"AN EXPLORATION OF THE ROLE OF COGNITIVE, BEHAVIOURAL AND EMOTIONAL PROCESSES IN PEOPLE WITH PSYCHOTIC DISORDERS WHO COMMIT OFFENCES"

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DECLARATION

I DECLARE THAT THE WORK CONTAINED IN THIS THESIS IS MY OWN AND HAS BEEN ENTIRELY COMPOSED BY MYSELF. THIS THESIS HAS NOT BEEN SUBMITTED FOR ANY OTHER DEGREE OR PROFESSIONAL QUALIFICATION OTHER THAN THE DEGREE SPECIFIED HERE.

SIGNED

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ABSTRACT

There is growing research evidence about the role of cognitive, behavioural and emotional factors in psychotic disorders. This has led to the development of successful assessment and treatment packages for people with psychosis based on the CBT model. Research has attempted to use this model to examine crimes committed by people with psychotic disorders. This relationship remains controversial and is widely debated. The current study aimed to draw together the literature on CBT in psychosis and on mentally disordered offenders to further investigate the nature of any interaction. This has implications for successful outcome with this population. It was hypothesised that cognitive, behavioural and emotional measures would differ across three groups comprising non-offenders and people with minor and major offending histories. Twenty six subjects were recruited from a secure psychiatric forensic unit and general psychiatric services; all subjects completed five measures. The Locus of Control questionnaire and Conviction of Beliefs scale were used to examine cognitive processes; the Coping Responses Inventory and clinical interview were used to examine behavioural processes and the Beck Depression Inventory – 2nd edition and Beck Anxiety Inventory were used to examine emotional processes. Analyses using parametric and non-parametric tests were not significant; results are interpreted in light of methodological difficulties. Results were discussed in the context of relevant literature, clinical utility and future research.

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CHAPTER 1: INTRODUCTION

1.1 Background to the Study

Clinical Psychologists now form an important part of multi-disciplinary teams; working both with people with chronic mental disorders and with people who have offended. In forensic settings, there is a huge clinical and legal emphasis on mentally disordered offenders; a significant majority of whom have a psychotic disorder. Questions are raised as to the role in which these mental disorders may play in the offending behaviour. This remains a topical issue in the media and is often misrepresented. If the relationship between psychotic disorders (also referred to as psychosis herein) and offending can be empirically established, this knowledge would have implications both for successful treatment of the disorder and for minimising the risk of future offending by the person.

In light of this growing awareness of the role of clinical psychology within forensic settings, this study is designed to enhance understanding of psychological factors involved in offending among admissions to the Blair Unit, a low security forensic unit within Royal Cornhill Hospital, Aberdeen. The study is designed using the cognitive behavioural model; this has proven the most prolific in advancing knowledge of assessment and treatment of psychotic disorders. Specifically, the current study will focus on specific cognitive, behavioural and emotional processes that have been implicated in psychosis and will attempt to explore offending behaviour in people with

psychosis with reference to these processes. It is hoped that the results can help inform current practice and help design appropriate service delivery to this population.

1.2 Nature of Psychosis

It is important to have a clear understanding of psychotic disorders before research can be conducted to examine how these disorders may influence other factors, such as the likelihood of committing offences.

1.2.1 Prevalence

Power & McGorry (1999) discuss variations in prevalence studies of psychotic disorders. These variations are partly due to the differing nature of diagnostic criteria used and how individual clinicians interpret these. Patients do differ greatly in the presentation of their symptomatology. Psychotic disorders can also be difficult to assess due to confounding factors such as substance abuse and the existence of co-morbid symptoms such as the affective disorders; these will be explored further in the current study.

However, Power & McGorry (1999) feel, as other researchers in the field do, that there are two studies that have utilised adequate methodology producing particularly reliable results. Jablensky et al (1992) report a prevalence of between one and six cases per 100,000 of the population worldwide for schizophrenia. In general, prevalence is lower in the developing world. This is believed to be linked to issues of industrialisation and available medical care. Daly, Webb & Kaliszer (1996) report a prevalence rate of eight

cases per 100,000 for manic type psychosis. Reviews of studies have found a lifetime risk of developing psychosis as one per cent (Frith, 1995 and Jackson & Birchwood, 2001). As Jackson & Birchwood point out, this means there are at least 100,000 people with psychosis living in the UK. Both of the clinicians' guides, ICD-10 (1999) and DSM-IV (1994) report a worldwide prevalence of between 0.5% and 1.0% for psychotic disorders.

1.2.2 Demography

Hafner et al (1995) report that onset of psychosis is usually in adolescence or early adulthood with a peak incidence of between 25 and 30 years. Generally, the range is reported as between 15 and 45 years but there have been rare cases of documented psychosis in middle childhood or old age (Frith, 1995). There have been difficulties in establishing whether these are true psychotic presentations or a manifestation of psychotic symptoms due to another illness.

Schizophrenia (the most common psychotic disorder) occurs equally in men and women (Frith, 1995). However, women have a later age of onset, usually in the 30's. Significant differences in age of onset between the sexes have been found (Hafner et al, 1995). There are twice as many men between the ages of 15 and 24 years diagnosed with psychosis. This is believed to be because men and women mature at different developmental levels and have different stresses in their life events at different ages. For example, women have to cope with child-bearing and compartmentalising their home and work lives more than men. Men are more likely to be exposed to work related stress

and are more likely to be single and living at home at the peak incidence years. This also relates to other socio-cultural factors such as higher rates of substance abuse in men (Power & McGorry, 1999).

Jackson & Birchwood (2001) discuss the social problem of psychosis. There are higher reported cases of people diagnosed with schizophrenia from lower socio-economic classes and urban areas. This is believed to reflect societal factors more than true prevalence. For example, stigmatisation at diagnosis may be more of an issue in the upper socio-economic classes. People who live in urban areas are exposed to different stressors such as poverty, in the context of a faster paced lifestyle and are more exposed to problems such as the availability of illicit drugs. In addition, the growth of care in the community means that there are fewer people with psychosis hospitalised now than in the 1960's and before.

1.2.3 Course of Psychosis

A study by Bleuler (1972) quoted in Barham & Hayward (1990) asserts that the clinical course of psychosis varies greatly across individuals. This is in contrast to the widely held stereotype that psychosis is a life long illness. This study concluded that about 25% of individuals with schizophrenia recover completely. Only 10% of individuals live with a severe diagnosis for life and remain largely hospitalised. Approximately 65% of people alternate between acute phases of their illness and remission phases. In general, psychosis stops progressing within five years of onset. The most common form of treatment is by neuro-leptic medication. However, approximately 30-40% of sufferers

still experience psychotic symptomatology despite complying with medication (Birchwood & Tarrier, 1992).

The importance of early intervention in determining the course of psychosis has been researched by Birchwood, MacMillan & Smith (1994). These researchers have drawn on the empirical evidence and demonstrated that if intervention can be given before or during the first episode there is a significantly greater reduction in an individual's vulnerability to future relapses. This is in part because the individual learns to monitor early signs of their illness and therefore seek help quicker. The importance of early intervention is also hypothesised to 'catch' people while still in the prodromal (early) stage of their illness before full symptom manifestation and therefore while they are easier to treat (Birchwood, 1995). Birchwood, MacMillan & Smith also discuss the importance of the "duration of untreated psychosis" in effecting the course of the illness. In later writings, Birchwood with other authors had began to refer to this as the "critical period" and asserted that the physiological, psycho-social and cognitive processes in psychosis are amenable to change and development at this stage (Birchwood, Todd & Jackson, 1998; Birchwood, 1999 and Birchwood & Spencer, 2001). Although these studies were not conducted with an offending population, they are of relevance to the current study because they have been prolific in advancing knowledge of the psychological processes in psychosis. This study aims to explore the nature of this interaction between psychological processes in psychosis and to examine whether these differ in people who do and do not offend.

Jackson & Birchwood (2001) discuss a number of factors that account for the variation in course and recovery rates. As well as factors of the individual, the family and culture as a whole can all impact on the type of care and understanding people with psychosis receive and thus their consequent recovery. This has led to many researchers talking about psychosis in a psycho-social context (Barham & Hayward, 1990 and Drury, 1994).

1.2.4 Psychotic Disorders

> ' "How could you, a mathematician, a man devoted to reason and logical proof... how could you believe that extraterrestrials are sending you messages? How could you believe that you are being recruited by aliens from outer space to save the world?"..... .....
> "Because", Nash said slowly in his soft, reasonable southern drawl, as if talking to himself, "the ideas I had about supernatural beings came to me the same way that my mathematical ideas did. So I took them seriously."' (Nasar, 1998, p. 11)

This conversation opens a biography of John Forbes Nash Jnr written by Nasar. John Nash is a highly influential mathematician who was diagnosed with schizophrenia in 1954 at the age of 31 years. Following thirty years of illness, Nash went into remission and received the Nobel Prize for Economics. His account of his psychosis as written by Nasar provides a startling account into what it is truly like to live with psychosis. He describes it as alternating between periods of rationality and a delusional belief system.

On reviewing the literature, it becomes clear that the bulk of research has focused on schizophrenia as the most common of the psychotic disorders. However, it is important to clarify that there are a range of psychotic disorders that can be differentially diagnosed. ICD-10 (1999) provides the clinician with an overview of all the psychotic

disorders. These are categorised as Schizophrenia, Schizotypal and Delusional disorders (both persistent and transient). There are other disorders that can have a psychotic component, for example, mania; bi-polar affective disorder and lewy body dementia. The distinction and diagnosis given to an individual depends on the absence or presence of symptoms and on the dominance of some symptoms over others. However, for clinical and research purposes, all of the psychotic disorders share the same underlying symptomatology and we must distinguish these from other mental health disorders which may have a psychotic aspect in their presentation.

Historically, there has been much debate as to how to classify the nature of psychosis. Boyle (1990) discusses the development of earlier concepts of schizophrenia by Kraepelin (1896) and Bleuler (1911). Kraeplin presented manic-depressive illness and dementia praecox as two new classifications of psychosis. He presented these as clearly diagnosable syndromes based on similarities in their onset, course and outcome. Bleuler applied a psycho-analytic framework to discuss what he termed schizophrenia (meaning "split mind"). He claimed the origins of the disorder lay in the loosening of associations between a person's thoughts, emotions and volition. Boyle (1990) goes on to argue that while it is useful to have a classification system for psychosis, effectively neither Kraeplin nor Bleuler produced valid and reliable research. Bentall (1990, a) provides a balanced review of the empirical data and concludes with Boyle that scientific validity and reliability were confounded even further by the introduction of diagnostic classification. This is attributed to the differing presentations of psychosis and the difficulties this causes in the concept of a distinctive syndrome with a known causal

origin. Later research moved on to a view of psychosis as a group of symptoms rather than as a unitary syndrome (Bentall, 1990, a and Frith, 1995).

Bentall (1990, a) further argues in this article that the clinical norm is more likely to be mixed presentations of both psychotic and non-psychotic symptoms. Frith (1995) also argues for a symptom approach to psychopathology. He distinguishes the signs (behaviour) and symptoms (experience) of schizophrenia. Essentially, all psychotic disorders share underlying themes of hallucinations (false perceptions), delusions (false beliefs) and disordered speech and behaviour. These are referred to as positive symptoms. The negative symptoms of psychosis refer to a lack of behavioural features comprising poverty of speech, action, thought, emotion and social interactions (Frith, 1995). It is the negative symptoms that can make a differential diagnosis of psychosis difficult. The classification of symptoms into positive and negative is still viewed highly today among clinicians and researchers. Within this group of symptoms, patients can present with varying degrees of psychotic illness and be treated appropriately.

A good description of psychosis is quoted in van de Loo & Eurelings-Bontekoe (1990):

> 'Arieti (1974, 1983) describes psychotic symptom formation as a process of falling out of the world of reality into the world of psychosis' (p. 227)

1.3 Aetiology of Psychosis

After over 100 years of research, there is still no proven aetiology of psychosis.

