, it would be expected that if this history included traumata they would be incorporated into a person's symptomatology.

Many of the studies in this area are flawed methodologically, with an over-reliance on case notes or self report data, or non-randomised sampling – however, given the nature and topic of enquiry, such methodological difficulties indicate that, rather than dismissing the findings, caution is required in interpreting them. The extent to which earlier trauma can cause psychosis remains an open question and worthy of further research – notwithstanding methodological problems, it would seem that for some people traumatic life experiences are likely to play a role in the development of psychosis (Morrison et al., 2003), which is congruent with the stress vulnerability models of Neuchterlein and Dawson (e.g. 1984).

1.6.2 – Is psychosis a trauma which leads to PTSD?

The lifetime prevalence of PTSD in people with psychosis has been found to be significantly higher than that of the general population. Of their sample of 275 patients with severe mental illness – predominantly schizophrenia, schizo-affective disorder or bipolar disorder but also including major depression and personality disorders – Mueser and colleagues (1998) found that 43% of the cohort met diagnostic criteria for PTSD compared to the 8 or 9% of the general population. Switching the direction of causation offers the hypothesis that the experience of psychosis and its immediate sequelae, such as compulsory hospital admission or police intervention, leads to PTSD.

Frame and Morrison (2001) found that the greatest amount of PTSD variance was accounted for by psychotic experiences themselves (52%) with only a small amount (6%) being accounted for by experiences in hospital. These researchers found that compulsory admission under the Mental Health Act was unrelated to PTSD. This is at odds with McGorry and colleagues (1991) suggestion that hospital experiences as a result of psychosis may contribute directly to PTSD. As with most trauma

research, Morrison and colleagues (2003) cite methodological flaws – small sample size, different types of trauma – in the psychosis-causes-PTSD literature. Thus, definitive answers as to the conceptual mechanisms remain elusive – however, it would seem reasonable to conclude that, as a response to psychosis, or its treatment, some people will develop PTSD.

1.6.3 – Psychosis and trauma: the third way?

Morrison and colleagues (2003) pose the question of whether psychosis and PTSD might be related types of reactions, possibly that they are both parts of a spectrum of responses to trauma.

Symptomatically, there are similarities between the two. The hallucinations and delusions of psychosis have much in common with the intrusive thoughts, images, and flashback experiences characteristic of PTSD (Ehlers & Clark, 2000). Furthermore, the negative symptoms of psychosis overlap with those of PTSD, including: blunted affect, emotional numbing, feelings of derealisation, and detachment (McGorry et al., 1991).

Morrison and colleagues (2003) suggest that whether a person receives a diagnosis of PTSD or psychosis may depend on whether meaningful idiosyncratic links can be made between life history and presenting difficulties, and also whether a person holds positive beliefs about psychotic experiences (for example, hearing voices may be comforting). Returning to the example above, if a person's reports of paranoid thoughts about being threatened by beige pullover wearing men are not connected to past abuse experiences then it is likely that these would be regarded as characteristic symptoms of psychosis. If these experiences are regarded as intrusive thoughts and are linked to past traumatic events featuring men of said description, then the diagnosis might be that of PTSD.

If this “third way” does account for some people's experience then it is likely that there would be a more complex interaction of the various cognitive, developmental and possibly biological mediating factors involved, the detail of which requires further research. Alternatively, Morrison and colleagues (2003) state, the development of psychosis post-trauma could be more idiosyncratic. “Culturally unacceptable appraisals for intrusions” (p. 346) – in diagnostic terms, delusional beliefs, probably related to traumatic life events – and an individual's responses to

these appraisals could persist and develop over time: to revisit the above example for a final time, paranoia and suspiciousness of others may develop as a result of earlier experiences of betrayed trust; verbal intrusions of men wearing a certain colour of pullover, in combination with dissociation and de-realisation, may come to be experienced as voices.

In summary, it is likely, as Morrison and colleagues (2003) themselves conclude, that all of the above relationships between trauma and psychosis are possible. For some people, the experience of trauma may lead to psychosis; for others, psychosis, and its treatment, may be a trauma resulting in PTSD. Both psychosis and PTSD may be responses to trauma, the development of which may be mediated by the interpretations of intrusions, which are themselves influenced by earlier experiences and associated core beliefs.

Investigating each of these pathways in detail is beyond the scope of the present study. However, the incidence of traumatic symptomatology, as a consequence of psychosis or other traumata, is a focus of the present research. As is discussed below in section 1.8.3, it is possible that, given their developmental stage, younger people have fewer mental models to make sense of the world than adults. This might especially impact on their ability to make sense of and process traumatic experiences, thus it is predicted that there will be a higher incidence of traumatic symptomatology in adolescent onset psychosis than adult onset psychosis.

1.7 – Differences between adolescent and adult-onset psychosis

A central question of this thesis is concerned with whether psychosis which develops in adolescence is different from that which develops at other points in people's lives.

Castle and colleagues (1994) proposed that age at initial onset of symptoms could be used to distinguish between different subgroups within schizophrenia. Reviewing the literature, Basso and colleagues (1997) state that, compared to onset in early adulthood, individuals with adolescent onset schizophrenia have a poorer premorbid status, a bleaker prognosis and greater severity of negative symptoms. Their own study found that those with adolescent onset schizophrenia, defined as occurring before 21 years of age, had greater cognitive deficits, particularly with regard to

memory and executive functioning difficulties, than adult onset schizophrenia, operationalised as post 25 years of age.

From a neurodevelopmental disease perspective, they attributed these cognitive differences to cerebral structural abnormalities and cytoarchitectural anomalies that were the product of a disease process that began early in life. Given that it is equally possible that these physical CNS changes were the result of psychological changes, as has been proposed by other researchers, this biologically determined attribution may be somewhat erroneous. Biology aside, their conclusion is useful in that it supports the notion that adolescent and adult onset schizophrenia are different (aetiologically) but that they present as similar syndromes on the spectrum of schizophrenias and psychoses.

Conversely, Menezes and Milovan (2000) found an apparent continuity between adolescent and adult onset psychosis. Their review of biopsychosocial variables thought to be predictive of diagnosis and outcome in first episode psychosis indicated that there is “no definitive predictor of risk factors that predispose patients to an earlier-onset psychosis [defined as before 19 years of age]” (p.715), and that Global Assessment of Functioning (GAF) scores were the best predictor for diagnosis and outcome in both groups.

Thus, there is mixed evidence as to the role of age of onset in understanding some people’s psychosis. However, there were a number of variables which were not included in Menezes and Milovan’s review, including the neurodevelopmental and cognitive factors which have been implicated, mentioned above. There is also an absence of psychodevelopmental factors and the role they may play in the earlier or later onset of psychosis, and this will now be discussed.

1.7.1 – Psychosis as a disorder of adolescent development

That psychosis predominantly develops during adolescence, a period of development which is beset with major, at times difficult, psychological maturational changes, has led some researchers to suggest that psychosis may be a disorder of adolescent development (Harrop & Trower, 2001; 2003).

There are a number of similarities between normative adolescent development and the most commonly described prodromal features in first-episode psychosis. Yung and Jackson (1999) describe nine such features, including: reduced concentration and

motivation, depressed mood, sleep disturbance, anxiety, social withdrawal, irritability, suspiciousness and deterioration in role functioning. Intuitively, a number of these features appear to describe the commonly regarded “storm and stress” of adolescence. Furthermore, McGorry and colleagues (1995) found that prodromal characteristics were in fact incredibly common amongst a large population sample of 657 Australian 16 year olds. With regard to those experiences which bear similarities with positive psychotic symptomatology, just over half reported magical ideation, and slightly less reported unusual perceptual experiences. Yung and Jackson’s (1999) prodromal features were also represented, with high levels of lack of initiative (40%), social withdrawal (18%) and blunt, flat or inappropriate affect (22%: McGorry et al., 1995).

However, this does not necessarily indicate that large numbers of young people are either prodromal or are likely to develop psychosis. Rather, the literature would suggest that psychosis and adolescent development have much in common. These common characteristics may indicate that such “prodromal features” are in fact part of a continuum of normal development. However, when young people are unable to move on from these stages of adolescent development, when development is disrupted and developmental trajectories are consequently compromised, individuals may find themselves further along the continuum from normality and vulnerable to developing psychosis.

1.7.2 – Similarities between adolescent and psychotic phenomena

Harrop and Trower (2001, 2003) have illustrated a number of adolescent issues which are very similar to those experienced in psychosis and its prodrome, and a summary of this and their proposal that early psychosis may result from blocked adolescent development follows.

As mentioned above, conventional wisdom normally portrays adolescence as a stressful time. The literature would suggest that the experience of large amounts of **stress** is not, in fact, the adolescent norm, but rather, that for a number of adolescents, this developmental period can be particularly fraught. That said, adolescence has been described as generating more stress than either childhood or adulthood (Resnick et al., 1997), and Arnett (1999) identifies an increase in mood disruptions, risk behaviours and conflict with parents as the main features of

adolescent turmoil. The role of stress in psychosis and schizophrenia is regarded as a major factor in many mainstream theories, namely Neuchterlein and Dawson's (1984) vulnerability-stress model. Furthermore, stressful life events and trauma in the 3 weeks preceding psychosis, have been found to be experienced by 70% of people (Brown & Birley, 1968).

Conflict and **renegotiation**, often regarding the changing roles of parents and young people, are common, as adolescents move from subordinate to self ordinate beings, and parents relinquish control and protection of their offspring. As Harrop and Trower describe, there is great variability within the research literature as to the degree and role of familial conflict in psychosis, ranging from very problematic relationships to those where there are no family disputes. Citing their own unpublished data, Harrop and Trower found that young people with psychosis were often highly anxious about familial conflict, yet, in line with normative adolescent development, desired greater autonomy and power in relationships with relatives. Given the decreased independence that a diagnosis of mental illness inevitably brings, this makes arguing with the person, on whom one depends, more problematic for many young people with psychosis.

In tandem with conflict and renegotiating, and as a result of an increased ability to de-centre and mentalise-for-others, is young people's **de-idealisation** of parents and their consequent increase in personal **autonomy**. Harrop and Trower describe how the more experiences adolescents have of their parents, the more likely they are to become aware of any weaknesses and flaws. That a parent's previously unquestioned and unquestionable power is now open to debate allows for the adolescent's increased autonomy.

In line with their findings regarding low levels of conflict, Harrop and Trower found that young people with psychosis tended to idealise parental figures and remain fairly non-autonomous. These authors also cite that some young people with psychosis had, in line with their peers, developed less idealistic views of their parents and had increased their autonomy. However, they had failed to de-idealise their peers and were thus left in limbo, caught between the child-parent relationships of their younger years, which they had left behind and no longer desired, and the sought after but unobtained equality of peer relationships.

Necessarily tied up with these processes of adolescence is **depression and loss**. The greater personal freedom that de-idealisation and individuation affords young people is coupled with losses of security and attachment. As discussed in detail above, a number of theories posit that depression and psychosis are closely associated. Loss is a major issue for people with psychosis, and may include no longer continuing to live independently nor working and supporting oneself financially. It may involve a loss of social standing and peer or intimate relationships. For young people with psychosis, losses are frequently of imagined future and educational or occupational aspirations. Furthermore, Harrop and Trower suggest that depression may result from unmet needs for autonomy and the associated need to individuate from parents and form significant and supportive peer relationships.

Younger adolescents' **egocentricity and grandiosity** stems from difficulties in being unable to differentiate their own perspective from that of others' – self-referential thinking and the idea of an imaginary audience, being the centre of their and therefore everyone else's world, therefore automatically follows. Elkind (1967) proposes that this egocentric view of self and the world is tied to a young person's stage of cognitive development, and draws on Piagetian concepts of concrete and formal operations, and the developing abilities of adolescents to independently represent thoughts and abstract ideas. That egocentrism ebbs away by late adolescence is attributed to young people's learning about other people through repeated social interactions and experiences. Harrop and Trower propose that the egocentricity of young people with psychosis does not abate and is in fact augmented because of difficulties of autonomy and individuation. This then hampers the development of more sophisticated relationships with, and consequently understanding of, other people.

Thus, in summary, it would seem that many of the factors that are present in experiences of psychosis are also present in normative adolescent development. Erik Erikson's (1968) classic view of development places the central task of adolescence as being the creation of identity. As described above, in order to do this, adolescents are necessarily faced with the challenges of: secondary individuation, as they refashion their relationships with their parents; developing peer and romantic relationships; and of finishing education and choosing a career. If these tasks, and their psycho-developmental correlates as described by Harrop and Trower, are not or

are only partially completed, then adolescent development will be blocked. That difficulties arise from the lack of resolution of adolescent tasks, lends support to the theory that “late-adolescent-onset psychosis is a disorder of adolescent psychological development” (Harrop & Trower, 2001, p. 253)

Prior to Harrop and Trower’s proposals, Schwartz (1990) proposed a model of psychodynamic precipitants of adolescent onset psychosis. Kutcher and colleagues (1992) empirically tested out the four factors of this model that were implicated in the aetiology of psychosis – success and its opportunities; intimacy and its attempts; the intent to act autonomously; and, participation in psychodynamic psychotherapy. Their operationalisation of these factors is less than ideal, which they acknowledge “may not have fully captured the inner world of the conflicted adolescent” (p. 700). “Intimacy” equals romantic or sexual relationships, “autonomy” is defined as leaving home, getting a job or starting college, and “success” involves doing “extremely well” at school or athletically, or “excelling” at art or music.

These factors could be alternatively defined in terms of the changing nature of peer relationships in adolescence, such as utilising or providing peer support, or the renegotiation of roles within the family, for example cleaning one’s room may move to be under adolescent jurisdiction rather than that of parents. Nevertheless, with their definitions, Kutcher and colleagues findings do not support Schwartz’s theory as none of these factors was any more evident in the development of psychosis than in the development of depression. With the absence of a non-clinical control group it is difficult to know what to make of this comparison, especially given the high incidence of depression in psychosis, as discussed above. Furthermore, they argue that “there is no convincing evidence ...that normative developmental tasks lead to psychotic breakdown in adolescents” (Kutcher et al., 1992, p. 701) and, on the contrary, that young people with psychosis complete less of these tasks than their depressed peers.

This last conclusion is much more congruent with the notion that, rather than the completion of tasks of adolescence, it is the difficulty in completing or only partially completing these adolescent developmental tasks, perhaps in the context of stressful life events or earlier socioemotional developmental experiences, that is key to early-onset psychosis. Despite Kutcher’s rejections, Schwartz’s model seems to make intuitive clinical sense, and, as argued above, the previous operationalisation of it

may have overlooked some of the subtleties of adolescent developmental tasks. Harrop and Trower's proposals are also intriguing, but require further research. Aspects of their theory seem congruent with the previously described functional models of psychosis, accounting for the role of stress and possibly trauma, and also that of emotional dysfunction in the form of depression and loss. To further investigate this, a clinical case study investigating blocked adolescent development and psychosis is presented in chapter 4 and discussed in relation to the research hypotheses put forward in section 1.10.

1.7.3 – Predicted differences between adult and adolescent psychosis

Blocked or disrupted adolescent development in general is likely to impact on young people's developing emotional understanding of themselves and others. As described above this is a crucially important developmental period, when more sophisticated views of self and the world are forming. As it is proposed that core beliefs are major determinants of people's adjustment to and beliefs about psychosis, it may be that there are differences between adolescent and adult-onset psychosis with regard to these factors, as a consequence of forming versus crystallised core beliefs. The following sections will review the literature on adjustment to and beliefs about psychosis, and predictions as to the differences between adult and adolescent psychosis will be made.