Research has focused on biological and psychological attempts to explain the origin of the illness. It is important to consider this aetiology when trying to establish a causal link between psychotic disorders and other areas such as offending behaviour. Aetiology may help to explain why individuals react differently to the experience of having a psychotic disorder, for example, why some offend and others do not.

1.3.1 Biological Theories

The traditional medical or psychiatric school of thought points to the notion of psychosis as a biologically determined illness which results in psychotic symptoms. This has been the dominant view of schizophrenia in the past 100 years (Jackson, 1990). Research has focused on neuro-anatomical, genetic and biochemical factors as causes of psychosis. Enlarged ventricles have been found in patients with schizophrenia (Nyback et al, 1982; Schulz et al, 1983 and Turner, Toone & Brett-Jones, 1986). In contrast, a study by The Scottish Schizophrenia Research Group, MacDonald & Best (1989) examining tomography brain scans of people with schizophrenia did not find significant differences in the ventricles of patients but did find sulcal enlargement and believe that this may be causal in first psychotic episode. The differences in studies may be due to variations in the patients or the technology used. Joseph (1996) discusses changes in the temporal and pre-frontal lobes of people having hallucinations. Differences in frontal lobe functioning have been demonstrated in psychometric testing but this may be another symptom of the disorder itself rather than a causal link (Van de Loo & Eurelings-Bontekoe, 1990). Frontal lobe changes have also been hypothesised to occur in some offenders (Moir &

Jessel, 1995). It has proven difficult to establish whether changes in brain structure of people with psychosis is causal or as a result of the psychosis.

Advances in molecular genetics have offered some helpful insights to the aetiology of genetics (Bentall, 1990, b). For example, twin studies have shown that there is an inherited risk of a vulnerability to schizophrenia. Research (e.g. - Lander, 1988) shows that genetic factors are important in the development of schizophrenia but the results must be interpreted with caution as no stringent methodology has been established for studying this. The research also fails to explain why there are people with a genetic vulnerability to schizophrenia who do not develop the illness.

An overview of the evidence for a bio-chemical aetiology of psychosis is presented by Chatterjee & Lieberman (1999). These studies have focused on the 'Dopamine Hypothesis'; this states that people with schizophrenia have an antagonism in their dopamine receptor (a neurotransmitter). This is associated with the use of neuro-leptic medication to treat psychosis. This has led researchers to try and establish a cause of schizophrenia as an overproduction of dopamine. Chatterjee & Lieberman describe these studies as promising but in the early stages and therefore, not conclusive. Again, it is difficult to establish whether this observed difference is cause or effect in the development of psychosis.

1.3.2 Psychological Theories

Pilgrim (1990) argues that we can no longer accept a bio-deterministic view of psychosis. Although psychiatric studies have improved on some of the methodological and diagnostic difficulties discussed in earlier studies, Pilgrim believes the way forward lies in the medical establishments' growing recognition of the role of psychological factors in the development and treatment of psychosis. He argues that psychiatry has not produced any unitary model to explain the cause of psychosis.

There have been attempts to understand psychosis within a few models of psychology. However, arguably the most successful of these has been cognitive behaviour therapy, although this too is still in early stages of development (Haddock & Tarrier, 1998). Haddock & Tarrier state that there has been a lack of meaningful consensus among the differing theories that have tried to explain the causes of psychosis. As a result, psychology in general has tried to focus more on peoples' psychotic symptoms and less on arriving at a theory of aetiology. The focus of this introduction will be on the cognitive behavioural model as this is the model used for the current study. However, brief mention will be given of other theories.

The earliest psychological theories of psychosis were psycho-analytic, as discussed by Kingdon & Turkington (1994). These were expanded on by researchers like Arieti (1979), who believed psychotic symptoms were generated from anxiety at possibly expressing unconscious wishes. This was linked to Freudian ideas of the existence of a

stable ego in people without mental health problems. There has been no research evidence to support ideas such as these.

There have also been theories of psychosis from within a social framework. Bateson, Jackson, Haley & Weakland (1956) proposed a theory of schizophrenia which they called the 'double-bind hypothesis'; this was based on communications analysis. Their theory suggested that schizophrenia develops when people find themselves in a paradoxical situation with a family member in that no matter what they do, they cannot win; schizophrenia is seen as the result of this. These researchers do not have any empirical evidence in their paper to support this double-bind hypothesis and as a result, it has not been widely accepted.

Researchers like Laing & Esterson (1964) also attempted to demonstrate schizophrenia as developing within a family context. This led onto later studies of expressed emotion in families of people with psychosis. Although there has been evidence to suggest that families of people with psychosis differ in their emotional style, the evidence cannot conclusively establish this as a causal link. Kingdon & Turkington (1994) believe that the emphasis on blaming the family or society has led to limited acceptance of such theories.

Strauss, Rakfeldt, Harding & Lieberman (1989) have introduced a "stress-vulnerability" model of psychosis which draws together biological, social and psychological factors. People are seen as having differing stress thresholds that can make some individuals

vulnerable to the development of schizophrenia if their threshold is stretched. Other factors also play a role in this, for example social support and personality. Kingdon & Turkington (1994) believe this is a useful framework for understanding psychosis. Indeed, there has been a growth in stress-vulnerability models and they now have empirical validity and reliability.

There have been many theories of psychosis that have a base in cognitive behavioural ideas. These will be discussed further in section 1.5, with reference to the current study. In general, these theories share the idea that psychotic symptoms occur as a breakdown in the individual's cognitive processes and are maintained or exacerbated by the individual's behaviour. An important theory was developed by Frith (1995), who developed a theory of schizophrenia in which he stated that there is a deficit in social understanding that leads to people with schizophrenia seeing the world as unusual. This then forms the basis of their interactions and subsequent psychotic symptoms. Unlike other cognitive theories, Frith gave reference to a biological basis for psychosis by postulating neurological areas that may be implicated in psychosis. Frith's theory is still widely respected, although as stated earlier, the emphasis on a biological determinant of psychosis has proven somewhat more controversial.

Trower & Chadwick (1995) proposed a theory that they feel could be empirically tested, unlike other theories in the past. This theory has its roots in cognitive, emotional and behavioural aspects of psychosis within a broader context of the individual. These researchers introduce two types of paranoia which they feel are distinct and supported

both conceptually and empirically; they call these "poor me" and "bad me" paranoia. Trower & Chadwick (1995) further argue that these two types of paranoia lead to a theory that can make claims both across people as a whole and as individuals. Namely, that the two paranoia types are both forms of threat to the individual resulting in the person producing one of two defence strategies to help them cope with this threat. This will determine the nature of the person's symptoms further. This theory is attractive in that it can be empirically tested and is based on drawing together some of the theoretical frameworks as discussed earlier.

In summary, there are a large number of theories that have attempted to explain, classify and aid diagnosis of psychotic illnesses. Broadly speaking, these theories divide into biological and psychological although there are researchers who have attempted to draw on threads from all these areas (eg - Frith, 1995). This study is concerned with the CBT model of understanding psychosis.

The nature of psychotic disorders has now been established; the introduction to this study will now turn to a review of the literature on the mechanisms between psychosis and criminality. The focus of the later part of this introduction will be on specific factors that have been implicated in this relationship from the cognitive-behavioural framework and which form the theoretical underpinning of the hypotheses under examination.

1.4 Psychosis and Criminality

1.4.1 Mental Disorders and the Legal System

In Scotland, people with mental disorders can be admitted compulsorily to hospital under various sections of the Mental Health (Scotland) Act (1984) for assessment, treatment or emergency procedures. The Governments' 1990 code of practice explains the implications of this Act. This detention must be carried out by one or two medical practitioners (depending on the relevant section) and overseen by a Mental Health Officer (MHO) with strict adherence to the guidelines. A similar process exists for people with mental disorders who commit crime(s). In the case of criminality, a person can also be remanded to hospital for assessment under sections of the Act, by either the Crown or Magistrates' Courts, with advice from a medical doctor. This usually applies when the Court is trying to determine if the person is fit to plead in their defence at a trial. At this time the Court may also request psychiatric and psychological reports to help determine mitigating circumstances to the crime and future sentencing and prognosis issues.

Differences between the Scottish and English legal systems are discussed by Gudjonsson & Haward (1998). In Scotland, there is greater legal authority for determining unfitness thus these issues are seen commonly in Scotland. These authors believe health care workers are improving in their ability to assess this and they estimate only 20 defendants per year are found unfit to plead. Therefore, when the case goes to Court it is tried under the Criminal Procedure (Scotland) Act 1995. The Court can invoke a number of sections under this Act to deal with the defendant post conviction. These usually involve a period

of compulsory treatment for the safety of the patient and protection of others and the patient is placed in a secure hospital. Again, evidence is required from two medical practitioners. The Court may also put restrictions on the patient's activities during their stay in hospital, to be reviewed by the Secretary of State. This Act also has transfer sections that can be invoked if a person needs to be transferred between hospital and prison on grounds of their mental health. The Mental Welfare Commission for Scotland oversees all of these procedures. In their 2000 guide for patients, this Commission discusses the various sections of the Acts and how it applies to patients. Their role is primarily to see that patients' civil liberties are being met.

Gudjonsson & Haward (1998) further point out that in some circumstances the person may be placed on probation and placed back in the community. Therefore, it is important to assess the risk of that person re-offending and that people working in forensic settings have a thorough understanding of how a mental disorder can affect the likelihood of a person committing a crime. This process may begin in adolescence.

1.4.2 Moral Development

There are many theories of how morality develops. Shaffer (1994) distinguishes three features of moral development as moral affect, moral reasoning and moral behaviour. This can be understood within a cognitive behavioural framework by the work of both Piaget (1965) and Kohlberg (1984). Essentially, moral development is proposed to occur in stages, each of which must be achieved sequentially. This development is believed to occur throughout childhood and adolescence. It is important to understand this

developmental process when considering a link between psychosis and criminality. As stated earlier, onset of psychosis commonly occurs in adolescence, especially in males. There is no clear research evidence to establish how much this early onset of psychosis disrupts a person's moral development.

There are many factors that influence moral, cognitive and personality development thus increasing the likelihood of an individual committing a violent crime (Berkowitz, 1993). Berkowitz believes mental illness to be one of these factors. Other influences include familial and socio-cultural influences.

1.4.3 Association between Mental Disorders and Crime

> 'Not all offenders are mentally disordered and not all those who suffer mental disorder commit crimes, but there is a group of offenders who display mental disorder at the time of their offending or subsequently during a sentence of imprisonment and this group, though small, tends to attract considerable attention. This may reflect the unease and fear which people feel when dealing with those suffering from mental illness or learning disabilities and produces a debate over whether offenders in this category are 'mad, bad or merely sad' '. (Harrower, 1998, p. 35)
>
> The quote of 'mad, bad or merely sad' is attributed by Harrower to Prins (1994).

This is a quote that accurately sums up the debate in this area. Harrower (1998) goes on to state that criminal behaviour is higher in the psychiatric population but difficulties have arisen in trying to establish causal links in this area. Maden (1999) reviewed books written about "high profile" murders committed by schizophrenics. This author highlights a discrepancy between the reality of criminality in mentally disordered people and the public perception that all people with psychosis (as the major mental disorder

most studied in this regard) are dangerous, which the media may perpetuate. Maden states that psychiatry was slow to recognise the statistical association between schizophrenia and violence and as a result, treatment has not been aimed at appropriate levels to meet the needs of this population and thus reduce recidivism rates. In order to do this, an understanding of the causal factors involved in the commission of crimes by people with a major mental disorder, such as psychosis, must be understood.