1.8 – Adaptation, adjustment and recovery in psychosis

It has been proposed that psychological adjustment and adaptation are important factors in psychosis, including early-onset psychosis (Jackson & Iqbal, 2000), with possible powerful effects on outcome (e.g. McGlashan, 1987; Bebbington, 1995). It has been suggested that adaptation to psychosis is mediated by two sets of factors (Henry, 2004). Firstly, external factors, including age of onset of psychosis, family psychiatric history and level of social support. Secondly, there may be a number of internal factors: premorbid level of functioning and coping strategies, including problem-solving abilities, attribution style, self concept, and core beliefs. The roles of age of onset and core beliefs and their relationships to adaptation and recovery will be discussed below.

Jackson and Iqbal (2000) cite Rachman's (1980) theory of emotional processing and his proposal that the process of adaptation to and recovery from major life events, such as psychosis, consists of a number of stages: an initial awareness of emotional difficulties, an improvement in emotional functioning, and finally a return to premorbid routine behaviour. Change is thought to be a result of "emotional dosing" – in effect, an exposure programme using the competing responses of denial and intrusion to allow processing of disturbing thoughts. This working through of difficult experiences may be preceded by a period of denial, or sealing over (see below), before moving on to further stages of processing and adaptation.

Rather than focussing on individuals' experiences of trauma and their subsequent adaptation, Janoff-Bullman (1992) proposes that a person's beliefs about self and the world prior to psychosis are crucial to their recovery. He posits that the experience of psychosis shatters assumptions of the self as invulnerable and worthy, and the world as a comprehensible place, and that depression and anxiety are necessary consequences of this trauma and subsequent re-evaluation of self and world.

However, as the literature reviewed shows, people who experience psychosis have often experienced adversity and trauma earlier in life. While Janoff-Bullman's proposal that pre-trauma beliefs may be important determinants of adaptation to psychosis is in line with a developmental understanding of psychosis, it may be that, as Power and Dalgliesh (1997) suggest, they confirm rather than shatter peoples' beliefs about themselves and the world. Earlier adversity may have led to the genesis of beliefs regarding personal vulnerability or defectiveness that are then confirmed by the experience of psychosis. However, it is unclear the extent to which this would hold for young people, whose core beliefs of self and others are at a formative stage.

1.8.1 – Personal beliefs about psychosis

In determining those factors which are important in individuals' adjustment to psychosis, Birchwood and colleagues (1993, 1998, 2000) have investigated a number of beliefs people hold. The Personal Beliefs about Illness Questionnaire (Birchwood et al., 1993) investigates beliefs of: entrapment; humiliation as a result of stigma and need for social containment; loss of autonomy and social role; and attribution of causality.

Beliefs of entrapment are defined as a perceived lack of control of illness, or “the perception of containment in a punishing cycle of events which result in the disbelief to reaffirm an identity or sense of belonging” (Jackson & Iqbal, 2000, p. 83). Appraisals of humiliation include where individuals’ social rank, attractiveness or status is devalued in relation to self or others, and also where individuals are socially marginalized through the need for containment or detention in hospital.

Appraisals of loss of autonomy and social role indicate the extent to which, as a result of the experience of psychosis, individuals feel their capacity for independence has been compromised. Attribution of causality is defined as people’s beliefs about the origins of psychosis lying in their personality, as opposed to psychosis being regarded as an externalised illness.

Birchwood and colleagues’ (1993) initial study indicated that depressed people with psychosis perceived they had less control of their psychosis, and therefore felt entrapped by it, than their non-depressed psychotic peers. Thus, they proposed that it is the appraisal of the experience of psychosis rather than psychosis in and of itself that is independently linked to depression. A later study found that entrapment and loss of autonomy and social role were independently linked to depression (Rooke & Birchwood, 1998), although it was noted that effects of loss may be mitigated by denial. Furthermore, appraisals of entrapment, loss of social role and autonomy, and attribution of causality were found to remain stable over a 30 month follow up period. However, appraisals of stigma or need for social containment at follow up were not found to be correlated with those at baseline, indicating that such beliefs become less negative over time.

It is presently unknown whether beliefs about psychosis are associated with time of onset of psychosis. Those who have completed the tasks of adolescence (completed their education and begun careers, had relationships with significant others) but then regressed post psychosis may regard themselves as having suffered greater losses and thus feeling more entrapped than younger people, whose loss has been of an anticipated future rather than an actual one. That young people’s ideas of their future are apt to change throughout adolescence (Erikson, 1968) may mean that they are less attached to them and have less invested in them, relative to adults, whose sense of self may have been based on those qualities which are regarded as lost through the experience of psychosis. It is thus predicted that adult onset psychosis will be

associated with greater beliefs of entrapment and loss than adolescent onset psychosis.

1.8.2 – Recovery Style: Sealing Over versus Integration

McGlashan and colleagues (1976, 1987) have argued that people recovering from psychosis will adopt one of two recovery or coping styles: sealing over or integration.

People who seal over during recovery do so in order to isolate their psychotic experiences, which are regarded as alienating and incompatible with their life goals. Those who seal over are not interested in an exploration of their symptoms and such individuals maintain an awareness of the negative aspects of psychosis, consequently seeking to encapsulate their experience of it.

Those who seek to integrate their experience of psychosis have an awareness of the continuity of their mental activity and personality before, during and after psychotic experiences. Integrators are interested in their experiences and elicit the help of others to make sense of them. They also have an awareness of both the positive and negative aspects involved in the experience of psychosis.

McGlashan's original investigations, which employed interviews to assess recovery style, indicated the construct was bimodally distributed. Individuals opted for one or other recovery style, rather than presenting as a mixed picture. Recovery style was also regarded as a personality trait that was stable over time. Drayton and colleagues (1998) proposed that the findings from the Recovery Style Questionnaire, a self report measure based on the original structured interview, provided supportive evidence of this bimodal distribution. Contrary to this, Thompson and colleagues (2003) argue that these two recovery styles are opposite ends of a recovery continuum and that many individuals thus present as a mixture of the two styles. Their research into first episode psychosis and recovery style indicated that there was much greater parity of incidence of recovery styles at the initial recovery stage (integration: 31.6%; mixed style: 34.7%; sealing over: 33.7%) and between integration and mixed style but not sealing over at 12 months follow up (integration: 40.7%; mixed style: 38.6%; sealing over: 20.7%). This raises two key questions regarding: 1) the possibility that recovery style may not be bimodally distributed,

which the present study seeks to investigate further; and 2) McGlashan's proposition that recovery style is stable over time.

Tait and colleagues (2003) found that recovery style was prone to naturalistic changes (that is, not due to psychological intervention) over periods of three and six months, and they posited that, with appropriate early support, sealing over might be amenable to change. Studying a cohort of first episode psychosis clients, aged between 16 and 30, Thompson and colleagues (2003) proposed that psychoeducation and other psychotherapeutic techniques that challenged patients views and encouraged a more integrative style led to a more favourable outcome. This is congruent with Rachman's (1980) notion of emotional processing, that over time individuals are able to manage difficult experiences more adaptively. Integrators at the recovery/stabilization phase had better functioning and outcome, that is, significantly higher scores on the Quality of Life Scale (Heinrichs et al., 1984) and lower scores on the Brief Psychiatric Rating Scale (Overall & Gorham, 1962) and the Scale for the Assessment of Negative Symptoms (SANS: Andreason, 1983), at 12 months post recovery than those who sealed over.

This is in line with H. Jackson and colleagues (1998, 2001) evaluation of cognitively oriented psychotherapy for first episode psychosis (COPE). Compared to the treatment-as-usual group (who refused COPE), this intervention led to a change in attitude towards psychosis, namely moving from a sealing over style to an integrating recovery style, at both end of treatment and 12 months follow-up. An interesting finding of Jackson and colleagues' research is that current emotional functioning (termed as secondary morbidity and measured by the Beck Depression Inventory: BDI) was significantly better in the treatment-as-usual group. This is in contrast to Drayton and colleagues' research (1998) with a repeated episode group, where all moderately or severely depressed people opted for a sealing over style, and all the integrators were at most only mildly depressed.

Birchwood and colleagues (1993) report that, although easily confused, depression and negative symptoms have been found to be independent of one another (e.g. Hirsch et al., 1989). However, there is a clear overlap between the two constructs (Siris, 1995), and previous research indicates that there is significant correlation between depressive and negative symptoms (Müller, 2002).

Thus, it appears a confusing picture, with those who integrated early on in recovery reporting greater emotional dysfunction at 12 months follow up (as measured by the BDI: H. Jackson et al., 2001) and others reporting less negative symptomatology (as measured by the SANS: Thompson, 2003) compared to those who sealed over their experience of their first episode of psychosis.

There may be short term advantages to sealing over, as such a strategy may protect against experiencing adverse emotional states and maintain a degree of psychological balance in the initial phase of recovery. However, long term use of this style, with its concomitant denial and avoidance strategies, may inhibit the recovery process. Drayton and colleagues (1998) describe sealing over as an adaptive but ineffective coping strategy for those unable to defend themselves against the trauma of psychosis, and the general consensus of the literature is that sealing over later episodes is associated with greater levels of depression and poorer outcome than integrating the experience of psychosis.

As discussed further below, premorbid beliefs may have determining roles in recovery. Adapting previously held core beliefs, which are generated through earlier life experience, to newer more adaptive models is regarded as key to successful adjustment (C. Jackson & Iqbal, 2000) – however, this would seem incompatible with a sealing over recovery style, which looks to encapsulate rather than explain the psychotic episode.

1.8.3 – Factors predicting beliefs about psychosis and recovery style

Exploring what factors influenced individuals' beliefs about psychosis, Quilliams and Addington (2003) found that neither having good knowledge about the facts of psychosis nor better insight – that is, individuals' attribution of symptoms, their awareness of their difficulties and acknowledged need for treatment – was related to individuals' beliefs about psychosis. They conclude that in order to improve outcome, individuals' beliefs, which tend to reflect negative beliefs about themselves, need to be understood. Quilliams and Addington (2003) posit that these beliefs may lead to emotional dysfunction and thus, where necessary, would be appropriately addressed through cognitive behavioural interventions.

That CBT may be a useful intervention in adapting beliefs and reducing emotional distress in psychosis is increasingly being researched, and available evidence supports its utility (e.g. H. Jackson et al, 2001; French & Morrison, 2003). However, that it is a person's beliefs about psychosis that lead to emotional dysfunction is harder to ascertain. It could equally be argued that depression and anxiety, as central components of the psychosis diatheses, lead to negative beliefs about psychosis. Succinctly encapsulating one of the problems of research in this area, Rooke and Birchwood (1998) state: "...psychosis is a long-term difficulty, not a discrete event, and causal relationships are [therefore] difficult to disentangle". Thus it remains an important question: do depression or anxiety precede or follow individuals' adjustment to psychosis, and, moreover, is this relationship causal?

The present research proposes that individuals' core beliefs influence their adjustment to psychosis. Specifically, it is proposed that individuals depressive and anxious core beliefs are predictive of negative beliefs about psychosis. It is further proposed that individuals' core beliefs are also predictive of recovery style, specifically that depressive and anxious core beliefs predict sealing over. As to the role of emotional dysfunction, and also traumatic symptomatology, whether integral or reactive in nature, it is proposed that they too are predictive of individuals' beliefs about psychosis and recovery style. This relationship is predicted to be the case for both types of onset, although as discussed below, there might be differences between adult and adolescent onset psychosis.

Henry (2004) cites Horowitz's (1986) notion of 'person schemas': a number of "enduring but slowly changing views of oneself and of others" (p.72) which are used to make sense of the self and the world. However, the frequently traumatic experience of psychosis may not be congruent with the existing schemata or beliefs that individuals use to make sense of the world. This might particularly be the case for young people. Although core beliefs have their roots in earlier experiences, young people are at a developmental stage where they are developing more sophisticated and complex models of themselves and others. The consequent difficulty or inability to make meaning of their psychosis may in part account for some people's potentially maladaptive coping strategy, namely a blanket denial of their difficulties. Although it should be noted that initial sealing over does not exclusively occur in early onset psychosis, Horowitz's proposal may account for the

tendency to seal over initially, which may serve to protect against emotional dysfunction.

As described above, Birchwood (2003) proposes a number of potential pathways of emotional disorder in first episode psychosis. He goes on to propose that developmental disturbances may shape dysfunctional cognitive beliefs that then impact on adaptation to psychosis and emotional functioning (Birchwood et al., 2004). The process is not specified, but a developmental model accounting for these earlier experiences, be it trauma, abuse, rejection, or other “locks” in Parker’s (1998) language, would posit that the foundations would be laid for negative core beliefs that would then be activated by the trigger of psychosis, a metaphorical “key”. Consequently, such negative core beliefs might lead to dysfunctional assumptions such as those put forward by Garety and colleagues (1995) – for example: “bad things happen because there is something inherently wrong with me”, “I am powerless to control what happens to me” - and hamper adjustment to and recovery from psychosis.

However, given the proposed relatively lesser experience of loss and entrapment compared to adult onset psychosis and the possible greater flexibility of core beliefs, young people with psychosis may be more able to adapt to the experience of psychosis than those with more fixed perspectives whose onset of psychosis is in adulthood. It is thus proposed that adult onset psychosis is associated with greater depressive and anxious core beliefs than adolescent onset psychosis. It is further proposed that young people with psychosis will have a greater tendency to integrate their experiences than those whose onset of psychosis is in adulthood. Finally, it is proposed that this predicted difference between adult and adolescent onset psychosis affects the proposed relationship between core beliefs and beliefs about psychosis and recovery style.

1.9 – Summary of Introduction

A brief historical review of the psychosis literature outlines some of the criticisms of the traditional medical model of disease. Drawing on some of the alternative psychological models and explanations for psychosis, it is proposed that individuals’ beliefs about and adjustment to psychosis be investigated from a developmental perspective.

Previous research has indicated that anxious and depressive beliefs, which have their roots in individuals' life experiences, play a role in people's recovery from psychosis. Emotional disorder, itself in part developmentally determined by previous experience, has been described as a central part of psychosis, with a number of pathways being put forward to account for its role in the development, maintenance and adjustment to psychosis.

Furthermore, the literature on trauma indicates that the experience of earlier adverse life events may feature in and/or have a predisposing and perpetuating role in some people's psychosis. For others, psychotic episodes may be experienced as trauma resulting in PTSD. Alternatively, both psychosis and PTSD might be regarded as different reactions on a continuum of responses to the experience of trauma, the determinants of which may have their roots in the meaning made of earlier experiences.

Recent literature proposes that for those whose onset is earlier, psychosis is a disorder of disrupted adolescent development, and that therefore early onset psychosis may be similar in presentation to later onset psychosis, but different with regard to aetiology, and by extension, intervention and recovery.

This introduction sets the scene for investigating psychosis from a developmental perspective, examining the roles of age of onset, core beliefs, trauma and emotional functioning in determining beliefs about illness and recovery style.

1.10 – Hypotheses

The relationships between age of onset, core beliefs about self, others and psychosis and recovery style, with reference to the mediating and moderating effect of trauma and current emotional functioning will be investigated by testing the following hypotheses.

1. Adult onset psychosis is associated with greater beliefs of entrapment and loss than adolescent onset psychosis.
2. Adolescent onset psychosis is associated with a greater propensity for integrating than adult onset psychosis.
3. There is a higher incidence of both traumatic symptoms and emotional dysfunction in adolescent psychosis than adult onset psychosis.
4. Adult onset core beliefs are more depressive and anxious than adolescent onset core beliefs.
5. Adult versus adolescent onset, depressive and anxious core beliefs, the experience of trauma and emotional dysfunction are associated with and predictive of sealing over and negative personal beliefs about psychosis.

Chapter 2 – Methodology

2.1 – Design

A mixed design was employed to investigate the relationship between core beliefs, emotional dysfunction, traumatic symptomatology and illness beliefs and recovery style for both adolescent and adult onset psychosis.