This slowness in recognising the association between schizophrenia and violence that Maden (1999) refers to, can be seen by a review of older research. Guze, Goodwin & Crane (1969) conducted a follow up study of 176 convicted felons. They concluded that psychiatric disorders including schizophrenia and manic-depressive disorder (now called bi-polar affective disorder) had the same incidence in criminal and non-criminal populations. Therefore, psychosis was not a risk factor for criminality. These researchers felt that substance abuse was a more significant indicator of crime. This study did not have stringent methodology, for example, diagnostic criteria and interpretation of interviews were decided by each researcher and therefore open to differing opinions. In addition, no inferential statistics were used to examine the different factors.

Mitchell (1999) reviewed studies that attempt to illustrate a link between mental illness and criminality and compared them on indices of diagnosis and violence. Mitchell concluded that there is a research link between mental disorder and violent offending. However, a caveat is added about assuming that all mentally ill people are capable of

violence and unpredictability. This can lead to misrepresentation of the level of risk involved and stereotyping of all mentally ill people as a threat to public safety.

In a birth cohort study of 324,401 Danish people followed up for 43 years, Hodgins, Mednick, Brennan, Schulsinger & Engberg (1996) found that people with a history of psychiatric hospitalisation were indeed more likely to have been convicted of a crime (both sexes). These researchers argue for the validity of the study due to its good design and to the fact that in Denmark the legal system for conviction is separate from the treatment of people with mental disorders. They discuss similar studies that have also re-produced their findings.

There is research evidence that illustrates a significant link between criminality and mental disorders. How does this relate specifically to offending and psychosis? There is a lack of research pinpointing the exact causal factors in crimes committed by people with mental disorder. The research is not conclusive enough to say that mental disorder per se causes people to commit crimes. There are a vast amount of patients in psychiatric care who have never committed a crime. Hodgins (1998) calls for a clinical skills approach to help determine the risk factors for offending in people with mental illness and to design treatment programs. Dietz (1994) is one clinician who has tried to produce a classification of offenders whom are mentally ill, in order to inform current practice. This researcher identified five patterns among mentally disordered offenders and each pattern is unique to offenders who fit the psychiatric criteria within. Of relevance to this study is pattern one, which Dietz describes as offenders for whom crime is a response to

psychotic symptoms, most often delusions or hallucinations. There is a body of research evidence to support the notion of a link between criminality and mental disorders, psychosis in particular. However, there is a lack of research evidence that pinpoints exactly what nature this notion of responding to psychotic symptoms takes. For example, are some symptoms more pertinent than others and what causes some people to respond in a non-criminal way? It is therefore of particular importance to clarify the factors specific to psychotic disorders and criminality.

1.4.4 Psychotic Disorders and Crime

> 'It is clear that most paranoid schizophrenic patients will *not* commit violent crimes, and we believe that by better identifying the few who are likely to be dangerous, we will destigmatize the majority who are no more dangerous than the general population.'
> (Shore, Filson & Johnson, 1988, p. 279)

This quote sums up the literature on psychosis and criminality in 1988. However, as the following review of the relevant literature suggests, this is still applicable today. A review of the literature illustrates that there is now an established connection between psychosis and offending. However, the determining factors of this connection are not fully understood and as a result, the risk factors involved in psychosis and offending has been misrepresented at times. This will be explored further.

Why is this an important area of research and how has it been misrepresented at times? In a letter to the editor of the journal, Archives of General Psychiatry, Wesseley & Castle (1998) express their disappointment that even scientists are being caught up in the

recent media labelling of people with psychosis as being criminals. In their study of the population, patients with schizophrenia spent a total of 7800 years in the community after the onset of psychosis. During those years, only one homicide was committed (n=94). However, this study did not look at other crimes or quote comparable figures for attributable risk. It estimated that crime in the USA would only decrease by 3% if there were no people with schizophrenia; therefore criminality is not due to the illness alone and research must explore the causal factors involved. Wesseley & Castle (1998) conclude that it is the individual experience of, and reaction to, schizophrenia that contributes to likelihood of offending rather than the illness per se.

Firstly, this introduction to the current study will review general studies that have provided evidence for a connection between psychosis and offending. Hodgins (2001) states that a definite link between criminality and psychotic disorders has been established empirically. This author cites three types of research design which back this up. The first is birth cohort studies. The second type of research design is follow-up studies that have compared criminal activity of people discharged from psychiatric hospitals with a non-psychiatric population. Thirdly, there are studies that have compared prevalence of psychotic disorders among convicted offenders with the prevalence among a matched sample in the general population. Hodgins concludes that some of these crimes could have been prevented if more public money was spent on predictive studies and more appropriately based interventions. Furthermore, Hodgins believes that factors such as substance abuse and co-morbid affective disorders need also to be addressed in relation to offenders with mental disorders, as well as cognitive

processes. A review of the three research designs presented by Hodgins (2001) will be discussed.

A birth cohort study of 280 sets of twins where one of each twin set had a diagnosis of psychosis was carried out by Coid, Lewis & Reveley (1993). In this study, there was a significant relationship found between criminal conviction and psychosis. These authors therefore conclude that a propensity to offend is not genetic but a direct outcome of psychiatric illness. However, this study did not account for individual variations in psychotic symptomatology or how the person perceived their illness and ability to cope with it.

Studies that have followed up psychiatric discharges and compared the recidivism rates to the general population will be discussed further in relation to the risk assessment literature (section 1.4.5). The rates of criminality have been estimated as the same in the psychotic and non-psychotic population (Moir & Jessel, 1995). However, Moir & Jessel believe this does differ for violent crimes; in this type of crime people with psychosis are four times more likely to be the offenders. These researchers estimated that up to 80% of these offences are attributable to the psychological processes of the illness and also to the still relatively unknown area of biochemical and neuro-anatomical factors in psychosis.

Follow up studies that have examined risk assessment and recidivism rates have shown a connection between psychosis and offending. Langstrom & Hodgins followed up

discharges of people with psychosis from forensic and general psychiatric services in three European countries and Canada. In this study, 78% of people with schizophrenia in forensic services had offended before while only 1 in 5 of the general psychiatric patients had a criminal record. These researchers found that of all the major mental disorders, schizophrenia was the one most closely associated with criminality. Putkonen, Komulainen, Virkkunen, Eronen & Lonnqvist (2003) completed a follow up study through to 1999, of 132 women in Finland convicted of attempted or actual homicide between 1982 and 1992. Of the 31 re-offenders, 10% had psychosis; recidivism was found to be related to illness.

There have been many studies that have compared prevalence rates of psychosis in offenders versus the non-forensic population or other types of offenders. Craissati & Hodes (1992) studied 11 convicted sex offenders in a regional secure unit. They found that the majority displayed psychotic symptomatology that had not been diagnosed until after the incarceration and that the offences primarily occurred while people had florid symptoms (active psychotic symptomatology); offending was correlated with psychiatric relapse. In their study, the offenders had a range of minor and major offence types. This is a small sample from which to draw conclusions and these authors called for larger, controlled studies to be carried out. A larger retrospective study was carried out by Corbett, Duggan & Larkin (1998) with 111 forensic in-patients with schizophrenia who were compared to forensic in-patients with personality disorder. This study found that people with schizophrenia were significantly more likely to be convicted of violence or homicide than people with personality disorders. Overall, these researchers concluded

that schizophrenia has a modest association with violent offending; this is significantly increased if there is a co-morbid substance abuse problem.

Another study that provides good evidence for a link between psychosis and offending was completed by Erb, Hodgins, Freese, Muller-Isberner & Jocker (2001). This was a longitudinal study of two cohorts in Germany that studied the medico-legal files for data and compared this to rates within the general population. The first cohort was people with schizophrenia convicted of attempted or actual homicide between 1955 and 1964. The second cohort was people with schizophrenia convicted of attempted or actual homicide between 1992 and 1996. There were 284 people in the first cohort and 29 in the second. Having schizophrenia increased the risk of committing homicide by 12.7 in the old cohort and 16.6 in the second cohort. These authors used a Chi-square to compare causal factors across different cross-cultural studies of psychosis and offending. These causal factors for offending included poor psycho-social functioning, lack of early intervention and services.

Walsh et al (2001) compared 905 patients with psychosis in high-security hospitals across the UK with 708 patients with psychosis in general psychiatric services. This is a huge study with sound methodology that found a correlation between serious violent offences and psychosis. These researchers conclude that this correlation has been consistently demonstrated in current literature but the nature and causal factors within this correlation are not yet fully known and therefore, more exploratory research is needed in this area.

Contextual factors are important when considering violence in people with schizophrenia (Krakowski, Czobor & Chou, 1999). For example, offenders with psychosis may have different anxiety and arousability levels than non-psychotic offenders because the commission of the crime may help reduce distress of psychotic symptoms for them in the same way that self-injurious behaviour may also be a functional behaviour for people suffering from high levels of emotional distress. However, the role of individual differences is important, as the majority of people with psychosis do not commit crimes. The introduction to the current study will now turn to a review of specific factors that have been shown in the literature to be implicated in the connection between psychosis and offending. Identification of these may aid risk assessment.

The specific factors important in understanding the connection between psychosis and offending can be broadly categorised as social and psychological. A brief review of studies that have cited the importance of social factors will be discussed; the current study is concerned with psychological factors. Modestin & Ammann (1996) studied factors that contributed to offending behaviour in 282 male schizophrenics. They found that criminality rates depended on both socio-demographic factors and on the content of the illness. A retrospective study was carried out by Patrick, Bailey & Clark (2000), to investigate whether psychosis in adolescence was predictive of criminality in adulthood. These researchers failed to demonstrate a link and conclude that criminality may be linked more to social factors than psychotic symptom per se. Therefore, having a psychotic illness alone is not predictive of offending behaviour although in some people

with psychosis, there is an interaction between the psychological processes of their illness and their consequent behaviour. If this is true, then these processes should be distinguishable from the processes within non-offenders with psychosis and therefore amenable to change. This has clinical implications for efficacious treatment and risk assessment. Indeed, Becker, Love & Hunter (1997) found that behaviour therapy was successful in eliminating violent behaviour in convicted offenders even when their psychotic symptoms were florid. These results have not been replicated, perhaps because there is also the important question of opportunity to offend which was not addressed in this study.

Finally, a brief review of studies citing the importance of psychological factors in offending by people with psychosis will be discussed. Specific processes that form the theoretical underpinning of the current hypotheses being tested will be discussed in depth in sections 1.6, 1.7 and 1.8. Eronen, Tilhonen & Hakola (1996) reviewed 93 homicide offenders with psychosis in comparison to non-psychotic homicide offenders. These researchers found that there was no overall difference although severe violence was attributable to people with certain types of psychotic symptoms, for example, people with psychosis and co-morbid substance abuse.

Hodelet (2001) completed statistical analysis of the psychiatric records of 175 forensic in-patients with psychosis. This researcher found a highly significant association between psychosis and offending. This was further strengthened by the presence of hallucinations and/or delusions in the patient. In this study, 75% of the offenders with

schizophrenia were convicted of violent offences. No correlation was found between offending and age, gender, command hallucinations or years of illness in this study. It was hypothesised that the association between psychosis and offending was linked to how an individual experiences and reacts to their illness (cognition and coping).

An interesting study by Smith (2000) calls for clinicians to conduct rigorous assessments with people with psychosis who are convicted of sexual assaults. Smith studied 84 patients in a secure hospital who met this criterion. This author concludes that the motivation of the crime is an important factor that is often overlooked as clinicians attribute the crime entirely to the psychosis per se. In Smith's study, 54% of people committed a sexual assault for sexual, sadistic motivators that the author argues may be entirely separate from their mental illness. In a separate article of the same study, Smith & Taylor (1999) comment that a direct symptom relationship to the crime is not always apparent but that there are psychological factors of having schizophrenia which cause people to commit crimes, for example, specific delusional or hallucinatory motives (see also Taylor, 1985; Taylor, 1998 and Taylor & Monahan, 1996). Junginger (1996) also argues for a symptom consistent approach to discussing offending and psychosis. This author also points out that this is a double edged sword, with mentally ill people also being more likely to be victims of crime as well. It could be hypothesised that offending in people with psychosis cannot be directly linear to presence or floridity of symptoms; otherwise all people with psychosis would offend when they were acutely unwell. Therefore, the current study aims to explore the interaction of psychological processes in offending through empirical testing. For example, is offending in psychosis linked to

severity of symptoms and how people cope with these? Which processes are more causal in offending by people with psychosis? What are the difficulties in studying this?