2.1.1 – Calculation of statistical power & expected effect size

Minimums of 26 and 28 participants per group were calculated as being required in order to achieve sufficient statistical power to demonstrate large effect sizes at the 0.8 level, using independent *t*-tests and Pearson's *r* correlational inferential statistics respectively. For multiple regression analyses with seven predictor variables, a minimum of 48 participants overall are required in order to achieve sufficient statistical power to demonstrate large effect sizes at the 0.8 level (Cohen, 1992). Fewer participants were recruited than anticipated.

2.2 – Participants

In order to investigate differences between adolescent and adult-onset psychosis, participants were recruited from two sample populations.

2.2.1 – Adolescent-onset psychosis population

26 young people aged 14-23 (mean age: 18.00 years \pm 2.10) who were current or recent users of the Early Psychosis Support Service (EPSS) at the Young People's Unit, Royal Edinburgh Hospital participated in the study. EPSS is a tertiary level service providing medical, psychological and social treatment for young people up to three years after the onset of psychosis.

2.2.2 – Adult-onset psychosis population

17 people aged 29-59 (mean age: 40.00 years \pm 8.31) participated in the study. In line with Basso and colleagues' (1997) definition of adult-onset, each of the participants in this group had had at least one episode of psychosis after the age of 25. They were either users of hospital day services for severe and enduring mental health problems, or had regular contact with community mental health teams via community psychiatric nurses, mental health workers or psychiatrists.

2.3 – Measures

As length of questionnaire is known to affect response rate (Oppenheim, 1993), and inline with the recommendations of the Local Research Ethics Committee, the following measures were specifically chosen to maximise the response rate and streamline the process of participation. The questionnaire pack (see Appendix) began with questions regarding demographics – age, gender, age at first episode of psychosis, length of time (in months) since last episode, total number of episodes experienced – and was followed by the questionnaires described below.

2.3.1 – Personal Beliefs about Illness Questionnaire (PBIQ)

The Personal Beliefs about Illness Questionnaire (Birchwood et al., 1993) is a sixteen item measure of the degree to which individuals feel that the social and scientific beliefs about mental illness were accepted by them as a statement about themselves. The PBIQ consists of five scales: entrapment; self as illness; loss of autonomy and social role; stigma; and social containment. The original authors and subsequent researchers (e.g. Rooke & Birchwood, 1998) propose that the scale has sound psychometric properties. However, the original published values for Cronbach's alpha, a measure of internal consistency of the scale and its subscales, indicate that only one subscale ("self as illness": $\alpha = 0.71$) is above 0.70, the generally accepted level for reliability (Clark-Carter, 1997). This raises doubts about the reliability of the scale and its subscales to measure what they purport to measure and this will be investigated in the Results chapter. Notwithstanding these issues, the PBIQ remains the best available measure of illness appraisals and for this reason is employed in the present study.

2.3.2 – Recovery Style Questionnaire (RSQ)

The Recovery Style Questionnaire (RSQ: Drayton et al., 1998) is a thirty-nine item measure, adapted from the original in-depth interview (McGlashan et al., 1976), used to determine individuals' recovery styles with regard to integration or sealing over, as described in Section 1.8.2. Scoring of the RSQ allows the classification of six recovery styles: integration; tending towards integration; mixed picture in which integration predominates; mixed picture in which sealing over predominates; tending to sealing over; and sealing over. Drayton and colleagues (1998) demonstrated that the RSQ had good psychometric properties, reporting a Cronbach's alpha of 0.73 for

internal consistency, and found evidence supporting the notion that recovery style is bimodally distributed. However, bearing in mind Thompson and colleagues' (2003) recent contrary finding of a non bimodal distribution for recovery style and the potential for individuals' recovery style to change over time, for the purposes of the present study, recovery style will also be regarded as a continuous variable. In line with Drayton and colleagues (1988), a sealing over response scores one point and an integrating response scores two points, thus giving a possible range of scores from 39 to 78.

2.3.3 – Impact of Event Scale (IES)

The Impact of Event Scale (IES: Horowitz et al., 1979) is a fifteen item measure of avoidance (seven items) and intrusion (eight items) symptoms associated with posttraumatic subjective distress. The items are rated on a four point scale as to the frequency of their occurrence over the previous seven days: Not at all = 0, Rarely = 1, Sometimes = 3, Often = 5. The range of possible scores for the avoidance subscale is 0 to 35, and for the intrusion subscale 0 to 40. The measure has been used with both adolescent and adult samples (Joseph et al., 2000; Zilberg et al., 1982) who have experienced different types of trauma, and has been shown to have good reliability and validity (Sundin & Horowitz, 2002).

2.3.4 – Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) is a fourteen item scale which provides a brief state measure of anxiety and depression. The HADS is a well validated clinical research scale, measuring anxiety and depression on two separate subscales each consisting of seven items. Each item is scored from 0 to 3, the total score for each subscale ranging from 0 to 21. A score on either subscale from 8 to 10 indicates a possible clinical disorder and a score of 11 and above is the cut-off for probable clinical levels of anxiety or depression. The HADS has previously been used with individuals who have a diagnosis of schizophrenia (Wilkinson et al., 2000; Haddock et al., 1996), those with this diagnosis who have experienced trauma (Chubb & Bisson, 1999) and also with adolescents (White et al., 1999). Investigations with a large population (N=51930) found the HADS to have good factor structure, intercorrelations, homogeneity and internal consistency (Mykleton et al., 2001)

2.3.5 – Dysfunctional Attitude Scale (DAS-24)

The dysfunctional attitude scale (DAS-24: Power et al., 1994) is a twenty-four item scale which consists of three subscales of eight items each, relating to Achievement, Dependency and Self-Control. It was developed from the original one hundred item DAS (Weissman & Beck, 1978), which sought to test Beck's cognitive theory of depression that depressed people have more extreme beliefs and that this is part of an enduring cognitive vulnerability to depression. The three subscales of the DAS-24 have been shown to have acceptable levels of internal consistency, and highly significant intercorrelations. Evidence suggests that the Dependency subscale is indicative of a depression-specific vulnerability factor (Power et al., 1995).

2.3.6 – Metacognitions Questionnaire (MCQ-30)

The short form of the metacognitions questionnaire (MCQ-30: Wells & Cartwright-Hatton, 2004) is a thirty item measure of individual differences in a selection of metacognitive beliefs, judgements and monitoring tendencies regarded as central to the metacognitive model of psychological disorders. In line with the full sixty-five item MCQ (Cartwright-Hatton & Wells, 1997), the MCQ-30 consists of five factors, each containing six items: cognitive confidence, positive beliefs about worry, cognitive self-consciousness, negative beliefs about the uncontrollability of thoughts and danger, and beliefs about need to control thoughts. The MCQ-30 has been shown to have good internal consistency, convergent validity and test-retest reliability. Although at the time of writing, the MCQ-30 has only been used with a convenience sample consisting of students, and university and health service employees, the parent measure or component factors of it have been used to investigate attributional biases and auditory hallucinations (Baker & Morrison, 1998), the cognitive understanding of persecutory delusions (Freeman, Garety & Kuipers, 2001) and psychological dysfunction (Morrison & Wells, 2003) amongst samples of individuals with diagnoses of schizophrenia, schizo-affective disorder or delusional disorder.

2.4 – Procedure

2.4.1 – Research ethics

Ethical approval was obtained from NHS Lothian Local Research Ethics Committee prior to the commencement of the study.

2.4.2 – Participant Consent

Written, informed consent was obtained from individuals before they entered the study. Participants were advised that their decision not to participate in the study would not affect their treatment in any way and that they were free to withdraw at anytime without giving a reason. Potential participants were initially approached by their key worker or psychiatrist, who discussed the participant information form. If further information was required in order to inform the decision to participate, the individual had the opportunity to consult either the author or the independent advisor named on the information sheet with them. The independent advisor was a clinical psychologist in the Young People’s Unit who was familiar with the study but was not involved in it.

2.4.3 – Data collection: Adolescent sample

Meetings with the keyworking staff of EPSS indicated that the most effective way to collect data was for adolescents to complete the questionnaires in the presence of their keyworkers. This ensured that young people were at ease and felt comfortable in completing the questionnaires with a familiar and trusted figure. Feedback from young people via keyworkers also showed that this method had good face validity: participation was anonymous and confidential therefore it made sense to them that the author did not have direct contact with young people at the point of participation. There were two cases where participation was not anonymous: the first was where the key worker of the participating young person was the author, and a case study of the second individual is presented in chapter 4. In order that the second individual’s responses could be tied in with the presented case study, his consent was sought so that the author could, firstly, identify his completed questionnaires and, secondly, that a formulation of his case could be included in the present research, having been suitably anonymised to ensure confidentiality.

Completing the questionnaires took approximately thirty minutes and was generally done in one sitting. For three young people, further time was needed and completing the questionnaires was conducted over two or three meetings at the discretion of the young person's keyworker. In between sessions, the mental health of one of these three young people deteriorated, and he was unable to complete the remaining questionnaires having been admitted to hospital and detained under the Mental Health Act. A further two young people completed the questionnaires by themselves at home and then returned them to the author. One young person completed all but the final questionnaire, the Metacognitions Questionnaire, but did not give a reason for his refusal to complete this measure.

All but one young person who was invited to participate in the study took part. No reason was given for non-participation. Young people who had been referred to EPSS, but whose difficulties were deemed too severe to participate in the research by their keyworkers, were not invited to participate. In practice, this accounted for only three young people: where current psychotic symptomatology may have impeded individuals' ability to concentrate on completing the questionnaires, or where there was a possibility that participation may have exacerbated individuals' difficulties.

2.4.4 – Data collection: Adult-onset sample

Adult-onset participants were sought through a number of avenues: day services for adults with severe and enduring mental health problems, community mental health and assertive outreach teams, and psychiatrists' outpatient caseloads. In the first three cases, the author met with the staff in each setting, explained the purpose of the research and asked if they were able to identify any potential participants who would be eligible and willing to take part. On the advice of the keyworker for each individual, one of the following courses of action was then taken. Identified individuals were contacted directly by the author who then arranged an appointment with them to complete the questionnaires. Alternatively, as with the adolescent sample, keyworkers were present with the participant as they answered the research questionnaires, or the questionnaires were left with individuals who then completed them in their own time and then sent them onto the author.

The psychiatry outpatients who participated in the study were invited to take part by their psychiatrist, who was approached by the author in an effort to increase the size

of the sample. Using the participant information sheet, the psychiatrist introduced the idea of the research project at the end of the outpatient appointment. If willing to take part, the author either met with the individual immediately thereafter, or arranged an appointment time that was convenient in order to complete the questionnaires.

As discussed in chapter 4, it was much harder to access this population than originally anticipated, and potential reasons for this will be explored. Three participants contacted the author directly to state that they did not want to take part, and an unknown number declined the invitation from their keyworker. As with the adolescent sample, some potential participants' difficulties were such that their keyworkers thought it not appropriate to approach them regarding participating. It is not known how many non-participants this accounts for.

2.5 - Data processing

All raw data were entered into an SPSS 11 database. Where appropriate, data were then computed into variables representing the various scales and subscales used in this study.

With regard to missing data, two of the adolescent-onset participants, as described above, did not complete all the questionnaires, and they were thus excluded from descriptive and inferential statistics which involved the measures they had not completed. 13 participants did not state the nature or the date of their traumatic experience and were consequently excluded from the descriptive statistics regarding length of time since trauma.

2.6 – Operationalisation of hypotheses

The present research hypotheses are investigated using the above scales. Thus, Hypothesis 1 – *“Adult onset psychosis is associated with greater beliefs of entrapment and loss than adolescent onset psychosis”* – is operationalised by comparing the responses of those whose onset of psychosis was before 19 years of age with those whose onset was after 25 years of age on the “entrapment” and “loss of autonomy & social role” subscales of the PBIQ scale using independent *t*-tests.

Hypothesis 2 – *“Adolescent onset psychosis is associated with a greater propensity for integrating than adult onset psychosis”* – is operationalised by comparing the adult and adolescent onset groups, defined as above, on the RSQ total score, using independent *t*-tests. The higher the score the greater the propensity for an integrating recovery style.

Hypothesis 3 – *“There is a higher incidence of both traumatic symptoms and emotional dysfunction in adolescent psychosis than adult onset psychosis”* – is operationalised by comparing the scores of the two groups on the “intrusion” and “avoidance” subscales of the IES and the “anxiety” and “depression” subscales of the HADS using independent *t*-tests. Higher scores are indicative of both greater levels of traumatic symptoms and emotional dysfunction.

Hypothesis 4 – *“Adult onset core beliefs are more depressive and anxious than adolescent onset core beliefs”* – is operationalised by comparing the scores of the two groups on the subscales and total scores of the DAS-24 and MCQ-30 using independent *t*-tests. Lower scores on the DAS-24 are indicative of depressive core beliefs and higher scores on the MCQ-30 are indicative of anxious core beliefs.

Hypothesis 5 – *“Depressive and anxious core beliefs, traumatic symptoms and emotional dysfunction are associated with and predictive of sealing over and negative personal beliefs about illness”* – is operationalised by investigating the relationships between scores on the subscales and total scores of the DAS-24 and MCQ-30, the subscales of the IES and HADS, the RSQ total score and scores on the

subscales of the PBIQ using Pearson's r correlations and multiple regression analyses.

2.7 – Statistical tests

The aforementioned independent t -tests, Pearson's r correlations and multiple regression analyses were employed to test the present research hypotheses using the SPSS for Windows Release 11.0 computer application.

Chapter 3 – Results

This chapter is divided into the following sections. Firstly, the psychometric properties of the scales and their component subscales are investigated with regard to the present samples and compared with those used in previous research. The present data are then investigated to determine their suitability for parametric analyses.

Secondly, descriptive statistics of the measures are presented and compared with those of previous studies. Inferential statistics comparing the two groups on each of the measures are conducted.

Thirdly, where necessary, hypotheses are reformulated, taking into account the descriptive statistics and psychometric properties of the measures in the present research. Fourthly, the implications of the inferential statistics for the research hypotheses are examined. The Results chapter concludes with further inferential statistics testing the final research hypotheses.

3.1 – Psychometric properties of scales and subscales

In order to assess the reliability of the measures used in the present study, Cronbach's alpha (Cronbach, 1984), a measure of internal consistency, was computed for each of the scales and their component subscales. These values are given for the sample as a whole, the two groups each containing too few participants to allow calculation of the alpha levels for each one, and are presented in Table 1, along with the sample size and number of items of which each scale comprised. For comparison, alpha values for the scales in previous research are also given. As recommended by Clark-Carter (1997), alpha values above 0.7 are regarded as indicative of acceptable internal consistency reliability.

Table 1 – Psychometric properties of scales and subscales – internal consistencies measured with Cronbach’s alpha (Cronbach, 1984).

	<i>Cronbach’s alpha</i>		
	<i>No. of items</i>	<i>Combined groups (N=43)</i>	<i>Previous Research</i>
PBIQ: entrapment	4	0.549	0.64 (N=84) ^a
PBIQ: self as illness	4	0.630	0.71
PBIQ: loss of autonomy & social role	3	0.685	0.58
PBIQ: stigma	3	0.621	0.61
PBIQ: social containment	2	0.643	0.51
PBIQ: composite score	16	0.814	Not quoted
RSQ: total score	39	0.535	0.73 (N=56) ^b
IES: intrusion	7	0.905 (N=39) ^g	0.89 (N=76) ^c
IES: avoidance	8	0.830 (N=39) ^g	0.85
IES: total score	15	0.916 (N=39) ^g	Not quoted
HADS: anxiety score	7	0.868 (N=42)	0.83 (N=2098) ^d
HADS: depression score	7	0.866 (N=42)	0.85
HADS: total score	14	0.908 (N=42)	Not quoted
DAS: achievement	8	0.831 (N=42)	0.847 (N=294) ^e
DAS: dependency	8	0.713 (N=42)	0.737
DAS: self-control	8	0.794 (N=42)	0.681
DAS: total score	24	0.883 (N=42)	Not quoted
MCQ: cognitive confidence	6	0.802 (N=42)	0.93 (N=182) ^f
MCQ: positive beliefs about worry	6	0.920 (N=41)	0.92
MCQ: cognitive self consciousness	6	0.895 (N=41)	0.92
MCQ: negative beliefs about uncontrollability of thoughts and danger	6	0.914 (N=41)	0.91
MCQ: beliefs about need to control thoughts	6	0.670 (N=41)	0.72
MCQ: total score	30	0.899 (N=41)	0.93

^a Birchwood et al., 1993; ^b Drayton et al., 1988;

^c Brom & Witztum, 1992: Type of event measured - experience of psychiatric illness;

^d Mykletton et al., 2001; ^e Power et al., 1994; ^f Cartwright-Hatton & Wells, 2004

^g Those who reported neither trauma nor traumatic symptoms were excluded from this analysis

As shown in Table 1, the subscales of the PBIQ do not meet the criterion for internal consistency, nor the lower levels used in Birchwood and colleagues' (1993) research. Cronbach (1984) proposes that there must be at least four items per scale in order to calculate an alpha value for internal consistency. As shown above, this is not the case for three of the five subscales of the PBIQ, which further compromises the reliability and validity of the subscales as separate constructs. These findings may be a result of the relatively low present sample size, but given that the factor analytic properties of the scale have never been shown to be optimal, it may be that the proposed internal structure of the scale is questionable and does not capture meaningful factors within the construct of beliefs about illness.

While the Cronbach's alphas reported for the PBIQ subscales refers to the coherency of the scale's internal structure, the alpha reported for the PBIQ composite score ($\alpha = 0.814$ for groups combined) is an indicator of the utility and reliability of the measure of personal beliefs about illness. The alpha value for the composite measure suggests that it has good internal consistency. This composite measure has not been used in previous research, however given the present limitations of the subscales, it is this measure that will be investigated in the following inferential statistical analyses. This requires the reformulating of some of the research hypotheses to more general propositions.

As with the PBIQ composite score, the alpha reported for the RSQ total score ($\alpha = 0.535$ for groups combined) is an indicator of the utility and reliability of the measure of individuals' recovery style. It is less than that desired for good reliability and that cited by previous research ($\alpha = 0.73$: Drayton et al., 1998). The reasoning for Drayton and colleagues' calculating of Cronbach's alpha, necessarily a parametric analysis, is unclear. Given their later statement that recovery style is bimodally distributed, in line with previous research, and that therefore only non-parametric analyses are appropriate, this appears incongruous. However, given the present findings displayed in the following descriptive results section (Table 4), this total score measure, in preference to recovery style category, will be further investigated with regard to testing the research hypotheses. As recovery style has not been used in this manner before and internal consistency is less than optimal, results should be interpreted cautiously.

In line with previous research (e.g. Brom & Witztum, 1992; Mylkleton et al., 2001), the two subscales of both the IES and HADS were found to have good reliability with regard to internal consistency, as shown in Table 1.

The “achievement”, “dependency” and “self-control” subscales and the total score of the DAS-24 were found to have good levels of internal consistency, as shown in Table 1. The MCQ total score and all but one of the MCQ-30 subscales (MCQ: “beliefs about need to control thoughts”) were found to be internally consistent, thus inferential statistical analyses were carried out on all but this one subscale due to its lower reliability. Given that previous research (as shown in Table 3.1) has found good levels of internal consistency for this latter subscale, it may be that the present sample was too small to allow meaningful analysis of this subscale, rather than structural anomalies within the MCQ-30 itself.

3.1.1 – Requirements for parametric analyses

The raw data were explored in order to determine whether they were normally distributed, interval level data with homogeneity of variance, and thus met the requirements for parametric analyses.

In line with previous use of the measures and the proposal above that the RSQ can be used as a continuous variable consisting of equally spaced points, all measures were regarded as providing interval level data.

Kolmogorov-Smirnoff tests of normality were performed to assess the distributions of the measures, and significant departures from normality are shown in Table 2.

Table 2 – Significant departures from normality of scales and subscales

		Kolmogorov-Smirnoff test		
		<i>t - score</i>	<i>Degrees of freedom</i>	<i>Significance</i>
Adult onset				
	DAS-24: achievement	0.242	17	<i>p</i> < 0.01
	DAS-24: dependency	0.243	17	<i>p</i> < 0.01
	DAS-24: total score	0.222	17	<i>p</i> < 0.05
	MCQ-30: positive beliefs about worry	0.319	17	<i>p</i> < 0.001
Adolescent onset				
	HADS: anxiety	0.185	25	<i>p</i> < 0.05
	DAS-24: dependency	0.214	25	<i>p</i> < 0.05
	MCQ-30: positive beliefs about worry	0.193	24	<i>p</i> < 0.05
	MCQ-30: cognitive confidence	0.180	24	<i>p</i> < 0.05
Groups combined				
	DAS-24: achievement	0.153	42	<i>p</i> < 0.05
	DAS-24: dependency	0.202	42	<i>p</i> < 0.001
	MCQ-30: positive beliefs about worry	0.196	41	<i>p</i> < 0.001
	MCQ-30: negative beliefs about worry	0.164	41	<i>p</i> < 0.01

However, it has been suggested that the Kolmogorov-Smirnoff test is frequently too sensitive to small deviations from normality (Norusis, 1993). As a valid and reliable alternative, Tabachnick and Fidell (1996) propose that distributions of variables can

be regarded as normal if skewness and kurtosis, divided by their respective standard errors, is ± 1.96 . This method indicated that the DAS-24: “achievement” subscale and total score and the MCQ-30: “cognitive confidence” and “positive beliefs about worry” subscales were not normally distributed in the adult onset sample. In the adolescent onset sample, the MCQ-30: “positive beliefs about worry” subscale was found to not be normally distributed. With regard to the sample as a whole, the HADS: “depression” subscale and MCQ-30: “positive beliefs about worry” subscale were found to not be normally distributed.

For the purposes of inferential analyses, these scales and subscales were transformed. In line with Clark-Carter’s (1997) recommendation, those which were positively skewed – HADS: “depression”, MCQ-30: “cognitive confidence” and MCQ-30: “positive beliefs about worry” – were transformed using a natural log transformation, and those negatively skewed – DAS-24: “achievement” subscale – using a squared (x^2) transformation. This gives all the measures normal distributions which afford parametric analyses.

With regard to homogeneity of variance, there was only one significant difference between the two groups and this was on the DAS-24: “achievement” subscale ($F = 6.964$, $df = 1/39$, $p < 0.05$). However, Brace and colleagues (2003) propose that in order to carry out parametric analyses, the variance of one group should not be less than a third of the other. With respective variances of 72.35 and 163.43, the adolescent onset and adult onset groups are within this boundary. Furthermore, Clark-Carter (1997) proposes that parametric analyses are robust statistics than can be conducted when not all parametric requirements are met. In line with this, and given that the data is interval level and, transformed, is normally distributed, the DAS-24: “achievement” subscale is regarded as appropriate for parametric analyses.

3.2 – Descriptive statistics and comparisons between adult and adolescent onset psychosis

Descriptive statistics of the demographical information for the adolescent-onset sample are shown in Table 3.

Table 3 – Demographics and details of psychotic episodes

	Adolescent onset (N=26)	Adult onset (N=17)
Gender (N of male:female)	18:8	10:7
	<i>Mean ± S.D.</i>	<i>Mean ± S.D.</i>
Age in years	18.00 ± 2.10	40.00 ± 8.31
Age in years at first episode of psychosis	15.85 ± 1.19	31.29 ± 6.33
Time in months since last episode	7.85 ± 11.06	10.80 ± 12.34
Total number of episodes of psychosis	1.96 ± 1.33	4.50 ± 4.00
Number of months between episodes of psychosis [12 / (number of episodes / (age – age at 1 st onset))]	19.37 ± 14.67	31.24 ± 20.28

Descriptive statistics of the measures employed in this study, along with inferential statistics from the independent *t*-tests carried out to compare the adult and adolescent onset groups, are shown in Table 4.

Table 4 – Means, standard deviations and *t*-test statistics comparing adult and adolescent onset psychosis

	Adolescent onset Mean ± S.D.	Adult onset Mean ± S.D.	<i>t</i>-score	df	Sig.
PBIQ: composite score	36.89 ± 7.34 (<i>N</i> =26)	38.12 ± 5.77 (<i>N</i> =17)	-0.581	41	NS
RSQ total score:	63.23 ± 3.88 (<i>N</i> =26)	64.41 ± 4.33 (<i>N</i> =17)	-0.932	41	NS
Integration: No. (%) participants	2 (7.7%)	3 (17.6%)	-	-	-
Tends toward integration	11 (42.3%)	8 (47.1%)	-	-	-
Mixed picture: integration	9 (34.6%)	5 (29.4%)	-	-	-
Mixed picture: sealing over	4 (15.6%)	1 (5.9%)	-	-	-
Tends towards sealing over	0	0	-	-	-
Sealing over	0	0	-	-	-
Number (%) of respondents experiencing traumatic symptoms	24 (92.3%)	15 (88.2%)	-	-	-
IES: intrusion subscale	14.87 ± 10.37 (<i>N</i> =24)	15.93 ± 12.00 (<i>N</i> =15)	-0.292	37	NS
IES: avoidance subscale	14.33 ± 10.12	11.60 ± 8.33	0.876	37	NS
IES: total score	29.21 ± 18.23	27.53 ± 19.31	0.273	37	NS
Number of months since trauma	21.33 ± 27.78 (<i>N</i> =18)	58.91 ± 65.52 (<i>N</i> =12)	-	-	-
HADS: anxiety subscale	8.36 ± 4.60 (<i>N</i> =25)	8.88 ± 5.70 (<i>N</i> =17)	-0.328	40	NS
HADS: depression subscale	5.52 ± 3.51	8.29 ± 6.14	-1.187	40	NS
HADS: total score	13.88 ± 7.41	17.18 ± 10.78	-1.177	40	NS
DAS: achievement	34.68 ± 9.19 (<i>N</i> =25)	34.98 ± 12.78 (<i>N</i> =17)	-0.077	40	NS
DAS: dependency	32.40 ± 7.34	33.59 ± 11.05 (<i>N</i> =17)	-0.420	40	NS
DAS: self-control	29.80 ± 10.17	33.24 ± 10.56	-1.058	40	NS
DAS: total score	96.88 ± 19.50	101.76 ± 31.16	-0.626	40	NS
MCQ: cognitive confidence	13.52 ± 4.46 (<i>N</i> =25)	11.76 ± 4.66 (<i>N</i> =17)	1.289	40	NS
MCQ: positive beliefs about worry	10.92 ± 4.94 (<i>N</i> =24)	9.06 ± 4.63	1.340	39	NS
MCQ: cognitive self consciousness	16.29 ± 5.43	15.06 ± 6.08	0.682	39	NS
MCQ: negative beliefs about uncontrollable thoughts & danger	13.13 ± 5.56	14.65 ± 7.31	-0.758	39	NS
MCQ: total score	67.40 ± 16.22	62.71 ± 18.42	0.866	39	NS

3.3 – Reformulation and reoperationalisation of hypotheses

In light of the findings regarding the lack of internal consistency for some of the subscales employed in this study, adjustments are required to both the hypotheses and their operationalisation.

Rather than the specific focus on entrapment and loss, as measured by two of the subscales of the PBIQ, overall negative beliefs about illness are investigated, using the composite PBIQ score which was found to have good internal consistency. Thus, Hypothesis 1 is reformulated as “*Adult onset psychosis is associated with greater negative beliefs about illness than adolescent onset psychosis*”.

Hypotheses 2, 3, 4 and 5 remain as previously stated, although 4 and 5 are reoperationalised in line with the unreliability of one of the subscales of the measure of anxious core beliefs. The MCQ-30: “beliefs about need to control thoughts” subscale is not used due to its low Cronbach’s alpha values. Anxious core beliefs are thus investigated using the four remaining MCQ-30 subscales and total score, transformed where necessary as detailed above.

3.4 – Implications of inferential statistics for Hypotheses 1 to 4

As shown in Table 4, independent *t*-tests were carried out in order to test for differences between adult and adolescent onset scores on the above measures and their subscales, in line with the research hypotheses.

Hypothesis 1 – “*Adult onset psychosis is associated with greater negative beliefs about illness than adolescent onset psychosis*”.

Compared to adolescent onset psychosis, adult onset psychosis was not found to be associated with greater negative beliefs about illness ($t = -0.581$, $df = 41$, NS). Thus the null hypothesis, that adult onset psychosis is not associated with greater negative beliefs about illness than adolescent onset psychosis, cannot be rejected.

Hypothesis 2 – “*Adolescent onset psychosis is associated with a greater propensity for integrating than adult onset psychosis*”.

The frequencies and percentages of the incidence of each category of recovery style for adult and adolescent psychosis are shown in Table 4. Means and standard deviations for recovery style total score are also displayed for both groups. No significant differences were found between the adult and adolescent onset groups ($t = -0.932$, $df = 41$, NS), with regard to recovery style total score. Thus, the null hypothesis, that adolescent psychosis is associated with no greater propensity for integrating than adult onset psychosis, cannot be rejected.

Hypothesis 3 – “*There is a higher incidence of both traumatic symptoms and emotional dysfunction in adolescent psychosis than adult onset psychosis*”.

Descriptive statistics for the length of time since the traumatic event, and the avoidance and intrusion subscales of the Impact of Event scale are presented in Table 4. Four participants (Adolescent: $N=2$; Adult: $N=2$) reported that they had not experienced any trauma which was presently problematic for them, thus these individuals' scores were not included in the means displayed below. The most frequently cited traumatic event described by both groups was the experience of psychosis (Adolescent: $N=8$; Adult: $N=7$), followed by admission to hospital

(Adolescent: N=3; Adult: N=4). Two participants in each group cited the loss of a close friend or family member as the stressful life event. In addition to those who reported no trauma or traumatic symptoms mentioned above, details of the traumatic event were not disclosed in a further 7 adolescent onset cases and 3 adult onset cases, although these individuals did report the presence of traumatic symptoms. Other traumata experienced by adolescents, each cited once, included: being bullied, previous suicide attempts, and being angry with parents.

The incidence of traumatic symptoms, as either intrusive ($t = -0.292$, $df = 37$, NS) or avoidant ($t = 0.876$, $df = 37$, NS) symptoms, and the level of emotional dysfunction, in the form of depression ($t = -1.861$, $df = 40$, NS) or anxiety ($t = -0.328$, $df = 40$, NS), were not found to be significantly different between the two groups. Thus the null hypothesis, that there is not a higher incidence of either traumatic symptoms or emotional dysfunction in adolescent psychosis than adult onset psychosis, cannot be rejected.

Hypothesis 4 – “*Adult onset core beliefs are more depressive and anxious than adolescent onset core beliefs*”

As shown in Table 4, no significant differences were found between adolescent and adult onset psychosis with regard to dysfunctional attitudes of achievement, dependency, self control or overall dysfunctional attitudes. Furthermore, as also shown in Table 4, no significant differences were found between adult and adolescent onset psychosis with regard to the subscales or total score of the MCQ-30, measures of anxious core beliefs. Thus the null hypothesis, that adult onset core beliefs are no more depressive and anxious than adolescent onset core beliefs, cannot be rejected.

3.5 – Investigating Hypothesis 5

Hypothesis 5 – “depressive and anxious core beliefs, the experience of trauma and emotional dysfunction are associated with sealing over and negative personal beliefs about illness” was tested statistically using multiple regression analyses. In order to identify potential predictors of recovery style and beliefs about illness, analyses were conducted to determine whether these criteria variables were correlated with depressive and anxious core beliefs, traumatic symptoms and emotional dysfunction. These correlations for the sample as a whole are reported in Table 5 and for adult onset and adolescent onset in Table 6. Given that the direction of the correlations are predicted a priori, post hoc analyses, such as Bonferroni corrections, are not required.