Humphreys, Johnstone & MacMillan (1994) found that in nearly 50% of cases of people with first episode schizophrenia who offend, their actions are closely linked to their psychotic symptoms. These researchers also point to a methodological flaw in studies that do not consult forensic histories of people pre-diagnosis. This would be an important consideration in trying to establish a causal link between criminality and psychosis. This would also help eliminate people with personality disorders from studies. In the current study, personality disorder is an exclusion criterion. Attempts to establish a causal link between psychosis and criminality are even more hampered by the differing methodology used by researchers in this area. This makes it difficult to make meaningful comparisons across studies. Empirically, it would be easier to establish an evidence base in this area if stringent research criteria was developed and used in all studies.

Finally, meta-analyses have yielded evidence for a connection between psychosis and offending that is dependent on many variables. A meta-analysis was carried out by Bonta, Law & Hanson (1998) of 62 factors considered predictive of recidivism in mentally disordered offenders. The results indicated that the same factors were predictive of recidivism for both mentally disordered and non-disordered offenders. However, social and coping factors such as substance abuse and family dysfunction do have a role in offending within psychosis. It should be noted that only one of the authors

was a psychologist and the other two were solicitor generals for Canada. This research was sponsored by public money and was intended to promote current governmental policy and therefore, had a different agenda from clinical research. In spite of this, the study had sound methodology and promotes understanding of individual factors involved in offending.

Walsh, Buchanan & Fahy (2002) completed a meta-analysis on studies from 1990 to 2000 and found a small but independent association between schizophrenia and offending. These researchers argue for an accumulation of evidence that supports this association due to the consistency of findings across many different studies. It may be argued that these consistent findings across studies with very different designs overshadow the methodological weaknesses of any one study alone. In conclusion, these researchers discussed the uncertainty of the causal pathway in this association and called for exploratory research using different formulations based on the research evidence to explore multiple causality and the interplay of different factors that can increase the likelihood of offending in people with psychosis.

In summary, the research has demonstrated a link between psychotic disorders and offending behaviour but how is this different from criminality in the general population? It is important to gain theoretical specificity of the individual processes involved in this link. Different authors have attempted to explain this link by using different hypotheses. As the link between psychosis and criminality has gradually been established, researchers have tried to identify the specific factors of psychosis that may increase the

likelihood of offending behaviour. It is important to review this in context of the risk assessment literature; if psychosis is implicated in offending, risk predictions should be possible.

1.4.5 Risk Assessment in Psychosis

The evidence illustrating a connection between offending and psychosis must be reviewed in context of the risk assessment literature. How can the theory translate into clinical and forensic practice?

Douglas, Cox & Webster (1999) argue for a greater use of risk assessment in clinical forensic work. These authors reviewed studies of the accuracy of risk assessment and concluded that in the majority of predictions made, a significant result was established between actual risk and predicted risk as estimated by the clinician. This is particularly important in working with mentally disordered offenders because of the unpredictability of the course of their illness. These authors call for more research in this area to guide clinical practice. They quote Borum (1996):

> '(d)espite substantive advances in knowledge about the risk for violent behaviour among people with mental disorder, there have been virtually no systematic efforts to incorporate this information into a useful, empirically based framework for clinical assessment'. (p. 179)

Similarly, other researchers have also argued for more formalised risk assessment tools and treatment protocols based on empirical evidence, in particular regard to mentally disordered offenders (e.g. - Howells, 1996; Rice & Harris, 1997 and Tishler, Gordon &

Landry-Meyer, 2000). Buchanan (1999) argues for a mathematical model of risk assessment based on actuarial prediction that may solve many of the ethical and clinical difficulties presented to psychologists when asked to complete risk assessments. In Scotland, there are two official guides and policies available to clinicians making risk assessments in the NHS (The Scottish Office, 1996 and Mental Health Reference Group, 2000).

Guidelines for conducting risk assessments in clinical practice have been produced by Moore (1996). This author discussed the difficulties in making such an assessment. There are numerous factors that must be considered including individual factors, details of past offending and social factors. Moore also discusses the implications of making an error and the effects on an individual wrongly labelled as at risk of offending, as well as the costs to future victims if people are wrongly assessed as being no risk towards other people. Reed (1997) outlines some of the highly publicised cases that have arisen as a result of clinicians incorrectly predicting risk. This author calls for more training and standardisation of the procedure but concedes that this is more difficult with mentally disordered offenders due to the unpredictability of their illness and to the number of variables implicated in this risk. The literature has demonstrated the need for more exploratory research in identifying and determining the causal relationship between these variables.

In terms of mentally ill offenders, Moore (1996) emphasises three relevant questions that must be addressed. Firstly, is the offence uncharacteristic of the person's behaviour

when they are well? Secondly, is the evidence strong enough to point to the illness as being a motivator behind the crime? Thirdly, are there any cognitive, behavioural or emotional factors arising from the illness that predispose the person towards offending? Consideration of these questions may help establish the processes responsible for the causal relationship between psychosis and criminality. The current study will focus on the third of Moore's (1996) questions. Identification of the risk factors for criminal behaviour among people with psychosis would help improve treatment and services and therefore lower recidivism rates.

Strand, Belfrage, Fransson & Levander (1999) discuss the need to assess risk of violence in people with different types of mental disorder in different ways. In their study, they assessed 40 discharged forensic psychiatric patients, half of whom had re-offended, using the HCR-20. This is a standardised risk assessment tool devised by Webster, Douglas, Eaves & Hart (1997). They found a high predictive validity, especially with regards to clinical and risk management data and conclude that this may be as valid as studying historical factors in predicting re-offending. However, this study contained people with personality disorders as well as people with psychotic disorders so it is difficult to assess the usefulness of this tool with a pure psychotic population.

A prospective study was conducted by Arango, Barba, Gonzalez-Salvador & Ordonez (1999) of 76 people with psychosis while they were in hospital. An actuarial model was devised based on the results of a battery of standardised assessments which classified

patients as either likely to be violent or non-violent in the future. Statistical analysis revealed that the model accurately classified 84.13% of the sample. This suggests that it is possible to assess risk of violence in people with psychosis.

Moore (1996) also discusses the importance of people conducting the risk assessment being properly trained in the procedure and using standardised assessments of risk. Giles & Mullineux (2000) studied risk assessments made by 33 probation officers. They found that although there was a reliable tool available, the officers still concentrated on the severity and length of a person's criminal record to make their decision. This led to decisions being made which were neither valid nor reliable, as they did not focus on the individual factors involved in committing the crime (as advocated by Reed, 1997). These authors concluded that people conducting risk assessments need to be adequately trained and led by the empirical evidence.

In summary, most clinicians and researchers agree that risk assessment forms an important part of clinical and empirical work into predicting offending and treating mentally disordered offenders. An understanding of the risk assessment literature is important in establishing the role of psychological processes in offending and recidivism. In reality, this has proven elusive to do due to differences in methodological designs and lack of a universally used standardised protocol as well as a lack of research pinpointing the causal factors. Many different protocols of risk exist and often the one that is used in a study depends on the theoretical preference of the researcher. Trenoweth (2003) states that the risk assessment research has been limited because it is more art

than science. This researcher stated that many of the studies to date have been hampered by poor auditability that makes it difficult for other researchers to follow one investigator's decision trail. This makes it difficult to make comparisons between studies. However, as Webster & Bailes (2001) point out, this has improved over the past two decades and should continue to do so if led by an evidence base. It should also be pointed out that the research has focused on violent crimes and largely ignored crimes committed against property or non-violent crimes that may be committed by people with psychosis.

In order to understand factors involved in crimes committed by people with psychosis, it is important to have an established theoretical base. Cognitive Behaviour Therapy (CBT) has proven to be the most prolific in this area and is the model used for this study. Therefore, the introduction to this study will now go on to introduce the CBT model for psychosis and to discuss specific cognitive, behavioural and emotional processes felt to be implicated in offending behaviour by people with psychotic disorders.

1.5 The Cognitive Behavioural Model of Psychosis

The current study is designed according to the cognitive behavioural framework for assessing and treating psychotic disorders. It is therefore appropriate to introduce a brief overview of this model, its rationale and its resulting interventions for people with psychosis as well as efficacy studies of CBT. Later, the literature on specific cognitive, behavioural and emotional aspects of psychosis will be discussed. It should be noted that

there are other frameworks, for example, psycho-analytic and familial, for intervening in psychosis (introduced in section 1.3.2).

However, the cognitive behavioural model is the most widely used in clinical practice; it attempts to lessen the distress which psychotic symptomatology causes people (emotional) and to work on enhancing some of the cognitive and behavioural deficits caused by psychosis. Ryden (2002) states that with the growing success of psychological models such as CBT there is a growth in research trying to apply psychological techniques to more chronic and traditionally medical dominated mental illnesses such as psychosis.

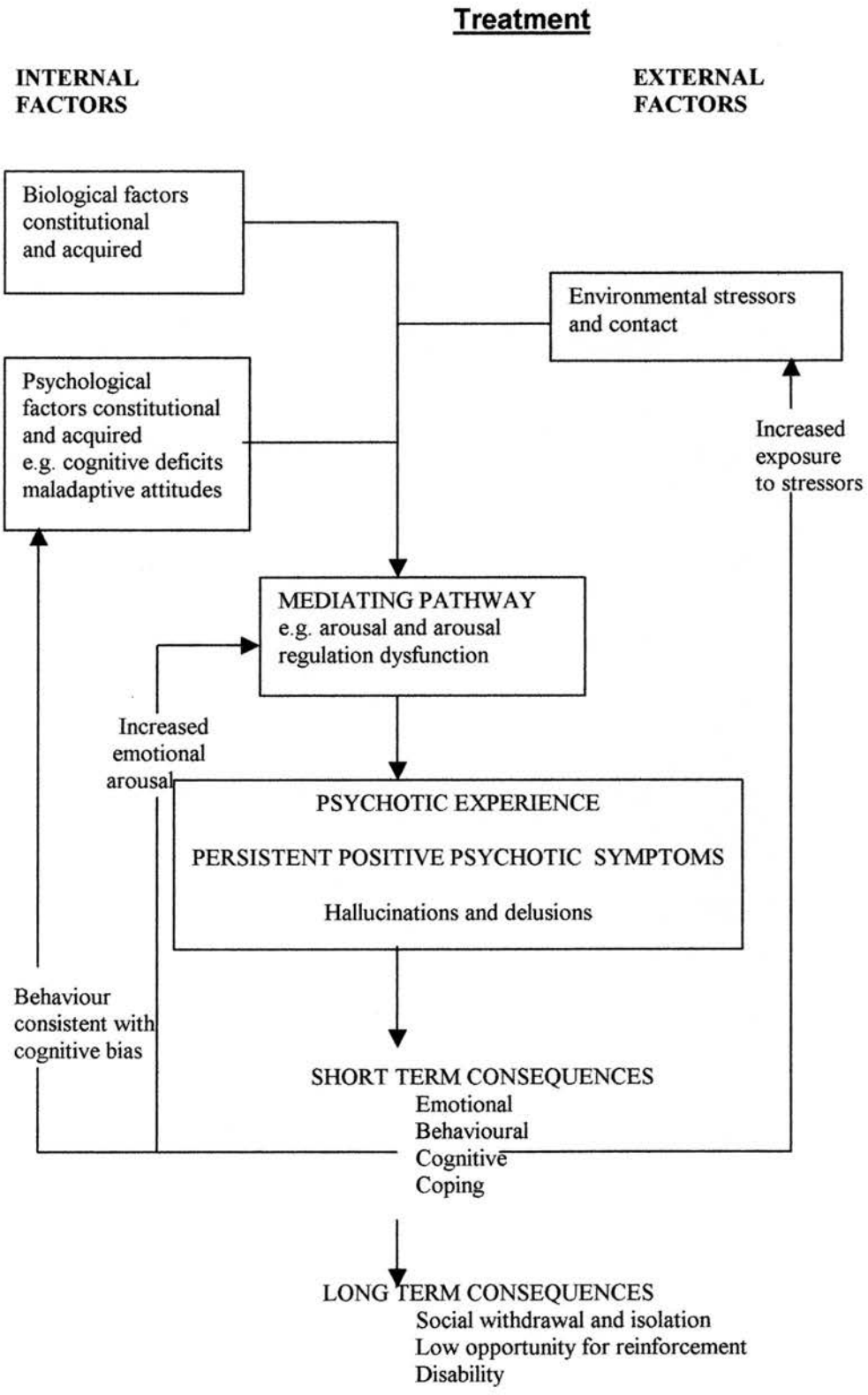
The British Psychological Society's (BPS's) 2000 report states that CBT is the most common and most successful psychological therapy for psychosis. This approach examines maladaptive patterns of thinking associated with a range of emotional and behavioural patterns and was originally applied to anxiety and depression (Beck, 1976). Beck's cognitive therapy (1976) places a huge emphasis on the patient-therapist relationship and outlines clear stages in which to proceed with assessment, formulation and therapy. All of these core psychological skills apply to CBT for psychosis as well. The cognitive behavioural approach to psychosis is based on the assumption that psychological difficulties depend on the way that people think or interpret events (cognitions), how people respond to these events (behaviour) and how it makes them feel (emotions). In this respect, CBT helps to understand psychotic phenomenon within the context of other experiences and beliefs that people may have. The importance of