Table 5 – Pearson’s *r* correlations of recovery style and personal beliefs about illness with depressive and anxious core beliefs, traumatic symptoms and emotional dysfunction for both groups combined

		PBIQ composite score			RSQ Total score		
		r	N	Significance	r	N	Significance
Combined groups							
	DAS: achievement	-0.296	42	<i>p</i> < 0.05	0.052	42	NS
	DAS: dependency	-0.477	42	<i>p</i> < 0.001	-0.015	42	NS
	DAS: self control	-0.281	42	<i>p</i> < 0.05	0.079	42	NS
	DAS: total score	-0.432	42	<i>p</i> < 0.01	0.029	42	NS
	MCQ: cognitive confidence	0.422	42	<i>p</i> < 0.01	0.090	42	NS
	MCQ: positive beliefs about worry	0.187	41	NS	0.021	41	NS
	MCQ: cognitive self consciousness	0.025	41	NS	0.201	41	NS
	MCQ: negative beliefs about uncontrollable thoughts & danger	0.504	41	<i>p</i> < 0.001	0.085	41	NS
	MCQ: total score	0.473	41	<i>p</i> < 0.001	0.135	41	NS
	HADS: anxiety subscale	0.633	42	<i>p</i> < 0.001	0.070	42	NS
	HADS: depression subscale	0.305	42	<i>p</i> < 0.05	-0.194	42	NS
	HADS: total score	0.564	42	<i>p</i> < 0.001	-0.052	42	NS
	IES: intrusion subscale	0.485	39	<i>p</i> < 0.001	0.205	39	NS
	IES: avoidance subscale	0.342	39	<i>p</i> < 0.01	0.019	39	NS
	IES: total score	0.462	39	<i>p</i> < 0.01	0.131	39	NS

Table 6 – Pearson’s *r* correlations of recovery style and personal beliefs about illness with depressive and anxious core beliefs, traumatic symptoms and emotional dysfunction in adolescent and adult onset psychosis respectively

		PBIQ composite score			RSQ Total score		
		<i>r</i>	<i>N</i>	Significance	<i>r</i>	<i>N</i>	Significance
Adolescent onset							
	DAS: achievement	-0.153	25	NS	0.127	25	NS
	DAS: dependency	-0.346	25	<i>p</i> < 0.05	0.018	25	NS
	DAS: self control	-0.154	25	NS	0.199	25	NS
	DAS: total score	-0.285	25	NS	0.140	25	NS
	MCQ: cognitive confidence	0.459	24	<i>p</i> < 0.01	0.070	24	NS
	MCQ: positive beliefs about worry	0.284	24	NS	0.162	24	NS
	MCQ: cognitive self consciousness	-0.082	24	NS	0.288	24	NS
	MCQ: negative beliefs about uncontrollable thoughts & danger	0.559	24	<i>p</i> < 0.01	-0.014	24	NS
	MCQ: total score	0.468	24	<i>p</i> < 0.001	0.247	24	NS
	HADS: anxiety subscale	0.546	25	<i>p</i> < 0.005	0.086	25	NS
	HADS: depression subscale	0.373	25	NS	-0.154	25	NS
	HADS: total score	0.516	25	<i>p</i> < 0.001	-0.019	25	NS
	IES: intrusion subscale	0.431	24	<i>p</i> < 0.001	0.175	24	NS
	IES: avoidance subscale	0.284	24	NS	0.017	24	NS
	IES: total score	0.403	24	<i>p</i> < 0.05	0.090	24	NS
Adult onset							
	DAS: achievement	-0.560	17	<i>p</i> < 0.01	-0.052	17	NS
	DAS: dependency	-0.721	17	<i>p</i> < 0.001	-0.033	17	NS
	DAS: self control	-0.597	17	<i>p</i> < 0.01	-0.133	17	NS
	DAS: total score	-0.700	17	<i>p</i> < 0.001	0.095	17	NS
	MCQ: cognitive confidence	0.475	17	<i>p</i> < 0.05	0.193	17	NS
	MCQ: positive beliefs about worry	0.136	17	NS	-0.088	17	NS
	MCQ: cognitive self consciousness	0.241	17	<i>p</i> < 0.001	0.137	17	NS
	MCQ: negative beliefs about uncontrollable thoughts & danger	0.442	17	<i>p</i> < 0.001	0.153	17	NS
	MCQ: total score	0.578	17	<i>p</i> < 0.001	0.052	17	NS
	HADS: anxiety subscale	0.796	17	<i>p</i> < 0.001	0.038	17	NS
	HADS: depression subscale	0.437	17	<i>p</i> < 0.05	-0.287	17	NS
	HADS: total score	0.656	17	<i>p</i> < 0.001	-0.144	17	NS
	IES: intrusion subscale	0.600	15	<i>p</i> < 0.01	0.235	15	NS
	IES: avoidance subscale	0.583	15	<i>p</i> < 0.05	0.141	15	NS
	IES: total score	0.624	15	<i>p</i> < 0.01	0.207	15	NS

As shown in Table 5, for the sample as a whole, beliefs about illness are correlated with traumatic symptoms, emotional dysfunction and both depressive and anxious core beliefs, with the exception of two of the MCQ-30 subscales. None of these variables was found to correlate with recovery style.

A similar set of relationships was found for the adult onset group (Table 6), with all but one of the MCQ-30 subscales correlating with the PBIQ composite score. Again, none of these variables was significantly correlated with recovery style.

There was greater variability as to those variables that correlated with the PBIQ composite score in adolescent onset psychosis (Table 6). While, as with the adult onset group, correlations were found with anxious core beliefs, no significant correlations were found with regard to avoidant traumatic symptoms or current levels of depression. Of the measures of depressive core beliefs, only the DAS: “dependency” subscale was significantly correlated with beliefs about illness in the adolescent onset group. As with the adult onset group, none of the variables was found to correlate with recovery style.

Finding a correlation between variables in one group but not the other does not mean, however, that there is necessarily a significant difference between the two groups with regard to the relationship between these variables. In order to investigate these relationships further, multiple regression analyses are used to determine whether these correlated variables and type of onset are predictive of personal beliefs about illness.

Given the absence of significant correlations, the investigated variables are not predictive of recovery style and therefore no further analysis of the predictors of recovery style is conducted.

3.5.1 – Regression analyses

Emotional dysfunction, traumatic symptomatology and anxious core beliefs are operationalised as predictor variables as described in section 2.6. As shown in Table 6, in the adolescent onset sample, the DAS: total score was not significantly correlated with beliefs about illness. However, the DAS: “dependency” subscale was correlated with illness beliefs in both groups, and highly correlated when the groups were combined (see Table 5). Thus the DAS: “dependency” subscale is used in

preference over the DAS: total score as a measure of depressive core beliefs and as a predictor variable in the following multiple regression analyses.

Initial multiple regression analysis

The stepwise method, employed in the following analyses, is the procedure of choice where the primary aim is to determine those factors which are predictive of the criterion variable, and where multicollinearity is present (Tabachnick & Fidell, 1996; Cohen et al., 2003). It is also, however, recommended for large, representative samples. As the present sample falls short of that required for statistical power (as stated in section 2.1.1), the following analyses should be interpreted with caution.

Tabachnick and Fidell (1996) recommend that, where sample sizes are small and because regression is a conservative analysis, the levels for entry and removal of variables from the regression analysis can be set at 0.1 and 0.15 respectively to ensure important variables are not excluded, and thus these levels were employed in the present analyses.

Using the stepwise method, a significant model emerged ($F_{1,40} = 25.719, p < 0.0005$). Adjusted $R^2 = 0.382$. As Table 7 shows, the only variable found to be significantly predictive of personal beliefs about illness was HADS: “anxiety” score ($\beta = 0.630, p < 0.0005$), indicating that 38.2% of the variance may be accounted for by current level of anxiety. Depressive and anxious core beliefs, intrusive or avoidant traumatic symptomatology, and current levels of depression were not found to be significant predictors in this model. Furthermore, adult onset versus adolescent onset was not found to be a predictive factor of personal beliefs about illness. These variables were not found to contribute significantly to the model and were thus removed during the course of the stepwise multiple regression.

Table 7 – Multiple regression analysis with PBIQ composite score as criterion variable

Predictor	R	R ²	Adj. R ²	F	dfs	Sig.
HADS: anxiety	0.630	0.397	0.382	25.719	1, 40	<i>p</i> < 0.0005

Predictor variables	β In	β	<i>t</i> -score	Significance
HADS: anxiety	-	0.630	5.071	<i>p</i> < 0.0005
Adult vs. adolescent onset	0.112	-	0.895	NS
HADS: depression	-0.042	-	-0.261	NS
IES: intrusion	0.146	-	0.947	NS
IES: avoidance	0.094	-	0.691	NS
MCQ: total score	0.145	-	0.925	NS
DAS: dependency	-0.193	-	-1.351	NS

Collinearity Diagnostics

The collinearity diagnostics allow for the examination of whether the predictive variables are themselves too highly intercorrelated, which leads to complexities in interpreting regression coefficients. The condition index is 3.678 and the tolerance and variance inflation factors are shown in Table 8. Cohen and colleagues (2003) argue that the conventional statistical rules of thumb – such as variance inflation factor (VIF) less than 10, condition index less than 30 and tolerance greater than 0.2 – are too liberal. That the current data are far removed from these levels indicates that the predictor variables are not too highly correlated to affect the regression coefficient.

Table 8 – Multicollinearity diagnostics for multiple regression analysis with PBIQ composite score as criterion variable

	Tolerance	Variance Inflation Factor (VIF)
Adult vs. adolescent onset	0.996	1.04
HADS: anxiety	1.000	1.000
HADS: depression	0.599	1.671
IES: intrusion	0.655	1.526
IES: avoidance	0.846	1.183
MCQ total score	0.635	1.574
DAS: dependency	0.744	1.345

Further Multiple Regression Analysis

In order to determine whether there was a further model which was hidden by current levels of anxiety, a further stepwise multiple regression was performed to determine the effect of the other variables when HADS: anxiety was excluded, the results of which are shown in Table 9.

Table 9 – Multiple regression analyses with PBIQ composite score as criterion variable excluding HADS anxiety

Predictors	R	R ²	Adj. R ²	F	dfs	Sig.
DAS: dependency MCQ: total score	0.539	0.290	0.253	7.765	2, 38	$p < 0.001$

Predictor variables	β In	β	t-score	Significance
DAS: dependency	-	-0.300	-1.891	$p = 0.066$
MCQ: total score	-	0.320	2.019	$p = 0.051$
Adult vs. adolescent onset	0.212	-	1.561	NS
HADS: depression	0.211	-	1.460	NS
IES: avoidance	0.173	-	1.209	NS
IES: intrusion	0.258	-	1.622	NS

Using the stepwise method, a model *approaching* significance emerged ($F_{2,38} = 7.765, p < 0.001$). Adjusted $R^2 = 0.253$. As Table 9 shows, the DAS: “dependency” subscale and MCQ: total score approached significance at the $p < 0.05$ level, suggesting that 25.3% of the variance may be explained by depressive and anxious core beliefs. It is speculated that in a larger sample with appropriate power, this association may have reached significance. Intrusive and avoidant traumatic symptomatology, and current levels of depression were not found to be significant predictors in this model. Adult onset versus adolescent onset was again not found to be a predictive factor of personal beliefs about illness. As before, these variables were not found to contribute significantly to the model and were thus removed during the course of the stepwise multiple regression.

Collinearity Diagnostics

The condition index is 16.329 and the tolerance and variance inflation factors are shown in Table 10. Again, that the current data are far removed from those levels conventionally regarded as problematic indicates that the predictor variables are not too highly correlated to affect the regression coefficient.

Table 10– Multicollinearity diagnostics for multiple regression analysis with PBIQ composite score as criterion variable, excluding HADS anxiety

	Tolerance	Variance Inflation Factor (VIF)
Adult vs. adolescent onset	0.980	1.020
HADS: depression	0.871	1.149
IES: intrusion	0.711	1.407
IES: avoidance	0.898	1.113
MCQ total score	0.742	1.347
DAS: dependency	0.742	1.347

Thus, although there are a number of correlations between variables and current level of anxiety is predictive of personal beliefs about illness in the present sample, the null hypothesis that depressive and anxious core beliefs, the experience of trauma and emotional dysfunction are not predictive of sealing over and negative personal beliefs about illness cannot be rejected.

Chapter 4 – Adolescent onset psychosis as a disorder of adolescent development: A case study

The following case study illustrates Harrop and Trower's (2003) theory of psychosis as a result of disordered adolescence. Consent was given by the young person for his case to be described herein, and also for his questionnaire responses to be identified and included. Changes have been made to ensure confidentiality and anonymity.

4.1 – Donnie: loss, disrupted adolescent development and psychosis

Donnie is 17 years old and was referred to EPSS ten months ago. His current presentation includes hearing voices and holding beliefs about voices being able to predict his thoughts and those of others. He appears low in mood at times, although Donnie does not always agree that this is the case. He has lost interest in his appearance and at times appears dishevelled. At times, his social skills seem lower than might be expected when compared to his peers. Although a participant in the group interventions run by EPSS, Donnie tends to keep to himself and at times will isolate himself from others.

Family Constitution

Donnie is the oldest of four children. His younger brother Peter, who had a history of physical health problems, died aged 10 when Donnie was 11 years old, 6 years ago. He has a younger brother and sister, and he lives at home with his parents and his siblings, whom he occasionally baby-sits. Donnie reports that his aunt died approximately 3 years ago, and this, coupled with his brother's death, seems to have had a significant impact on the family.

Personal History

Donnie reports that throughout childhood he lived life through his more outgoing younger brother. He had few friendships during primary school and those he did have were through Peter. In middle and earlier childhood, Donnie reports that he easily became upset, and this may have made him vulnerable to the bullying he endured at primary school.

Donnie reports that at times his being upset elicited not support or nurturance, but rather anger from his parents. This remains the case, with Donnie reporting that they can respond angrily when he is upset by distressing thoughts. Peter is described by Donnie as much hardier and resilient to the adversities that Donnie found upsetting. In time, Donnie also adopted a more robust approach, and reports that around the age of 10 or 11, he hardly ever cried, not long before Peter's death. Donnie reports that he and his brother were treated no differently by their parents, except when Peter was ill, when, quite rightly in Donnie's view, he received more attention.

As he progressed through secondary school, Donnie reports that he was less withdrawn and had more friends and acquaintances. In addition to beginning to feel less social isolated, he was also achieving academically. Donnie sought a romantic relationship with a girl in his peer group, someone to whom he felt very close to and understood by. However, this feeling was not reciprocated, which led to Donnie feeling both angry and upset at the individual, and then subsequently guilty for expressing his anger. This event is frequently played over in Donnie's mind and is central to much of the content of his auditory hallucinations. Furthermore, this event seems to have marked the end of this positive period of peer relationships, with Donnie's one experience of trusting others going badly and lead to him becoming closed off from others once more.

Donnie reports difficulties in being able to experience his emotions. He has difficulty in understanding and regulating negative emotions, such as anger and low mood. Donnie is more consciously aware of his feelings of grief and loss, which are linked to his feelings of guilt for not having grieved as he thinks (and/or he thinks others think) he should have for his aunt and brother. Donnie reports not having been upset at the time of his family members' deaths, and believes that his parents resent him for this perceived lack of emotion and caring.

Formulation

Given Peter's chronic medical condition, it seems that there were necessarily some differences in the parenting of Donnie and his younger brother. Donnie may have sought the attention of his parents by following Peter's examples: initially seeking attention through parental consolation in times of distress, and then, given that method's failure, opted for Peter's hardier approach.

This harder approach involved a degree of emotional numbing that may have impacted on Donnie's developing abilities to process and express his emotional states. This is particularly evident around the time of Peter's death. His previous experience of crying being an annoyance for others, added to his parents possible unavailability due to their own grief, left Donnie with no-one to help him process and express his own confused emotions of anger, guilt and sadness around his brother's, and later aunt's, death.

It is unclear when Donnie first heard voices. This may be due in part to a lack of peer relationships and bullying in his younger years, which may have led in turn to his withdrawal into himself and his internal world (Harrop & Trower, 2003). With Peter's death, Donnie suffered a number of losses. Donnie used Peter to help him manage in the external social world and when Peter died Donnie lost his main means of peer social support. Without peers or family to aid his adolescent self-construction – his developing sense of who he is – Donnie's voices arose from his **social isolation and alienation** in order to fulfil these roles. That Donnie felt unable to show how he felt may have resulted in his developing sense of self being put on to him by others. His presented self, how he really thought and felt about himself, was not affirmed by others, which may have led to feelings of alienation. His one adolescent attempt of using others in his self-construction resulted in the confirmation of negative beliefs about himself and others. Consequently, isolated and alienated from his peers in the external world, Donnie's voices and internal world maladaptively meet the needs of his developing sense of self.

Furthermore, his adolescent development was curtailed by his difficulties in processing and expressing emotions. Donnie sees the world and himself from his own point of view and assumes that others will see him from this point of view, which is more in line with the **egocentric** perspective of a younger adolescent. The result is that Donnie views himself negatively and thus believes that others also view him negatively. Some of his distressing thoughts are attributed to the voices, which arose from his social isolation. These distressing thoughts are thus not owned by Donnie, and, experienced as coming from an external source, serve as further confirmation of his negative self view.

Connected to his egocentricity are Donnie's **difficulties in de-idealising** others. His peers/voices are frequently always right in Donnie's view: if they tell him he is a bad

person then he is a bad person, if they say that other people think he is rubbish then he thinks others think he is rubbish. Rather than using other people to help him process and express difficult emotions, Donnie uses his voices. However, the voices, like his peers, are idealised and regarded as omniscient and powerful. Although at times benevolent and functioning essentially as a substitute peer group, Donnie's voices can become malevolent, which is especially problematic as their negative statements seem unchallengeable, which contributes to his low mood.

4.2 – Connecting disordered adolescent development with the role of core beliefs in psychosis

Harrop and Trower's (2003) theory of disordered adolescent development is thus useful in accounting for Donnie's experience of psychosis. However, Donnie's difficulties are also presented in terms of their developmental psychopathology, with regard to his experience of difficulties earlier in life. The following section seeks to integrate the role of core beliefs in adjustment to psychosis with the model of psychosis as a disorder of adolescent development.

As a result of his earlier experiences of how others handle his emotions, Donnie developed capacities which enabled him not to express his feelings, but that also prevented him from being able to process his emotions. This is congruent with the proposal that core beliefs are formed by earlier experiences: Donnie's endorsement of dysfunctional attitudes such as "*I should always have control over my feelings*" and "*what other people think about me is very important*" combined with metacognitive beliefs such as "*I should be in control of my thoughts all of the time*" supports this. As shown in Table 11, Donnie scored highly on the measures of depressive and anxious core beliefs.

His non-expression and processing of emotion persisted through later childhood and into adolescence, ultimately impairing his developing ability to cope adequately with more complex emotional and cognitive states in adolescence. Donnie's social isolation and alienation is likely to have led to his focus on his internal world and the subsequent development of voices as a substitute for the peer group he did not have. His one unsuccessful attempt at forming a meaningful relationship with another reinforces for him that others are unable to support him or that he is unable to elicit their support (DAS: dependency - "*I am nothing if a person I love doesn't love me*").

The depressive and anxious core beliefs formed by his earlier experiences are then “unlocked” (Parker et al., 1998) or confirmed (Power & Dalgliesh, 1997) by this later stressful life event. Given that adolescents may have fewer mental models to make sense of their experiences (Horowitz et al., 1991), it might be expected that Donnie would find this experience stressful or traumatic, and that it would contribute to his low mood.

This event, his rejection, anger and subsequent guilt are then repeatedly re-experienced in terms of both intrusive thoughts and as auditory hallucinations. This fits with Morrison and colleagues (2003) proposal that both psychosis and PTSD are related types of reactions on a spectrum of responses to trauma. As regards traumatic symptomatology, Donnie reports a level of avoidant symptoms which are in line with the average for young people with psychosis, whereas his level of intrusive symptoms is twice the mean. There may be a dynamic between his thoughts and those experiences he regards as voices, such that one activates the other and vice versa. The content of self-loathing, rejection, and anger is similar in both. If Donnie experiences his voices berating him, he tends to acquiesce to their negative comments, and if he experiences distressing intrusive thoughts of his traumatic experience, he then experiences the voices confirming his negative view of himself.

Whether this process begins with intrusive thoughts or hearing voices, it contributes to his emotional dysfunction. His unprocessed emotional experiences of loss, anger and guilt are frequently replayed internally, but without strategies or others to help process these feelings, they remain unresolved. Metacognitions, such as “*It is bad to think certain thoughts*” and “*I will be punished for not controlling certain thoughts*” contribute to his high current level of emotional dysfunction. The standardised measures of anxiety and depression indicate that he meets case-ness for both (Zigmond & Snaith, 1983), as shown in Table 11.

Table 11 – Comparison of Donnie’s scores with the mean scores for the adolescent onset group

	<i>Donnie’s scores</i>	<i>Adolescent onset group</i> <i>Means ± S.D.</i>
PBIQ composite score	42	36.89 ± 7.34 (N=26)
RSQ total score	65	63.23 ± 3.88 (N=26)
RSQ category	Tends towards integration	-
Traumatic Event	Psychotic episode	-
IES avoidance	15	14.87 ± 10.37 (N=24)
IES intrusion	29	14.33 ± 10.12
HADS anxiety	10	8.36 ± 4.60 (N=25)
HADS depression	8	5.52 ± 3.51
DAS dependency	15	32.40 ± 7.34 (N=25)
MCQ: total score	88	67.40 ± 16.22 (N=24)

In summary

It is beyond the scope of the present case study to attempt to explain causal relationships. However, it does suggest that, for Donnie, depressive and anxious core beliefs are associated with negative beliefs about illness although not with a sealing over recovery style. Despite his depressive and anxious core beliefs, traumatic symptomatology and current emotional dysfunction, Donnie’s recovery style was that of tending towards integration. Thus it would seem that the relationship between core beliefs and recovery style is not straightforward, and possible reasons for this generally are discussed in the following chapter.

Donnie’s depression and integrating recovery style is congruent with Jackson and colleagues (2001) findings that higher levels of emotional dysfunction are associated with integrating earlier on in recovery. The authors suggest that integrating leads to increased insight. This would involve the acknowledgment of the difficulties, such as loss and stigma, that are often associated with psychosis, and it might be that it is this realisation that leads to depression.

However, such reasoning may be too simplistic. Certainly for Donnie, it does not take account of his previous stressful life experiences, which shaped his core beliefs;

his high levels of current avoidant and intrusive traumatic symptomatology related to the onset of psychosis; and his continuing negotiation of adolescence, with its concomitant pressures, all of which are likely to have an impact on his emotional functioning, with or without regard to his recovery style. Although Donnie's case may not clarify the causal nature of the various pathways and relationships of factors pertinent to understanding people's experience of psychosis, it does illustrate possible connections, some of which are tested empirically in the present study. Donnie's case also highlights the sheer complexity of factors which may be encountered in adolescent onset psychosis and indicates the utility of a developmental psychopathological approach to understanding psychosis.

Chapter 5 – Discussion

In this chapter, the research hypotheses are first examined, with regard to both the present results and those of previous research. The methodological limitations are discussed with reference to their impact on the present research and how these difficulties might be ameliorated in future research. Finally, the conclusions of the present research are presented.

5.1 – Implications of present findings and comparison with previous research

As stated in section 3.4, the null hypotheses, that there are no differences between groups with regard to the beliefs about illness, recovery style, traumatic symptoms, emotional dysfunction and depressive and anxious core beliefs, cannot be rejected for hypotheses 1 to 4. The implications of these findings and comparisons with previous research are presented in sections 5.1.1 to 5.1.5.

5.1.1 – Hypothesis 1 – Beliefs about psychosis

The PBIQ composite score, measuring individuals' negative beliefs about illness, was not found to differ significantly between the two groups. As mentioned previously, past research has focussed on investigating the subscales of the PBIQ rather than the composite score. However, summing the means of the subscales reported by Birchwood and colleagues (1993) gives composite scores (depressed subsample (N=18): 41.1; non-depressed subsample (N=66): 32.5) similar to those of the present study (adolescent onset: 36.89 ± 7.34 ; adult onset: 38.12 ± 5.77). In the present study, the low internal consistency of the subscales of the PBIQ indicates that they are not representative of the factors which Birchwood and colleagues (1993) report. It is possible that the sample size of the present study was not large enough to fully investigate the internal consistency of the PBIQ and it is for this reason, rather than underlying difficulties with the scale itself, which gives rise to the current findings of the scale's unreliability. However, the original authors' (1993) factor analysis of the PBIQ indicates that the subscales have less than optimal internal consistency and, moreover, 3 of the 5 subscales, with less than 4 items per scale, have too few items to be regarded as reliable factors (Cronbach, 1984). The composite score, on the other hand, has good internal consistency, which indicates

that, overall, the PBIQ measures a reliable construct, namely individuals' beliefs about their experience of psychosis. It may be that there are other more reliable factors within it that further research using exploratory factor analyses might uncover, although a considerably larger sample than that of both the present study and Birchwood's (1993: N=84) would be required.

That the original formulation of hypothesis 1, looking at beliefs regarding loss and entrapment, could not be investigated prevents conclusions being drawn about whether there are differences between adolescent and adult onset psychosis with regard to these specific beliefs. The proposal of differences between present loss versus future loss amongst adults and adolescents remains an important unanswered question, which the more general reformulation of hypothesis 1 may not have been sufficiently sensitive to address. As proposed in the introduction, actual losses of the external and material, such as career, accommodation or relationship, on which individuals' notion of self may rest, may be more significant, or at least different, losses from those of adolescents. There is overlap between the two groups, with adolescents also potentially experiencing actual losses, of relationships and so forth. However, given the developmental stage of adolescence, where a number of major life decisions are being, or will shortly be, made, it is often the loss of anticipated future which young people face most acutely. With reference to the case study in Chapter 4, it is possible that Donnie's thoughts about how psychosis frustrated his aspirations for the future may have been an important yet un-accessed factor in his beliefs about illness. Although the construct of beliefs about illness or psychosis as a whole is legitimate, the internal structure of the scale and its proposed component factors require investigation. In addition to losses of social role and autonomy – which is a task of adolescence in itself – it may be worthwhile to broaden the construct to account for the loss of anticipated future which may be particularly pertinent for some young people.

5.1.2 – Hypothesis 2 – Recovery style

Unlike the findings of the original authors and others (e.g. Rooke & Birchwood, 1998), recovery style was not found to be bimodally distributed in the present sample. On the contrary, individuals' responses were found to be normally distributed, the most common recovery style being “tends towards integration” in both groups. Given the present findings, the use of the RSQ as a continuous,

normally distributed variable rather than a categorical, bimodal variable is warranted. Although Thompson and colleagues (2003) point out that it is not yet known whether the RSQ consists of interval level data, Clark-Carter (1997) proposes that if a variable is ordinal but has at least 20 or more levels within it, then, as long as the other parametric requirements are met, it is considered legitimate to conduct parametric tests on the data. The RSQ total has 39 possible levels and, as stated in the Results chapter, it is this measure of recovery style that was investigated using inferential statistical analyses. Given the exploratory nature of the use of the measure in this manner, and also its less than ideal internal consistency, results presented and conclusions drawn should be interpreted with caution. Notwithstanding these caveats, no significant differences were found between the adult and adolescent onset groups with regard to recovery style.

It would appear that the contention, oft cited (e.g. Drayton et al., 1998; McGlashan, 1987), that recovery style is a bimodal construct, people either seal over or integrate their experience of psychosis, is open to question. With both groups, a sizable proportion of people (35% and 30% for adolescent and adult onset respectively) had a recovery style characterised as a mixed picture with integration predominating. Possible avenues for further research of this are outlined below.

5.1.3 – Hypothesis 3 – Trauma & emotional dysfunction

Emotional dysfunction

Scores on the anxiety (adolescent onset: 8.36 ± 4.60 ; adult onset: 8.88 ± 5.70) and depression (adolescent onset: 5.52 ± 3.51 ; adult onset: 8.29 ± 6.14) subscales of the HADS are comparable with Jackson and colleagues' (2004) research which investigated a sample of 35 individuals (mean age: 25.8 years \pm 5.09, range 18-35) 18 months after their first episode of psychosis sample. These authors do not report results for their sample as a whole, but rather as two sub-samples: those who post first episode of psychosis meet the criteria for PTSD (anxiety: 9.5 ± 5.4 ; depression: 7.4 ± 4.7), and those who do not (anxiety: 6.1 ± 3.4 ; depression: 6.8 ± 4.4).

As PTSD symptoms were not a focus of the present study direct comparison with previous research is not possible. Given that there is a high incidence of the experience of trauma and consequent traumatic symptomatology in the present samples, that the levels of anxiety for both adults and adolescents are between those

of Jackson and colleagues' PTSD and non-PTSD groups is in line with that which would be expected.

As consistently demonstrated in the research literature, there is a high incidence of depression and anxiety amongst people with psychosis. The original authors indicate that a cut-off of 8 points is indicative of possible case-ness (Zigmond & Snaith, 1983). The mean anxiety rating for both adolescent and adult onset is above this, as is the mean rating for depression amongst adult onset psychosis. As Birchwood (2003) suggests, emotional dysfunction remains a significant part of psychosis, and the present study supports the notion that it is problematic post psychotic episode.

Trauma

Research has indicated that the incidence of trauma exposure or PTSD among people with psychosis has been under-recognised. Mueser and colleagues (1998) found the rate of PTSD to be 43% in their sample of 275 people with severe mental illness, but only 3% of people had such a diagnosis in their medical notes. While PTSD as a diagnosis was not investigated in the present study, the findings that 92% of young people and 88% of those with adult onset psychosis reported having experienced traumatic events is similar to the high incidence (98%) reported by Mueser and colleagues (1998). Scores on the intrusion (adolescent onset: 14.87 ± 10.37 ; adult onset: 15.93 ± 12.00) and avoidance (adolescent onset: 14.33 ± 10.12 ; adult onset: 11.60 ± 8.33) subscales of the IES in the present two groups are similar to those found in Jackson and colleagues (2004) recent research, which revealed high levels of intrusion (12.7 ± 8.8) and avoidance (15.0 ± 9.9). Thus the present research findings indicate that the experience of trauma and continued experiencing of traumatic symptomatology are common amongst people with psychosis.

Following Horowitz's (1986) notion of person schemas, it was proposed that, possessing fewer mental models and thus having more limited coping strategies, adolescents would report higher levels of depression, anxiety and traumatic symptomatology than those whose onset was in adulthood. This is not supported by the present research, which indicates that there were no significant differences between the two groups with regard to the incidence of depression, anxiety or traumatic symptomatology. However, the descriptive statistics do indicate that there are greater, albeit non-significant, levels of avoidant traumatic symptomatology in adolescent onset psychosis. This is not unrelated to Horowitz's notion, as it was

proposed that as a result of fewer strategies or mental models, younger people would adopt denial as means of coping. Avoidant strategies are very much inline with denial of difficulties.

Reviewing different pathways of psychosis and trauma

The present research did not set out to systematically investigate Morrison and colleagues' (2003) three pathways of psychosis and trauma, however the current findings shed the following light. It is difficult to gauge the incidence of previous stressful life events prior to the onset of psychosis as this was not directly measured, furthermore the causal nature of this event with psychosis is beyond the scope of this study. However, two participants in each group stated in the IES that their stressful life event was bereavement, another participant childhood bullying and a further participant previous suicide attempts. From a stress diathesis perspective it seems reasonable to conclude that these life events and the resulting trauma may, for some people, be factors leading to the onset of psychosis.