normalising the psychotic experience in this way is seen as important (Johns, Hemsley & Kuipers, 2002). The CBT approach incorporates the view of these experiences (or symptoms) as amenable to intervention, challenge and change. The BPS report ascertains that up to a 50% reduction in relapse rates in psychosis can be achieved through psychological intervention. Therefore, this report sees the aim of a CBT intervention in psychosis as to help people understand and change the ways in which they appraise and respond to their experiences.

There are a series of stages in the CBT intervention for psychosis as presented by Kingdon & Turkington (1994). Due to the complexity of the illness and the individual variations in symptomatology, all of these areas should be covered over long term therapeutic contact following a rigorous assessment and formulation period. These researchers and others have emphasised the problems of engagement with psychotic patients and the need to modify standard CBT techniques (e.g. - Chadwick, Birchwood & Trower, 1996). Kingdon & Turkington proposed stages for intervention that include cognitive techniques to elicit and re-interpret distorted thoughts (delusions) and perceptions (hallucinations). It can also be productive to work on communication skills and insight with the person. Behavioural techniques may involve teaching the person adaptive coping strategies that have been associated with good outcome, for example a problem solving approach. Emotional techniques would involve working with the person on any co-morbid anxiety or depressive disorders. Kingdon & Turkington emphasise that biological (e.g. - medication) and reduction in individual stress vulnerability factors must also form part of any treatment program.

Haddock & Tarrier (1998) present a heuristic framework for understanding and intervening in psychosis (from page 161 of their paper). The psychotic experience is interpreted in terms of both internal and external factors and helps to illustrate the role of cognitive, behavioural and emotional processes in psychotic experience. The model is reproduced over the page:

Figure 1: A Clinical Heuristic of Assessment and Formulation of Psychosis



The CBT model has been the most widely researched. As this is relevant to service delivery in the National Health Service (NHS), the Government emphasises the need for evidence based treatments and audit in patient care. The Government set out clinical standards for this in relation to schizophrenia in its' 2001 publication. The application of CBT to psychosis has received much acclaim in the mental health field. Bustillo, Lauriello, Horan & Keith (2001) summarise their review of psychological interventions as follows:

> ' Therefore, the results from cognitive behaviour therapy interventions are particularly encouraging..... Nevertheless, cognitive behaviour therapy has become established for the treatment of depressive and anxiety disorders and may prove to be a valuable resource for clinicians helping persons with chronic psychotic disorders as well '. (p. 169)

The current study is not concerned with a full review and critical evaluation of the cognitive behavioural model for psychosis; the focus of this study is the applications of CBT to understanding offending in psychotic disorders. However, it is important to establish empirical validity for the application of this model to psychotic disorders. Therefore, a brief review of randomised control trials that support this application was conducted. This is summarised in table 1 (overpage):

Table 1: Randomised Control Trials of CBT for psychosis

Authors	N	Treatment	Population	Outcome measure	Results
Moorhead & Turkington (2001)	1	18 session CBT	Medication resistant delusional psychosis	Standardised assess. of symptom severity	Sig. Improvement in empowerment and symptom relief
Garety et al (1997)	60	CBT vs standard treatment group	Psychotic disorders	Standardised assess. of symptom severity	Sig. Improvement in 50% of people with persistent delusions in CBT group
Drury, Birchwood, Cochrane & MacMillan (1996)	60	CBT vs control group matched for input	Recent onset of schizophrenia; florid symptoms	Standardised assess. of symptom severity	25%-50% reduction in symptom distress in CBT group; 50% reduction in time spent in hospital
Wykes, Reeder, Corner, Williams & Everitt (1999)	34	CBT (cog. remediation) vs control group	Psychotic disorders with marked cognitive deficits	Neuropsychological assess. and standardised quality of life scales	Sig. reduction in cog. deficits and enhanced quality of life

Although much of these studies suffered from reduced sample sizes, they still provide a small illustration of accepted empirical evidence for the efficacy of CBT in psychosis.

The introduction to the current study will now review the application of the CBT model to offending behaviour in people with psychotic disorders. Specifically, this study is interested in cognitive, behavioural and emotional processes that may help illustrate risk factors in this type of criminality.

1.6 Cognitive Processes in Psychosis

The cognitive processes under study (locus of control and conviction of beliefs) will be discussed as specific aspects of attribution theory. Attribution theory is a collection of diverse theoretical and empirical concepts of social psychology that are broadly concerned with how people appraise and respond to information (Fiske & Taylor, 1984). This study is concerned with the process of appraisal; in a psychological sense, appraisal refers to the interpretation that a person places on events in their life and how much their interpretation influences subsequent actions (Deschamps, 1997).

> 'In some ways, attribution is a process through which things acquire more meaning.' (Deschamps, 1997, p. 7)

Specifically, Deschamps discusses how a person's feelings, thoughts and behaviour acquire meaning through appraisal as well as how an individual interprets other peoples' feelings, thoughts and behaviour.

Making attributions has been found to differ in people with psychosis due to difficulties with insight (McFarlane & Lukens, 1998). People with psychosis are often seen as lacking in insight; it has been difficult to know whether this is a symptom of psychosis or more due to difficulties in providing psycho-education, due to scientists' still limited knowledge about the aetiology of the illness. McFarlane & Lukens argue that insight can be improved by providing psycho-education both with the patient and their family. This in turn effects the attributions made about the illness, for example, perceived causality that can affect prognosis. These authors also hypothesise that providing adaptive coping strategies would further enhance this process of improving insight. They argue for a

causal link between attribution, behaviour and thus clinical outcome. Similarly, Penn, Corrigan, Bentall, Racenstein & Newman (1997) studied the nature of social cognition in people with schizophrenia and highlighted a range of deficits in cognitive and social functioning found in people with the illness. Making attributions is a higher order cognitive process and the cognitive deficits and thought disorder found in people with psychosis can make this process more difficult. These researchers conclude that the nature of the attributional process must be addressed and remediated through cognitive and behavioural interventions for a successful clinical outcome.

In summary, attribution theory has helped develop the idea of individuals' thoughts determining how they understand and respond to events in their life through a process of appraisal. This is an important area of research; attributional factors are believed to be more predictive of relapse and the development of secondary problems than other cognitive processes (Tarrier, 1996).

This is of relevance to the current study in that attribution has been found to differ within people with psychosis in comparison to the general population. Specifically, there is an empirical base for the role of locus of control and conviction of beliefs about one's illness, in people with psychosis and how they appraise and consequently cope with their illness. These will be discussed further; the current study aims to examine whether these processes of appraisal also differ according to severity of illness and consequently effect behaviour such as offending.

1.6.1 Appraisal in relation to Locus of Control

Locus of control was chosen for the current study over other specific attributional processes because it is viewed as a relatively stable propensity to view the world in a particular way (Fiske & Taylor, 1984) and therefore less likely to change over time, e.g. between time of offending and time of administration of current study. Furthermore, Fiske & Taylor argue that despite criticisms, locus of control has remained a valid empirical and clinical concept that provides a good basic measure of beliefs and causal inference.

There is a close relationship between appraisal and locus of control (Deschamps, 1997). Locus of control refers specifically to how people interpret what is happening to them. Rotter (1966) is generally seen as the originator of psychological research in this area. Rotter devised a scale to measure what he distinguished as external and internal locus of controls. External locus of control refers to when a person perceives and explains an event with an interpretation that what happens is out of the individual's control. An internal locus of control refers to when a person believes that how an event progresses depends on the individual's own thoughts, feelings and actions.

Locus of control and attributional style are important because they can influence the quality of a person's life and their subsequent behaviour. Frith (1995) points out that people with psychosis will not view the world normally due to disruption in their development of social skills. Can this be measured through examining the cognitive processes of locus of control and beliefs, as these have been shown in the literature to be

associated with behavioural processes? Koestner, Zuckerman & Olsson (1990) found that people with an internal locus of control had more intrinsic motivation to overcome their difficulties and self-reported more enjoyment, fun and interest in what they did than people with an external locus of control. The latter relied more on praise from others to help master a task. An internal locus of control is often seen as a goal of therapy as it signifies that the individual has mastery over their environment and confidence in their ability to cope.

Within health and clinical psychology, research has attempted to study locus of control in people with both physical and mental illnesses as a way of predicting how an individual will appraise and cope with their illness and to help teach them the most adaptive ways of doing so. This is of relevance to the current study in that if a poor appraisal is made of an individual's illness, this may determine future maladaptive coping styles and consequent behaviour such as offending. Levenson (1973) used Rotter's 1966 internal-external dichotomy to assess people with psychotic and neurotic illnesses. The results showed that people with psychosis were more likely to have an external attribution of causality, for example, believing in chance and control by powerful others.

As previous studies have shown, this can influence how the person will then react towards their illness. Varkey & Sathyavathi (1984) measured locus of control in people with schizophrenia, manic depression (now bi-polar affective disorder) and in a non-psychiatric sample. These researchers found that the two psychiatric samples had a more

external locus of control. There was also an affective component as schizophrenics displayed more symptoms of worthlessness and low self-esteem.

A study that utilised stringent methodology was conducted by Frenkel, Kugelmass, Nathan & Ingraham (1995). These researchers administered locus of control measures to 89 subjects of the National Institute of Mental Health study in USA and Israel and attempted to define this in terms of the risk assessment literature. These researchers found that adolescent mental health and locus of control variables were predictive of adulthood mental health. However, of the psychotic disorders, locus of control that developed in adolescence when a person begins to make sense of the world and their role in it was a better predictor of schizophrenia and bi-polar affective disorder. This would support Birchwood's hypothesis (1995, 1999) of a critical period and the importance of early intervention in determining the course of psychosis.

Research has also highlighted a significant interaction between locus of control and the coping strategies that people adopt in times of stress. Parkes (1984) assessed locus of control and coping behaviour in 171 student nurses using standardised outcome measures. The results showed that people with an internal locus of control used more adaptive coping strategies and thus were better able to deal with the stressful situation. By comparison, this would suggest that external locus of control is linked to more maladaptive coping strategies and behaviour such as substance abuse and criminality. Boker, Brenner & Wurgler (1989) found that people with schizophrenia developed coping strategies to help compensate for the deficits of the illness and to protect

themselves. These researchers also examined coping in relation to locus of control and found that people with schizophrenia had a low internal locus of control that linked to their coping strategies. Namely, people with schizophrenia did not feel they had the skills to help themselves and so developed strategies more aimed at preserving than improving the self.

Limited research has been carried out in forensic settings to examine locus of control among offenders. Blatier (2000) argues that offending behaviour should also be addressed from a cognitive viewpoint. This researcher found that incarceration without rehabilitation led to prisoners having more non-conformist views and an external locus of control over their offending, in comparison to groups who received therapeutic input. The study was conducted in France and therapeutic input involved the prisoner doing community service out with the prison. Therefore, locus of control may also have implications for treating offending behaviour and reducing recidivism rates. Similarly, research in a British prison by Newton (1998) found that prisoners scored higher on psychotic and neurotic symptomatology, hostility and had more of an external locus of control while in prison than on re-testing post discharge. Newton hypothesises that length of stay and the nature of rehabilitation affects people in this way. Although locus of control is relatively stable, can factors such as hospitalisation and incarceration effect its development? This has implications for mentally disordered offenders who are incarcerated in secure hospitals; eg – the literature has shown how incarceration effects locus of control in prisoners but not on how this connects to their offending behaviour.

There is no research that has attempted to look at whether or not locus of control differs between degrees of offending behaviour, e.g.- are major offenders more ill and therefore have stronger cognitive symptoms such as a stronger belief that their symptoms control them? If so, does this perceived causality mediate their offending behaviour? Another interesting question that arises from the literature is whether or not conviction of belief and severity of illness are really two distinct processes or one and the same thing.

In summary, research has demonstrated a link between appraisal and locus of control with behaviour and coping with stressful situations. In general, the literature points to differences in appraisals made by people with psychotic disorders. Although studies in this area are limited, especially with regard to a forensic population, there is an empirical base that states that people with psychosis are more likely to have an external locus of control that may affect their clinical outcome and development of secondary problems as a result of poor coping. Of relevance to this study is the role of appraisal and locus of control and whether the literature that shows how this influences behaviour can be applied to development of maladaptive behaviour such as offending. If the factors which people believe about their self and the world that contributes to their offending could be empirically demonstrated as measurable psychological factors, this would make locus of control a predictive and protective factor in terms of risk assessment and rehabilitation. The role of conviction of beliefs will now be discussed.

1.6.2 Appraisal in relation to beliefs about psychosis

The literature on attributional processes in psychosis has focused on two processes of appraisal that are implicated in people with psychosis and how they cope with their illness. The previous section on locus of control has introduced the notion of conviction of beliefs and the role that this has in maintaining psychotic symptomatology; this will be discussed further.

Morrison, Haddock & Tarrier (1995) argue for a heuristic approach to understanding psychosis. These researchers reviewed the research and argued that cognitive appraisal of psychotic symptomatology elicits behavioural, emotional and physiological responses that may help maintain the illness and consequently, affect future prognosis. Birchwood (1999) has researched the content of the psychotic experience and how an individual appraises this experience and hypothesised that this is closely related to the development and maintenance of the psychosis. Birchwood, Meaden, Trower, Gilbert & Plaistow (2000) discuss how beliefs about the power of the auditory hallucination can be linked to subsequent appraisal of the hallucination and how much the person perceives them self as able to cope with the symptoms, which is related to locus of control. This can determine the nature of the coping strategies adopted.

Differences between applications of attribution theory, in terms of belief formation, to people with psychosis in comparison to the general population have been highlighted by Shaver et al (1984). These researchers measured attributions of causality and responsibility in 30 people with active symtomatology of schizophrenia (both of

paranoid and non-paranoid diagnosis). They found that although the nature of attribution can differ in people with psychosis, nevertheless such people do make consistent attributions about their illness and hold a strong belief in the attributions that they make. The nature of this attribution is correlated with good clinical outcome. In contrast, Rossler & Lackus (1986) found that people with schizophrenia made incorrect and unusual attributions. This study involved 25 patients who were in remission from their psychotic symptoms. This differs from the design of Shaver et al (1984); in addition, Rossler & Lackus did not have a comparison group from the non-psychiatric population. These differing results are characteristic of the at times conflicting research into psychosis that makes it difficult to form a clear consensus. This in part must reflect the differing presentations of psychosis and also a limited empirical evidence of the nature and aetiology of the deficits associated with psychotic disorders.

Research has studied beliefs in relation to locus of control and found that locus of control is linked closely to peoples' beliefs about the situation. Lazarus (1966) is the main theorist to have applied locus of control literature to peoples' beliefs and their perception of control over a stressful event. It had been theorised that people with an external locus of control would have more feelings of helplessness. In contrast, Houston (1972) found that it was people with an internal locus of control who exhibited more physiological signs of arousal and defensive behaviours during controlled stressful situations. This researcher highlighted the importance of beliefs and individual appraisal as well as locus of control in determining behaviour in stressful events. With reference to the literature, the current study aims to examine whether this holds true for people

with psychosis who offend. Does offending depend on the nature of appraisal about the symptoms and locus of control? Houston's study is quite old now and has not been replicated more recently.

There has been limited research in the role of beliefs in people with psychosis who commit crimes. Hodelet (2001) found that the strength of the association between psychosis and offending was influenced by the presence of hallucinations and delusions and a person's beliefs about their symptoms. It may be that these differences are measured in clinical settings but that clinicians tend to perceive them as a symptom of the mental illness rather than as a direct result of the incarceration and treatment offered. Is this also a causal factor? Researchers have shown the relevance of specific delusional or hallucinatory motives to the commission of crime by people with schizophrenia (see Taylor, 1985; Taylor, 1998; Taylor & Monahan, 1996 and Junginger, 1996).

As with locus of control, the theoretical underpinning of the role of these cognitive processes of appraisal in people with psychosis and their consequent coping behaviour can be expanded to criminality as a maladaptive behaviour. Locus of control and conviction of beliefs have been shown to differ in people with psychosis and be a causal factor in determining the adaptiveness of coping with the illness, therefore it is valid to examine whether this is also a causal factor in other behavioural processes such as offending. If conviction of beliefs about psychosis is found to differ according to severity of offending, this has implications for the risk assessment and treatment of offenders with psychosis. The rest of the introduction to the current study will introduce

behavioural processes and the hypothesised link between these and offending in people with psychosis.

1.7 Behavioural Processes in Psychosis

1.7.1 Coping Strategies

There have been many different methods employed to measure coping strategies. Carver, Scheier & Weintraub (1989) point out that coping with stressful events encompasses many behavioural dimensions and that in order to assess this adequately, an empirical and theoretical base must be used to identify the exact nature of coping that is expected from a given population. Boker, Brenner & Wurgler (1989) found that people with schizophrenia developed coping strategies to help compensate for the deficits of the illness and to protect themselves. This was linked to locus of control, as discussed previously.

Generally, coping strategies are defined as adaptive or maladaptive. The former is more likely to predict good clinical outcome whereas the latter may cause further psychiatric and/or social difficulties to the individual, for example, offending behaviour. This is linked to other processes involved in psychosis as demonstrated by the heuristic model shown earlier (Haddock & Tarrier, 1998). In an earlier paper, Morrison, Haddock & Tarrier (1995) argued that cognitive appraisal of psychotic symptomatology elicits behavioural, emotional and physiological responses that may help maintain the illness and consequently, effect future prognosis. The nature of this appraisal will determine whether or not these behavioural, emotional and physiological responses are adaptive or

maladaptive to the individual. Chadwick, Sambrooke, Rasch & Davies (2000) were able to elicit behavioural change in 22 people with psychosis by offering a CBT group program which encompassed these cognitive, emotional and physiological aspects of the illness.

Coping strategies were examined in people with chronic experiences of hearing voices by Romme, Honig, Noorthoorn & Escher (1992); questionnaires were sent to 450 subjects. They analysed 173 of the return data and found that the majority of people who used adaptive coping strategies were in the community as opposed to being in hospital. The four most widely used adaptive strategies used were ignoring the voices, selective listening to the voices, distraction and setting limits on the influence of the voices. Similarly, Falloon & Talbot (1981) analysed coping strategies used by 40 people with chronic schizophrenia. They found that people who were successfully coping with their illness used fewer strategies than the non-copers. However, the strategies used by successful copers were used more systematically, consistently and with more conviction of belief in their success. Frequent coping strategies used were activity changes, interpersonal contact, manipulation of physiological arousal and attentional control.

Research has attempted to demonstrate a link between the nature of an individual's psychotic symptomatology and their subsequent behaviour. Many researchers have argued that the content of the psychotic person's delusional belief system and how they appraise this determines the behaviour and thus may predispose some people to commit offences

(e.g. - Buchanan, 1997 and Sayer, Ritter & Gournay, 2000). There is a clear link between cognitive and behavioural processes in psychosis. The introduction to the current study has already discussed the role of cognitive factors in psychosis and how appraisal can affect behaviour. Acting on psychotic symptomatology is seen as evidence of maladaptive coping strategies. Cheung, Schweitzer, Crowley & Tuckwell (1997) compared coping strategies and content of delusions and/or hallucinations in 31 violent schizophrenics with 31 non-violent, matched schizophrenics. This study was well designed and contains more subjects than most studies using samples from the psychotic population; however it faced some of the methodological difficulties already discussed in doing research of this nature, for example, establishing causality and generalisability of results. These researchers found that subjects in the non-violent group had more positive and successful coping strategies to deal with their psychosis.

A joint factor analysis of personality and coping traits found them to be conceptually linked (Ferguson, 2001). Other researchers have demonstrated this conceptual link too (e.g. - McCrae & Costa, 1986 and Parkes, 1986). This should be considered in people with mental illness as well. It may be difficult to determine to what extent a person's coping strategies are a result of underlying personality traits or as a direct response to the illness itself.

In addition, mood and symptom levels have been found to be related to coping strategies (Billings & Moos, 1981). Higher levels of psychiatric symptoms and especially depression, affected a person's ability to employ adaptive coping strategies. This study

was conducted in the general population but it is relevant in that it is hypothesised to also reflect the same processes within a psychiatric population. Falloon & Talbot (1981) found that people without a co-morbid depressive disorder found it easier to use adaptive coping strategies.

In summary, coping is seen as a multi-faceted concept which is influenced by many other processes, both within and out with an individual's control. A review of the literature on substance abuse as a maladaptive coping strategy will now be discussed.

1.7.2 Substance Abuse

The use of illegal drugs and of alcohol in people with psychosis is a complex and controversial area. In some cases, substance abuse can induce psychosis. In other cases, it is hypothesised that people with psychosis use substances to self-medicate their psychotic syptomatology (Linszen & Lenior, 1999). This form of behaviour may appear to alleviate symptoms in the short term to the patient but in fact can exacerbate them in the long term as people develop co-morbid difficulties. Linszen & Lenior cite alcohol and cannabis as the most commonly used substances in people with psychosis and call for substance abuse to be an integral part of psychological intervention and research into psychosis. However, there has not been a study that compares the rates of cannabis and alcohol use (in particular) in the psychotic population with the general population. Therefore it cannot be concluded that they are significantly different.

In general, higher rates of substance abuse have been recorded in the psychiatric populations than in the general population with nicotine and alcohol being the most commonly used (Farrell et al, 1998). In this study, substance abuse was significantly correlated with psychiatric morbidity. Taylor et al (1998) discuss how the problem of substance misuse is under-estimated in psychiatric settings and prisons. In their study, 20% of patients in a secure hospital setting admitted to abusing substances; the real figure is estimated to be higher. These researchers found that substance misuse is a significant factor in increasing the risk that a person with a psychotic disorder will be violent.