With regard to PTSD in response to the trauma of psychosis, the present findings show that the most frequently cited traumatic event described by both groups was the experience of psychosis, followed by admission to hospital. This indicates that, for some people, the experience of psychosis, and its treatment, are indeed sufficient to result in traumatic symptomatology. Further research investigating those factors that contribute to psychosis or its treatment being experienced as a trauma by some individuals is clearly valuable. In order to facilitate better adjustment to and recovery from psychosis, services need to be aware of potential iatrogens, such as detention or compulsory medications, in order to minimise and manage the risk of trauma as a result of the experience of psychosis.

The third pathway Morrison and colleagues (2003) suggest, that psychosis and intrusive and/or avoidant symptomatology are related types of responses to trauma, is not addressed through the quantitative research in the present study, but, as described in chapter 4, trauma may result in a complex interplay between intrusive thoughts and psychotic symptomatology.

An integrative model, which accounts for the various pathways, proposes that :

... traumatic experiences contribute to the development of faulty self and social knowledge and the (potentially psychotic) nature of interpretations of

intrusions... Problematic, culturally unacceptable interpretations, and the associated distress and disability... may be triggered by [later] memories of [earlier] trauma, in addition to current trauma [including, presumably, psychosis] (Morrison et al., 2003, p.344).

It seems reasonable to conclude that earlier experiences, including traumata, form the basis for core beliefs, which people use to make sense of the world. It is possible that the “culturally unacceptable interpretations” - referred to diagnostically as delusional beliefs - that result from people’s meaning making of their experiences may be triggered by memories of earlier trauma and/or present stressful events. Stressful events may trigger earlier memories of adversity which lead to psychosis, as Parker’s (1997) argument would suggest, or be sufficient in themselves to result in psychotic symptomatology.

In effect, the integrative model endeavours to account for two types of traumata, early adverse experiences and current stressful life events. However, it is possible that there are different psychological processes underlying the two – earlier experiences of trauma may lead to underlying vulnerabilities to psychological dysfunction, whereas the processes underlying the experience of psychosis as a trauma may be that of adjustment and adaptation. It may be that rather than different pathways with the same underlying psychological processes, an integrative model of trauma and psychosis may look to account for individual’s adjustment and adaptation to the present trauma in addition to their latent vulnerabilities as a result of earlier experiences. For example, the case study of Donnie shows that he experienced trauma during his childhood, the impact of which is likely to have had a formative influence on his perceptions of self and the world, and also his interpretation of later stressful events. However, he was also adjusting to the experience of psychosis, which was intricately interwoven with his experiences of adolescence. It may be worthwhile to separate the two types of trauma conceptually, in order to better understand individuals’ past and current experiences of and adjustment to trauma.

5.1.4 – Hypothesis 4 – Core beliefs

As stated in section 3.4, neither anxious nor depressive core beliefs were found to be significantly greater in adult onset psychosis compared to adolescent onset psychosis. With regard to the incidence of depressive core beliefs in other clinical samples, the present results are very much in line with those reported by Power and colleagues

(1995) for a sample of currently depressed individuals, as shown in Table 12. As regards anxious core beliefs, the scores of the two groups in the present study are generally higher than that of the general population, with the exception of adult onset positive beliefs about worry. For comparison, present findings and Wells and Cartwright-Hatton's (2004) original findings, using a convenience sample of student, university and health service employee participants, are displayed in Table 12.

Table 12 – Comparison of descriptive statistics for DAS-24 & MCQ-30 with previous research

	Adolescent Onset	Adult Onset	Previous Research
	Mean± S.D.	Mean± S.D.	Mean± S.D.
DAS: achievement	34.68 ± 9.19 (N=25)	34.98 ± 12.78(N=17)	32.6 ± 10.6 (N=19) ^a
DAS: dependency	32.40 ± 7.34	33.59 ± 11.05	35.2 ± 9.8
DAS: self-control	29.80 ± 10.17	33.24 ± 10.56	33.5 ± 8.2
DAS: total score	96.88 ± 19.50	101.76 ± 31.16	101.3 ± 24.3
MCQ: cognitive confidence	13.52 ± 4.46 (N=25)	11.76 ± 4.66 (N=17)	9.51 ± 4.06 (N=182) ^b
MCQ: positive beliefs about worry	10.92 ± 4.94 (N=24)	9.06 ± 4.63	9.60 ± 3.46
MCQ: cognitive self consciousness	16.29 ± 5.43	15.06 ± 6.08	11.65 ± 4.68
MCQ: negative beliefs about uncontrollable thoughts & danger	13.13 ± 5.56	14.65 ± 7.31	9.30 ± 4.00
MCQ: total score	67.40 ± 16.22	62.71 ± 18.42	48.41 ± 13.31

^a Power et al., 1995; ^b Wells & Cartwright-Hatton, 2004

The proposal that young people would have less anxious and depressive underlying schemata, given their less formed core beliefs compared to the more crystallised beliefs of those whose onset of psychosis is in adulthood, does not appear to hold. The experience of psychosis may have a major negative impact on young people's developing core beliefs and thus this would account for the absence of significant differences between the two groups. It would be useful to assess this prospectively, to investigate the extent to which core beliefs change as a result of psychotic episodes. It could be, as Power and Dalgliesh (1997) suggest, that they are in fact confirmed, and that, acting as a trigger, psychosis activates latent maladaptive anxious and depressive core beliefs, which are themselves the result of earlier adversities common amongst people with psychosis. Before embarking on a longitudinal prospective investigation, it could be that more sensitive or specific measures would tap into particular core beliefs than those employed here. Future research may wish to include a more qualitative interview approach to facilitate further understanding of the core beliefs of people with either adult or adolescent

onset psychosis, particularly in light of the relationship with beliefs about illness discussed in the following section.

5.1.5 – Hypothesis 5 – Predictors of beliefs about illness and recovery style

Personal beliefs about illness

Although core beliefs and traumatic and depressive symptomatology were found to be associated with personal beliefs about illness, only current level of anxiety was found to be a significant predictor of illness beliefs. Removing current anxiety from the model indicated that both anxious and depressive core beliefs, in the form of dependency, were approaching being significantly predictive of beliefs about illness.

Although multicollinearity was not found to be problematic with regard to its effect on the regression coefficient, further post hoc analysis indicates that current anxiety, dependency and anxious core beliefs are significantly correlated with one another, as shown in Table 13.

Table 13 – One tailed Pearson’s *r* correlations of HADS: anxiety subscale, MCQ: total score and DAS: dependency subscale

		HADS: anxiety score	MCQ: total score
<i>DAS: dependency</i>	<i>r</i>	-0.510	-0.508
	Significance	$p < 0.01$	$p < 0.01$
	N	42	41
<i>HADS: anxiety</i>	<i>r</i>	-	0.604
	Significance	-	$.p < 0.01$
	N	-	41

Thus at a statistical level there is much shared variance (approximately 25 and 36%) between the three. This means that including more than one of these three factors is unlikely to contribute significantly to the regression model, as was found to be the case. It also makes sense at a conceptual level: given that the Metacognitions Questionnaire is a measure which is constructed to taps into individuals’ anxious core beliefs of worry and anxiety, it is likely to be associated with current levels of anxiety. Cohen and colleagues (2003) suggest that this “moderate multicollinearity” – where multicollinearity is not statistically significant but may be sufficient to confuse interpretation of the regression model – can be overcome by careful

selection of predictor variables. This could be done by combining variables that measure the same underlying construct, or by excluding variables, having ensured that they do not make an important contribution to the model. Selecting predictor variables based on their relationship to theoretical constructs, as described in section 2.6, may help to avoid difficulties of moderate multicollinearity and lead to clearer relationships between predictor and criterion variables. Given the present results, one fruitful avenue of future research may be to investigate the relationship between core beliefs and current levels of anxiety. It would be especially useful to be able to identify anxious vulnerability factors. Evidence suggests that dependency is a depression-specific vulnerability factor (Power et al., 1994; 1995), and it may be that content-specific subscales arising from further investigation of metacognitions and current anxiety can tap into anxious vulnerability factors.

Although the sample size here may not have been sufficient to demonstrate this, there are indications that anxious and depressive core beliefs may have an important role in people's adjustment to psychosis. The literature regarding metacognitive beliefs and generalised anxiety disorder shows clear links between the two (e.g. Wells, 2000). The same processes may account for anxiety amongst people with psychosis and thus there might well be suitable applications of existing cognitive behavioural therapeutic interventions with this client group. Similarly, depressive core beliefs, of dependency in particular, may be a significant factor in determining beliefs about illness, and adds a further theme to Fowler and colleagues' (1995) common dysfunctional assumptions in psychosis as summarised in section 1.5. Addressing these – again the evidence supports cognitive behavioural strategies (e.g. French & Morrison, 2003) – may promote less negative beliefs about illness and subsequent adjustment to the experience of psychosis.

Recovery Style

That recovery style is not associated with any of these factors is both unexpected and of interest. This could be due to methodological factors, the measures used in this study not being sensitive enough to pick up those aspects of individuals' beliefs about themselves and the world that determine recovery style. Alternatively, core beliefs, emotional dysfunction and traumatic symptomatology are not related in any way to recovery style. It may well be that there are other more important factors

which determine recovery style – utilisation of social support, high levels of intrafamilial expressed emotion, for example – but are not investigated in this study.

Before abandoning the potential roles of the hypothesised predictive variables, however, it may be worth investigating these constructs using other means. The investigation of recovery style as a continuous normally distributed variable, as opposed to a dichotomous bi-modal variable, is novel. The Recovery Style Questionnaire (Drayton et al., 1998) itself was the product of a semi-structured interview (ISOS: McGlashan, 1976), which proposed the bimodality of the recovery style construct. It may be time to review the concept of recovery. An increasing number of studies report findings contrary to those of the original authors (e.g. Tait et al., 2003; Thompson et al., 2003). From a historical perspective, the RSQ is the result of a measure which places psychosis very much in a medical illness paradigm, as does the PBIQ to some extent. Given that a number of current, and successful, interventions espouse a normalisation model for psychosis (e.g. McGorry et al., 1995; French & Morrison, 2003) rather than that of a severe and enduring mental illness, it may be that the concept of recovery, and beliefs about psychosis, are broader, multidimensional concepts than was previously thought. It may be worthwhile to return to qualitative means, without the assumptions of bimodality and enduring personality traits, in order to more fully understand people's experiences of and recovery from psychosis. Given the importance of integrating the experience of psychosis for longer term outcome (e.g. Tait et al., 2003), it remains a crucial task to identify those factors which may be predictive of this, and for services to provide support or intervention where necessary.

5.2 - Methodological Limitations

5.2.1 – Implications of small sample sizes: reduction in statistical power

Fewer participants were recruited than anticipated, especially with regard to the adult onset psychosis group. This has ramifications for the statistical analyses of the studies in that the small sample sizes result in a loss of statistical power. It is possible that had more participants been recruited significant differences may have been found between the groups with regard to the research hypotheses.

5.2.2 – Implications of small sample sizes: selective sampling?

In addition to the lack of statistical power, the small sample sizes, again especially that of the adult onset sample, raise the question as to whether the present samples accurately represent those with adolescent and adult onset psychosis. It was much harder to recruit participants to the adult onset group than anticipated, thus, as detailed in the methodology section, a number of avenues were pursued in order to maximise the number of participants.

From an epidemiological perspective, there are a large number of potential participants within the geographical area covered by NHS Lothian. Rough calculations based on a population of approximately 500, 000, of whom 1 in 100 of whom will experience psychosis at some point in their lifetime (Jablensky, 1997) with 20-50% doing so in adulthood (Sartorius et al., 1986) suggest that there are between 1000-2500 people who would be eligible for the present study.

Not all these individuals are under the care of mental health services, which reduces the number of potential participants for this study. Furthermore, due to constraints of time and other resources only half of the teams who provide services were approached in order to identify clients who may be willing to participate in the present research. That said, the present author met with over 40 staff on a number of occasions to discuss the purposes of the research and ways in which to identify and recruit clients to the study.

Despite the promising potential numbers, the following may account for the lack of actual adult onset participants. Firstly, although the proposal of the present research was generally well received by community mental health teams, in line with Harrop and Trower's (2003) findings, these services are generally overstretched. Consequently, despite best intentions, recruiting participants for a research project in which the team has no direct investment is not a high priority given the high workload which staff have to manage. On the advice of the teams themselves and given time constraints, the researcher took on a more passive role of being informed of clients who might fit research criteria or be willing to participate. In order to avoid difficulties in participant recruitment in future studies, the researcher may have to take on a more active role in identifying potential participants, rather than the passive role of being informed of clients who might be appropriate candidates for participation.

Secondly, a greater number of individuals declined to participate in the adult onset group compared to the adolescent onset group. It is unknown whether there are common reasons for this non-participation. However, an anonymous letter sent to the author by one adult onset non-participant described the frustration at being asked to fill in yet more questionnaires which completely failed to capture his experiences of psychosis and only served to bring up painful memories. This latter point was echoed by another adult onset non-participant. Although caution should be taken in generalising on the basis of limited evidence, these comments suggest that these individuals may have sought to encapsulate their experiences of psychosis, and, having sealed it over, do not wish to revisit it. It is possible that those who did not participate may have had a tendency for sealing over recovery styles, which would go some way to explaining the lack of this recovery style in the present findings.

Related to both recovery style and non-participation is keyworkers' selection of potential participants. In the adolescent onset sample, all young people who were seen by EPSS were approached, unless their difficulties prevented them participating or would have been exacerbated by participating, for the reasons outlined in section 2.4.3. Only one declined to participate, giving no reason. In the adult onset sample, keyworkers selected those clients who they regarded as likely to participate. This may have been dependent on clients' engagement with services. A sealing over recovery style has been found to associated with considerably lower service engagement (Tait et al., 2003), thus it could be that those who were not approached, possibly due to lower engagement with services, in addition to those who declined to participate, may have had sealing over recovery styles. This may account for the lack of sealing over found in the adult onset group. The unknown refusal rate does not clarify this issue – it would have been useful to have kept a record of those approached but who declined, as was done with the adolescent onset sample.

5.2.3 – Recovery style in the adolescent group

These reasons do not account for the lack of sealing over amongst the adolescent onset group, however. As the descriptive statistics indicate, only 3 young people had a tendency to seal over. Further inquiry reveals that two of these three had only recently experienced their first episode of psychosis. Sealing over has been shown to be a useful and adaptive response in the early stages of adjustment to psychosis (e.g. Jackson & Iqbal, 2000) which may account for two of these responses. Furthermore,

all of the young people seen by EPSS participate or have participated in psychosocial group interventions, have individual clinical psychological input, are in regular contact with community psychiatric nurses and/or psychiatrists. Thus, they tend to be engaged with services. Engagement, and the opportunity for support and intervention which it affords, is associated with a more integrative recovery style (Tait et al., 2003). This may therefore account for the lack of sealing over found in the adolescent onset sample.

Furthermore, given that recovery style is associated with better outcome, the present findings of the near universal integration recovery style among young people with psychosis could provide support for the benefits of early intervention in adolescent onset psychosis. There is debate about whether the current increase in service provision for individuals with severe mental health problems should be directed toward early psychosis – some question the evidence for intervention at this critical period, and regard early intervention as a drain on the budgets of generic community services (see Pelosi & Birchwood (2003) for discussion). While it is clear that resources are required for all services, and therefore it should and need not be a competition between services, the evidence for early intervention is only accumulating. Reviewing the literature, French and Morrison (2003) summarise its four potential benefits: less resistance and better attitudes towards treatment; more rapid and complete remission; a lower level of family burden; and improved recovery.