Research has also focused on the link between substance abuse, as a way of coping with psychosis and with offending rates. Sokya (1998) reported that patients in his study with schizophrenia and co-morbid substance misuse had been convicted of crimes more than people with schizophrenia without substance misuse. These offences included more traffic offences and offences against property. In his 2000 study, Sokya found that people with schizophrenia had a higher risk for developing substance abuse difficulties and in turn, people with this dual diagnosis are also more likely to commit violent acts. This is also associated with poor clinical outcome. Milton et al (2001) found that co-morbid substance abuse was a better predictor of violent crime than having psychotic symptoms. In fact, the latter was not predictive of violence in this study. In the Danish birth cohort study, Hodgins, Sarnoff, Brennan, Schulsinger & Engberg (1996) found that substance abuse increased the crime figures both in the general and the psychiatric populations. For example, people with schizophrenia who abused alcohol increased their

likelihood of committing homicide by 17.2 times among men and 80.9 times among women. An explanation for this was hypothesised by Wallace et al (1998) who believe that the increased offending in people with schizophrenia and bi-polar affective disorder is mediated by a co-existing substance abuse problem rather than as a direct result of the substance abuse itself. However, it is difficult to establish a causal link between substance abuse and the primary motivation for offending. For example, a person may commit a crime in response to psychotic symptomatology and also have a separate co-morbid substance abuse problem. The latter may be irrelevant to the execution of the crime.

In summary, there is a clear research link between substance abuse and psychosis that can lead to development of secondary problems, which may include offending behaviour. This may be due to lowering of inhibitions after abusing substances as well as to the need to get large amounts of money to pay for a drug or alcohol addiction. A review of the literature has shown a link between cognitive and behavioural processes in people with psychotic disorders. The other important group of processes within the CBT model are emotional ones.

1.6 Emotional Processes in Psychosis

Fiske & Taylor (1984) discuss the importance of studying affect in relation to cognitions and behaviour and review the research for this. They conclude that affect is either a result of or a basis for cognitive analysis and processes that influences future behaviour. In the current study, the decision to examine depressive and anxiety symptomatology as

emotional processes that are hypothesised to influence offending behaviour in people with psychosis was an a priori conscious decision made with reference to the literature.

Depression and anxiety disorders are the most commonly presented emotional disorders in clinical practice. They have a wide range of presentations that underpin problems of psychological wellbeing and distress and have been the most widely researched emotions in the CBT literature (Beck, 1976). They have also been the most widely researched emotions in the literature on psychosis, as the rest of this section will demonstrate. Anxiety and depression are the most valid emotions to help assess and treat symptoms of psychosis (Hustig & Hafner, 1990). There is also an evidence base to help illustrate the role of anxiety and depression in other hypothesised interactions relevant to the current study, eg – Addington, Addington & Robinson (1999) discuss the link between depression and attribution. Therefore, it is appropriate to draw on the evidence from previous literature and theories in designing the current study.

In conceptualising the current study, consideration was given to other emotional processes. For example, anger has been researched in reference to offending. Was this an applicable emotion to the hypothesised links between psychosis and offending in the current study? Thomas-Peter & Howells (1996) state that the role of anger in acts of violence applies only to a sub-set of offenders, e.g.- not all violent acts are anger-mediated. There is no empirical base for the role of anger in psychosis to draw upon and formulate research in this area. Thomas-Peter & Howells state that the role of anger in psychotic driven offending is unclear because of the base rate proportions of differing

psychiatric diagnoses. These researchers argue for factors such as affective disorders like depression and internal cognitive processes being more important in the study of violence in psychosis. A review of the literature did not produce any other theoretical underpinnings to support the inclusion of emotions other than anxiety and depression in the current study.

1.8.1 Depression

Studies have indicated high rates of co-morbid affective disorders in psychosis. Barnes, Curson, Liddle & Patel (1989) found in a sample of 194 people with chronic schizophrenia that 13% had a depressive disorder that lasted for over three months. The symptoms of depression were also significantly more severe in comparison to a matched control group.

Hustig & Hafner (1990) found a correlation between mood and the nature and subsequent interpretation of a person's delusions. The importance of an individual's interpretation of their psychotic symptoms was discussed in section 1.6.

There has been further research to examine the link between appraisal and mood in psychosis. Birchwood, Mason, MacMillan & Healy (1993) explored a preliminary hypothesis that depression is more likely in schizophrenia because it is a psychological response to an event which the person appraises as uncontrollable. This was confirmed in their study and in a later study by Hoffmann, Kupper & Kunz (2000). In 1998, Rooke & Birchwood (1998) reported that depression in schizophrenia is directly triggered by

psychosis related factors, for example, appraisals of entrapment and humiliation made by the patient. Ventura et al (2000) found that stressful life events are more likely to trigger depression in people with psychosis within the first month after the event. This is believed to be linked to poorer coping strategies and more negative appraisals of ability to cope. This was also explored by Addington, Addington & Robinson (1999); these researchers found that negative attributional styles are predictive of depression. Similarly, depression has been linked to maladaptive coping strategies in people with psychosis (Falloon & Talbot, 1981). The literature has shown a pre-existing link between negative appraisal, coping and psychosis.

Depressive symptoms have been compared in people with different psychotic disorders. Muller, Szegedi, Wetzel & Benkert (2001) studied depressive symptoms in three of the psychotic disorders: schizophrenia, schizoaffective disorder and psychotic depression; the results indicated a clear difference in the presentation of depressive symptoms in people with psychosis. These researchers argue for a separate diagnostic criterion for depression in psychosis. For example, the use of standardised depression questionnaires is important to help distinguish true depressive symptoms from the negative symptoms of depression.

As depression is correlated with a higher rate of suicide, Drake & Cotton (1986) argue for a full assessment of mood in people with schizophrenia, with schizophrenia itself also having an increased risk of suicide in comparison to other mental illnesses. Of the 104 subjects reviewed by these researchers, 15 went on to commit suicide. In all cases,

Drake & Cotton (1986) argue that this could have been predicted by use of a diagnostic criterion for depressive disorders.

Research has attempted to assess the effect of a co-morbid depressive disorder in psychosis on rates of offending. Thomas-Peter & Howells (1996) reviewed the research and concluded that schizophrenia with depression is more likely to result in very violent and bizarre crimes but it is difficult to establish a cause and effect relationship. Harrower (1998) reports more criminal histories in prison inmates who have depression and/or psychosis. However, it is again difficult to establish a causal link. It may be that criminals are more depressed as they review their crimes or as they attempt to adapt to incarceration. These results may also be due to the easier detection of offenders with a mental disorder in comparison to non-psychiatric offenders.

Tengstrom & Hodgins (2002), in their large scale review of schizophrenia in forensic and general psychiatric populations, found a significant correlation between depression in people with schizophrenia and offending. These researchers concluded that the best predictors of offending were historical factors, including mood. The causal nature of this correlation could not be determined from the data. However, depression was felt to be linked to criminality, as general psychiatric patients with depression were also more likely to offend than a non-depressed group.

In summary, research has indicated an increased risk of a co-morbid depressive disorder in psychosis that is distinct from the negative symptoms of psychosis. This co-morbidity

has been associated with increased suicide rates. Studies examining this co-morbidity in relation to offending are more limited but suggestive of an interaction.

1.8.2 Anxiety

There has been limited research on co-morbidity of anxiety in psychosis. Birchwood & Tarrier (1994) however, do suggest that anxiety symptoms are present in people with psychosis as one of the non-psychotic symptoms. In their Early Signs Monitoring Project, psychotic relapse was successfully predicted in 79% of subjects by monitoring anxiety and agitation, depression, withdrawl, disinhibition and early psychotic thinking. They report that people are more anxious when their psychotic symptoms are florid and conversely, when they are more anxious their psychotic symptoms are more florid.

Cosoff & Hafner (1998) studied the prevalence rates of anxiety disorders in three psychotic disorders: schizophrenia, schizoaffective disorder and bi-polar affective disorder. Of the 100 in-patients surveyed, there was an overall prevalence of 43-45% of anxiety disorders. There was no significant difference across the three groups. Social phobia was the most common in people with schizophrenia and schizoaffective disorder (17%) whilst obsessive-compulsive disorder was the highest in people with bi-polar affective disorder (30%). Cosoff & Hafner state that almost none of these people were being treated for their anxiety symptomatology despite the fact that this will influence a person's behaviour and appraisal of their illness and call for a greater awareness of anxiety in psychosis, given the relatively simple clinical treatment for anxiety in comparison to psychosis.

Similarly, Freeman & Garety (1999) also state that anxiety has been a neglected factor in research and treatment into delusional disorders. Using a CBT framework, they found that higher levels of general worry and anxiety symptoms were found in people with distressing, persecutory delusions. This was in comparison to a group of people suffering from generalized anxiety disorder. Therefore, they concluded that it is not just content and appraisal of delusions that are implicated in psychological wellbeing, anxiety may also interact with these. There is also an association of whether or not the person worries about their delusions; specifically they refer to how much a person might worry that they will be able to control their thoughts and beliefs. The current study is interested in exploring the presence and role of anxiety across people with different offending histories. For example, can this be operationalised? Anxiety may reflect conviction of beliefs, e.g. - if a person becomes more anxious as a result of a negative appraisal of their illness and ability to cope with it, will this be implicated in all of their behaviour such as coping and criminality? Again, it is important to measure anxiety using a standardised clinical measure to differentiate any anxiety symptomatology from appraisal processes and the symptoms of psychosis.

Moir & Jessel (1995) discuss the role of arousal in offending; arousal is a physiological response to anxiety. These authors reported lower serotonin and arousability levels in schizophrenic offenders in comparison to control groups and call for more research to determine the causal nature of this. For example, do people offend because of lower arousal levels and the need for additional stimulation or are these differing arousal levels a result of breaking the law? Hodgins (2001) argues that the effects of co-morbid

depression and anxiety on offenders with mental disorders must be addressed in research and clinical practice. Affective disorders and cognitive processes have also been hypothesised to play key risk assessment factors in the study of offending and psychosis (Thomas-Peter & Howells, 1996).

In summary, there is limited research to date into anxiety processes in psychosis, although many researchers continue to demonstrate a significant link between psychosis and anxiety. There is no research to suggest what, if any, role anxiety may play in offending behaviour by people with psychosis, although it has been implicated. However, the evidence does suggest that both anxiety and depression are associated with how the person feels, thinks and behaves in relation to their illness.

The decision to include anxiety and depression measures in the current study despite temporal issues was an a priori conscious decision made with reference to the literature. For example, can present affective symptomatology be valid in relation to past offending behaviour? In the current study, a range of times was expected between a person committing an offence and completing the study as subjects would be asked about all criminal convictions in adulthood and would come from a wide age range. The literature gives consideration to anxiety and depression as both trait and state phenomenon. Clinical formulation, diagnosis and treatment of affective disorders occurs with reference to standardised assessments that measure current symptoms, and to diagnostic manuals such as DSM IV (1994) and ICD-10 (1999), both of which rate depression and anxiety symptoms over two weeks. For example, a patient may be on a waiting list for

over a year for depression before a clinical psychologist sees them and assesses them using a tool that measures symptoms over the past month. The results of this assessment will still be used to give a diagnosis of depression and to provide a formulation that attributes the original problem behaviour prompting referral, to the depression, although the assessment has not measured a person's depressive symptoms at that time.

Ideally, this author would have preferred to have a measure of subjects' affective symptoms on admission to the Blair Unit but this was not available and there was no suitable retrospective measure of depression and anxiety that could highlight this. A case note review was not possible due to the lack of a standardised, consistent admissions assessment (see section 4.1.3 for discussion of this) prior to the current study. Therefore, in light of time constraints and other historical measures, the current study was forced to use a current state measure of depression and of anxiety but this was considered carefully at the inception stage. The literature has suggested an association with affective symptomatology and psychosis/offending, using current measures. If subjects in the current study were found to differ across the groups in terms of their current affective symptomatology, it could be argued that this shows a positive trend for them also differing in the past. Any significant findings could only be hypothesised in terms of these symptoms possibly (not definitely) being there at the time of offending. Other researchers have also encountered this temporal issue. At a conference presentation in Dundee, Quinsey (2003) discussed his decision to include current measures of affective symptomatology, in the absence of adequate methodology to assess historical symptoms, as a risk assessment factor for re-offending when designing the Violence Risk Appraisal

Guide (VRAG) (Quinsey, Harris, Rice & Cormier, 1998). Quinsey presents an argument for static and dynamic predictors of risk and how these interact. This limitation of the current study will be further discussed in section 4.2.3.