In the present study, the absence of sealing over beyond initial adjustment phases in the earlier onset group may well be testament to the effectiveness of early intervention. Given the greater fluidity of recovery style than originally thought (e.g. McGlashan, 1987), Thomson and colleague's (2003) proposal that "*psychoeducation and other therapeutic strategies* may be appropriate interventions especially in the early phase of illness" (p.35, emphasis added) appears to be borne out by the findings in the adolescent onset sample. Quilliams and Addington (2003) argue that knowledge about the facts of psychosis alone leads neither to more positive beliefs about illness nor to improved outcome. However, their study did not investigate the individualised meaning that people make when presented with the facts, as it were, of psychosis. It is possible that exploring with clients the impact on their well-being of adhering to prescribed medication regimens, or using cannabis for that matter, may

lead to more positive beliefs about illness than simply offering information on the pros and cons of medication and recreational drug use. This might most usefully be accomplished through psychotherapeutic input, be it in the form of psychosocial group interventions (e.g. Francey, 1999) or individual CBT approaches (e.g. French & Morrison, 2003). Focussing on the meaning individuals make of their experiences is key to promoting recovery in young people with psychosis.

5.3 – Conclusions

The present study sought to investigate the roles of adult versus adolescent onset, core beliefs, emotional dysfunction and traumatic symptomatology in adjustment to psychosis. The two best available options for assessing adjustment, given the design of the study, were employed. However, the Personal Beliefs about Illness Questionnaire (Birchwood et al., 1993) was found to have an unreliable internal structure in the present sample. The second measure, Recovery Style Questionnaire (Drayton et al., 1998), was employed as a continuous rather than discrete variable, in the light of recent research (Thompson et al., 2003) and the present findings, and thus remains to be validated. Accordingly results should be interpreted with caution. Further research exploring further the utility of both measures and the underlying constructs that they purport to measure is warranted so as to better understand people's experiences of psychosis and their subsequent adjustment.

The present research indicates that current anxiety is the best predictor of beliefs about illness, however, there is also an indication of a further model highlighting the roles of anxious and depressive core beliefs. The case of Donnie further emphasises this relationship, which clearly warrants further investigation, and some directions for this are proposed above.

Recovery style remains to be more fully understood. Given its importance for long term outcome, it warrants further research, both with those factors proposed here and with other mediators posited to have an influence on adjustment to psychosis, such as utilisation of social support, self concept and family dynamics.

It would be premature to conclude that, as no significant differences were found between adult and adolescent onset psychosis with regard to the measured variables, there are no differences between the two. The case of Donnie highlights the importance and utility of a developmental psychopathology perspective, which takes

into account both the developmental stage of an individual and his or her previous life experiences. Psychological interventions in psychosis and particularly early onset psychosis are currently a focus of much research interest (see McGorry (2004) for review) but in some respects remain relatively uncharted waters. In order to maximise the understanding of the experience of early onset psychosis and thus inform intervention, it may be beneficial to make use of more qualitative research methodologies. Series of case studies, exploring Harrop and Trower's theory of disordered adolescent development and other psychological models of psychosis, may be crucial steps to determining the best and most fruitful routes for large scale nomothetic research with generalisable results. Increased understanding of individuals' experience of psychosis will lead to more effective interventions and promote recovery.

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Appendix

Questionnaire pack including participant information sheet and consent form

Information sheet

Title of project: An investigation into how people think and feel about the experience of psychosis

Introduction

I am looking at the experiences of people with psychosis, in particular how they think and feel about their experiences. One of the aims of the study is to help develop ways that will improve care for mental health problems.

What is involved?

If you decide that you want to take part in the study, either I or your keyworker will ask you to complete some questionnaires. This will take about 45 minutes.

This study is entirely voluntary and although I hope that you will be happy to take part there is no obligation to do so. You have as long as you need to decide whether to take part in the study. If at any time you feel uncomfortable with participating in the study you can withdraw at any time. Not taking part will in no way influence your current or future treatment.

All the information you give will be confidential and anonymous. All the questionnaires will be identified by a research number, not by name, and all records will be kept in a locked filing cabinet.

MANY THANKS FOR YOUR HELP

If you have any further questions, please contact:

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Consent form

Title of project: An investigation into how people think and feel about the experience of psychosis

PERMISSION OF PARTICIPANT

I have read the information sheet and consent form and have had the opportunity to ask questions about them.

I give permission for the researcher to inform my GP of my participation in this study.

I understand that whether I participate or not will have no bearing on my treatment.

I understand that I have the right to withdraw from the study at any stage.

I agree to participate in this study.

Signature of respondent.....

Date.....

Name of respondent (please print).....

Signature of researcher.....

Independent advisor:

Independent Advisor

Ms. Jenny Munro

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Personal Information Sheet

Please write down answers to the following questions.

How old are you?
Are you male or female?
How old were you when you had your first episode of psychosis?
How long ago is it since your last episode of psychosis?
How many episodes of psychosis have you had?

The Personal Beliefs about Illness Questionnaire

Written below is a list of statements about your illness.

Please read them carefully and circle how much you agree or disagree with them.

1	My illness frightens me	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
2	I find it difficult to cope with my current symptoms	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
3	I am powerless to influence or control my illness	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
4	If I am going to relapse, there is nothing I can do about it	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
5	There must always have been something wrong with me as a person (to have caused this illness)	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
6	I am fundamentally normal, my illness is like any other	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
7	There is something about my personality that causes my illness	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
8	There is something strange about me which is responsible for my illness	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
9	I will always need to be cared for by professional staff	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
10	I am capable of very little as a result of my illness	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
11	My illness is too brittle or delicate for me to work or keep a job	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
12	I am embarrassed by my illness	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
13	My illness is a judgement on me	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
14	I can talk to most people about my illness	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
15	Society needs to keep people like me who have this illness, apart from everyone else	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
16	People like me must be controlled by psychiatric services	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>

The Recovery Style Questionnaire

Written below is a list of statements about your illness.

Please read them carefully and circle whether you agree or disagree.

1	There was a gradual build-up to me becoming ill	<i>Agree</i>	<i>Disagree</i>
2	My illness is not part of my personality	<i>Agree</i>	<i>Disagree</i>
3	I am responsible for what I think when I am ill	<i>Agree</i>	<i>Disagree</i>
4	I am not interested in my illness	<i>Agree</i>	<i>Disagree</i>
5	My illness taught me new things about myself	<i>Agree</i>	<i>Disagree</i>
6	I need help to solve the problems caused by my illness	<i>Agree</i>	<i>Disagree</i>
7	My illness was caused by my difficulties in coping with life	<i>Agree</i>	<i>Disagree</i>
8	I have had a nervous breakdown	<i>Agree</i>	<i>Disagree</i>
9	I can see positive aspects of my illness	<i>Agree</i>	<i>Disagree</i>
10	My illness has had a strong impact on my life	<i>Agree</i>	<i>Disagree</i>
11	I am not frightened of mental illness	<i>Agree</i>	<i>Disagree</i>
12	I liked some of the experiences I had when I was ill	<i>Agree</i>	<i>Disagree</i>
13	My illness has helped me find a more satisfying life	<i>Agree</i>	<i>Disagree</i>
14	My illness came on suddenly and went suddenly	<i>Agree</i>	<i>Disagree</i>
15	My illness is part of me	<i>Agree</i>	<i>Disagree</i>
16	I am not responsible for my actions when I am ill	<i>Agree</i>	<i>Disagree</i>
17	I am curious about my illness	<i>Agree</i>	<i>Disagree</i>
18	I understand myself better because of my illness	<i>Agree</i>	<i>Disagree</i>
19	I can manage the problems caused by my illness, alone	<i>Agree</i>	<i>Disagree</i>
20	Others are to blame for my illness	<i>Agree</i>	<i>Disagree</i>
21	I have had a medical illness	<i>Agree</i>	<i>Disagree</i>
22	Nothing good came from my illness	<i>Agree</i>	<i>Disagree</i>
23	My illness has had little effect on my life	<i>Agree</i>	<i>Disagree</i>
24	I am frightened of mental illness	<i>Agree</i>	<i>Disagree</i>
25	I didn't like any of the unusual experiences I had when I was ill	<i>Agree</i>	<i>Disagree</i>
26	It's hard to find satisfaction with life since I was ill	<i>Agree</i>	<i>Disagree</i>
27	My illness came on very suddenly	<i>Agree</i>	<i>Disagree</i>
28	My illness is alien to me	<i>Agree</i>	<i>Disagree</i>
29	I am responsible for my thoughts and feelings when I am ill	<i>Agree</i>	<i>Disagree</i>
30	I don't care about my illness, now that I am well	<i>Agree</i>	<i>Disagree</i>
31	I want to be the person I was before my illness	<i>Agree</i>	<i>Disagree</i>
32	Others can help me solve my problems	<i>Agree</i>	<i>Disagree</i>
33	My illness was caused by stress in my life	<i>Agree</i>	<i>Disagree</i>
34	I have suffered an emotional breakdown	<i>Agree</i>	<i>Disagree</i>
35	Being ill had good parts too	<i>Agree</i>	<i>Disagree</i>
36	I'm not really interested in my illness	<i>Agree</i>	<i>Disagree</i>
37	I liked some of the unusual ideas I had when I was ill	<i>Agree</i>	<i>Disagree</i>
38	My life is more satisfying since my illness	<i>Agree</i>	<i>Disagree</i>
39	My attitude to mental illness is better now, than before I was ill	<i>Agree</i>	<i>Disagree</i>

Impact of Event Scale

On _____, you experienced _____
(date) (life event, for example: hospital admission, psychotic episode)

Below is a list of comments made by people after stressful life events. Please read each comment carefully and circle how true each one was for you **during the past week**. If they did not occur at all during that time, please circle "not at all".

- | | | | | | |
|----|---|-------------------|---------------|------------------|--------------|
| 1 | I thought about it when I didn't mean to | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 2 | I avoided letting myself get upset when I thought about it or was reminded by it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 3 | I tried to remove it from my memory | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 4 | I had trouble falling asleep, because of pictures or thoughts about it that came into my mind | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 5 | I had waves of strong feelings about it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 6 | I had dreams about it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 7 | I stayed away from reminders of it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 8 | I felt as if it hadn't happened or it wasn't real | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 9 | I tried not to talk about it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 10 | Pictures about it popped into my mind | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 11 | Other things kept making me think about it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 12 | I was aware that I still had a lot of feelings about it, but I didn't deal with them | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 13 | I tried not to think about it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 14 | Any reminder brought back feelings about it | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
| 15 | My feelings about it were kind of numb | <i>Not at all</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |

HADS

This questionnaire asks questions about how you feel.

Read each item below and underline the reply which comes closest to describing how you have been feeling in the past week.

Don't take too long over your replies, your immediate reaction to each item will probably be more accurate than a long, thought-out response.

I feel tense or wound up

Most of the time
A lot of the time
From time to time, occasionally
Not at all

I feel as if I am slowed down

Nearly all the time
Very often
Sometimes
Not at all

I still enjoy things I used to enjoy

Definitely as much
Not quite so much
Only a little
Hardly at all

I get a sort of frightened feeling like "butterflies" in the stomach

Not at all
Occasionally
Quite often
Very often

I get a sort of frightened feeling as if something awful is about to happen

Very definitely and quite badly
Yes, but not too badly
A little, but it doesn't worry me
Not at all

I can enjoy a good book or radio or television programme

Often
Sometimes
Not often
Very rarely

I can laugh and see the funny side of things

As much as I always could
Not quite so much now
Definitely not so much now
Not at all

I feel restless as if I have to be on the move

Very much indeed
Quite a lot
Not very much
Not at all

Worrying thoughts go through my mind

A great deal of the time
A lot of the time
Not too often
Very little

I look forward with enjoyment to things

As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all

I feel cheerful

Never
Not often
Sometimes
Most of the time

I get sudden feelings of panic

Very often indeed
Quite often
Not very often
Not at all

I can sit at ease and feel relaxed

Definitely
Usually
Not often
Not at all

I have lost interest in my appearance

Definitely
I don't take as much care as I should
I may not take quite as much care
I take just as much care as ever

DAS-24

This scale lists different attitudes or beliefs which people sometimes hold.

Please read each statement carefully and **circle** how much you agree or disagree with what it says.

To help you decide on your answer, simply keep in mind what you are like **most of the time**.

1	If I fail partly, it is as bad as being a complete failure	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
2	If others dislike you, you cannot be happy	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
3	I should be happy all the time	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
4	People will probably think less of me if I make a mistake	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
5	My happiness depends more on other people than it does on me	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
6	I should always have complete control over my feelings	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
7	My life is wasted unless I am a success	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
8	What other people think about me is very important	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
9	I ought to be able to solve my problems quickly and without a great deal of effort	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
10	If I don't set the highest standards for myself, I am likely to end up a second rate person	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
11	I am nothing if a person I love doesn't love me	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
12	A person should be able to control what happens to him/her	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
13	If I am to be a worthwhile person, I must be truly outstanding in at least one major respect	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
14	If you don't have other people to lean on, you are bound to be sad	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
15	It is possible for a person to be scolded and not get upset	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
16	I must be a useful, productive, creative person or life has no purpose	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
17	I can find happiness without being loved by another person	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
18	A person should do well at everything he/she undertakes	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
19	If I do not do well all the time, people will not respect me	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
20	I do not need the approval of other people in order to be happy	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
21	If I try hard enough, I should be able to excel at anything I attempt	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
22	People who have good ideas are more worthy than those who do not	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
23	A person doesn't need to be well liked in order to be happy	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>
24	Whenever I take a chance or risk, I am only looking for trouble	<i>Totally agree</i>	<i>Agree very much</i>	<i>Agree slightly</i>	<i>Neutral</i>	<i>Disagree slightly</i>	<i>Disagree very much</i>	<i>Totally disagree</i>

MCQ-30

This questionnaire is concerned with beliefs people have about their thinking. Listed below are a number of beliefs that people expressed. Please read each item and say how much you generally agree with it by circling the appropriate number.

Please respond to all the items, there are no right or wrong answers.

	<i>Do not agree</i>	<i>Agree slightly</i>	<i>Agree moderately</i>	<i>Agree very much</i>
1 I do not trust my memory	1	2	3	4
2 I have a poor memory	1	2	3	4
3 I have little confidence in my memory for actions	1	2	3	4
4 I have little confidence in my memory for places	1	2	3	4
5 I have little confidence in my memory for words and names	1	2	3	4
6 My memory can mislead me at times	1	2	3	4
7 Worrying helps me to get things sorted out in my mind	1	2	3	4
8 Worrying helps me to cope	1	2	3	4
9 I need to worry in order to work well	1	2	3	4
10 Worrying helps me to solve problems	1	2	3	4
11 I need to worry in order to remain organised	1	2	3	4
12 Worrying helps me to avoid problems in the future	1	2	3	4
13 I am constantly aware of my thinking	1	2	3	4
14 I pay close attention to the way my mind works	1	2	3	4
15 I think a lot about my thoughts	1	2	3	4
16 I constantly examine my thoughts	1	2	3	4
17 I monitor my thoughts	1	2	3	4
18 I am aware of the way my mind works when I am thinking through a problem	1	2	3	4
19 My worrying thoughts persist, no matter how I try to stop them	1	2	3	4
20 When I start worrying I cannot stop	1	2	3	4
21 I could make myself sick with worrying	1	2	3	4
22 I cannot ignore my worrying thoughts	1	2	3	4
23 My worrying could make me go mad	1	2	3	4
24 My worrying is dangerous for me	1	2	3	4
25 If I could not control my thoughts, I would not be able to function	1	2	3	4
26 Not being able to control my thoughts is a sign of weakness	1	2	3	4
27 I should be in control of my thoughts all of the time	1	2	3	4
28 It is bad to think certain thoughts	1	2	3	4
29 If I did not control a worrying thought and then it happened, it would be my fault	1	2	3	4
30 I will be punished for not controlling certain thoughts	1	2	3	4