Walsh, Buchanan & Fahy (2002) discuss the temporal issues inherent to such research. These researchers argued that the accumulated evidence from studies in the area of violence and schizophrenia utilising different methodologies supports a causal relationship. Different studies do not share consistent design flaws and therefore, the consistency of findings across these studies overshadows the methodological weaknesses of any one study in this area. Psychological processes such as mood, substance misuse and appraisal are seen as additive factors to the relationship between psychosis and offending. However, the uncertainty of the causal pathway supports lots of exploratory research based on different formulations, e.g. – CBT. The evidence base for the efficacy of CBT in reducing recidivism and improving psychotic symptomatology supports an examination of any multiple causality and the interplay of different factors that may be involved in this successful treatment.

1.9 Current Study and Aims

The current literature review has attempted to develop an understanding of psychotic disorders by using a cognitive behavioural framework. Research has highlighted the role of individual cognitive, behavioural and emotional processes in the maintenance and perhaps even development, of psychosis; using a CBT based intervention can ameliorate psychotic symptomatology. However, there has been little attempt to investigate the

presence and nature of any interaction between all of these cognitive, behavioural and emotional processes in people with psychotic disorders. If they independently exist as distinct processes in people with psychotic disorders in comparison to the non-psychiatric population, it is important within the CBT framework to study the interaction. There is also a body of research suggesting some of these processes may be implicated in the increased risk of people with psychotic disorders offending. If this is the case, then these processes may be predictive of future risk of offending in people with psychosis. Therefore, the current study draws on the literature on psychosis and offending using an exploratory design.

Specifically, the aims of this study are to examine cognitive, behavioural and emotional processes in three groups of people, all of whom have a diagnosed psychotic disorder and to explore whether these processes differ across groups. There is a group who have never offended, a group with a minor offending history and a group with a major offending history. Cognitive processes will be measured using two assessments, a forensic Locus of Control (LOC) questionnaire and a Conviction of Beliefs (COB) scale. Behavioural processes will be measured using the Coping Responses Inventory (CRI); in addition, subjects will be interviewed about any history of substance abuse. Finally, emotional processes will be measured using the Beck Depression Inventory – 2nd edition (BDI II) and the Beck Anxiety Inventory (BAI).

1.10 Hypotheses

1.10.1 Cognitive Hypotheses

1a. Locus of control, as measured by the Locus of Control (LOC) scale, will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories;

1b. Conviction of beliefs about psychotic symptoms, as measured by the Conviction of Beliefs (COB) scale, will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories;

1.10.2 Behavioural Hypotheses

2a. The types of coping strategies used in relation to psychotic symptoms, as measured by the Coping Responses Inventory (CRI), will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories;

2b. The nature of substance abuse, as measured by clinical interview, will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories;

1.10.3 Emotional Hypotheses

3a. Levels of depressive symptomatology, as measured by the Beck Depression Inventory – 2nd edition (BDI II), will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories;

3b. Levels of anxiety symptomatology, as measured by the Beck Anxiety Inventory (BAI), will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories.

CHAPTER 2: METHODS

2.1 Subjects

2.1.1 Ethical Approval

An application for ethical approval for the study was made to Grampian Research Ethics Committee in February 2002. This was conditionally granted in March 2002 (Appendix 1) and a formal acceptance was finally granted in May 2002 (Appendix 2). An application for an extension to this was applied for and granted in October 2002 in order to recruit additional subjects. This was reviewed on a three monthly basis thereafter, for which this researcher has documentation.

2.1.2 Introduction to The Blair Unit

This study was conducted within The Blair Unit at Royal Cornhill Hospital, Aberdeen. This is a low secure unit for mentally disordered offenders within a psychiatric hospital; it has capacity for 43 in-patients. This is comprised of an eight bed Forensic ward which usually admits people through the Courts post-offence and through transfers from prison or other secure hospitals. There is a 16 bed Forensic Rehabilitation ward which is for patients whose mental illness has stabilised and who are working towards a discharge either into the community or to Great Western Lodge. The Lodge is an eight-bed NHS community house under the clinical supervision of The Blair Unit. Finally, the unit has an 11 bed Intensive Psychiatric Care Unit that is for people who become unmanageable and/or violent while in hospital. People in this Unit are not necessarily from a forensic population.

In addition, outreach and out-patient services are provided. Referrals are tertiary and come through the Courts or occasionally, GP's, as well as through members of the team. The nature and frequency of offending behaviour differs greatly among the patients. There are no formal audits to show the overall patient demography. However, anecdotally most patients have a psychotic disorder and there are more young males receiving input from the unit than females.

The Blair Unit has a multi-disciplinary team who meet twice weekly to review patient care. In December 2001, the unit started a new initiative for admissions called 'Integrated Care Pathways'. This means that within a six-week period, each member of the team will assess all admissions.

2.1.3 Recruitment

People who were currently receiving either out-patient or in-patient care from the Blair Unit at Royal Cornhill Hospital, Aberdeen were invited to take part in the study. As the study progressed, some patients from the psychiatric rehabilitation service at the hospital were also invited to participate to help maximise the sample size. The difficulties in obtaining subjects will be discussed later (section 4.2.1).

Initially, Nursing Managers and Consultant Psychiatrists were consulted to help identify suitable participants based on the inclusion and exclusion criteria. Permission was sought and granted from the Responsible Medical Officer (RMO) for each potential participant prior to approaching the individual. Patients who were considered unable or

unsuitable to participate according to inclusion criteria were not invited to do so. In total, over a hundred potential participants were approached. This comprised six patients from the community ward of the Blair Unit; ten patients from Intensive Psychiatric Care Unit within the Blair Unit; seven patients from Forensic ward of the Blair Unit; 13 patients from Forensic Rehabilitation ward within the Blair Unit; 35 out-patients of the Blair Unit; the additional recruitment was with patients from Psychiatric Rehabilitation wards within the hospital and out-patients of the psychiatric rehabilitation service. The latter two services were included to help maximise subject numbers and to access a non-forensic population.

Once these potential participants were identified, they were given an information sheet to read about the study (Appendix 3) either by the researcher or by their named nurse and given opportunity to discuss this if required. In some cases, their Consultant Psychiatrist gave this to the participant. These people were also encouraged to discuss the information sheet with family and friends. A week later, the potential participants were again approached and were asked if they wished to participate; those who agreed were asked to sign a consent form (Appendix 4).

2.1.4 Inclusion and Exclusion Criteria

In addition to the requirements of participants receiving care from the Blair Unit and latterly, from psychiatric rehabilitation services, as discussed in section 2.1.3, the following criteria for participation were used (over page):

Table 2: Inclusion and Exclusion Criteria

Group	Inclusion Criteria	Exclusion Criteria
No offending history	1. Current ICD-10 diagnosis of a psychotic disorder 2. No criminal convictions as an adult	1. Current florid psychotic symptoms 2. Personality Disorder
Minor Offending History	1. Current ICD-10 diagnosis of a psychotic disorder 2. Criminal convictions as an adult; below median	1. Current florid psychotic symptoms 2. Personality Disorder
Major Offending History	1. Current ICD-10 diagnosis of a psychotic disorder 2. Criminal convictions as an adult; above median	1. Current florid psychotic symptoms 2. Personality Disorder

2.1.5 Demography of the Sample

Results are based on data provided by a final sample of 26 participants who met the required criteria, discussed previously. These participants were assigned a randomised number before being divided into the three groups. These groups are people with: no offending history (N=9), people with a minor offending history (N=8) and people with a major offending history (N=9). All participants had an ICD-10 (1999) diagnosis of a psychotic disorder and were receiving neuro-leptic medication for this. The following tables numbered 3 to 6 illustrate the demographic characteristics of each group:

Table 3: Age and gender distribution across groups

Group	Age range	% of males	% of females
No Offending History (N=9)	25-54 years	66.7%	33.3%
Minor Offending History (N=8)	25-65 years	100%	0%
Major Offending History (N=9)	28-71 years	100%	0%

Table 4: Hospital and prison backgrounds across groups

Group	% of Current In-patients	% of Current Out-patients	% with previous imprisonment
No Offending History (N=9)	33.3%	66.7%	0%
Minor Offending History (N=8)	37.5%	62.5%	37.5%
Major Offending History (N=9)	66.7%	33.3%	77.8%

Table 5: Types of offences committed across the two groups with offending histories

Type of Offence	% of people with minor offending history (N = 8) convicted of:	% of people with major offending history (N = 9) convicted of:
Child Abuse	0%	11.1%
Murder	0%	11.1%
Attempted Murder	11.1%	11.1%
Abduction	0%	11.1%
Violent Assault	37.5%	33.3%
Rape	0%	11.1%
Attempted Rape	0%	11.1%
Sexual Assault	25%	22.2%
Exhibitionism	12.5%	0%
Arson	12.5%	0%
Breaking & Entering	0%	33.3%
Theft (shops)	12.5%	22.2%
Burglary (homes)	0%	11.1%
Breach of Peace	0%	11.1%

For the sake of clarity, the commonly used definitions of offences have been used in table 5 rather than legal terminology. Offences have been categorised according to the Cormier-Lang System for Quantifying Criminal History (section 2.4; Appendix 10); all offences committed in adulthood were used in quantifying criminal history and group categorisation was done according to a subject's score in relation to the median. Therefore, some subjects have committed more than one crime and these crimes may be different types of offences. This explains why attempted murder is found in both the minor and major offenders groups. In addition, four people have offended in the past year; three of them are in the group with major offending histories and one person is in the group with minor offending histories.

Table 6: Psychiatric diagnoses across groups

Group	% with Diagnosis of Schizophrenia	% with Diagnosis of Paranoid Psychosis	% with Diagnosis of Bi-polar Affective Disorder	% with Diagnosis of Psychotic Depression	% with Diagnosis of Unspecified Psychotic Disorder
No Offending History (N=9)	55.6%	11.25%	11.25%	11.25%	11.25%
Minor Offending History (N=8)	50%	12.5%	12.5%	0%	25%
Major Offending History (N=9)	22.2%	22.2%	22.2%	0%	33.4%

2.2 Design

A mixed design was used. The dependent variables are the five questionnaires that were completed by each subject (within subjects). The independent variable is the severity of a person's offending history; this determines which of the three study groups a person is assigned to (between subjects). The groups were not matched for age, gender or type of psychotic disorder; these were treated as covariates.

In designing the current study, reference was made to Bannister (1968). As far back as 1968, this author was discussing methodological difficulties in conducting research with a psychotic population. Bannister reported a 10% growth rate per year into research into schizophrenia. However, Bannister concluded that a lot of these studies were poorly designed and did not have a theoretical framework in which to compare diagnostic and operational issues.

2.3 Measures

2.3.1 Sex Offender Assessment Pack: Locus of Control Questionnaire (LOC)

The LOC scale (Appendix 5) used is one of many questionnaires derived from the Adult Sex Offender Assessment Pack (SOAP) compiled by Beckett, Beech & Fisher (2000). This is a comprehensive battery of forensic assessments. These researchers attribute the LOC scale to Nowicki (1976); it is designed to measure:

> '...the extent to which subjects feel that events are contingent on their behaviour and the extent to which they feel events are controlled externally'. (Page 1)

Although this assessment pack is aimed at sex offenders, the questions in the LOC scale are non-specific to the nature of offending and therefore, the scale is suitable for generic use both within and out with offending populations. The LOC scale consists of 40 statements to which an individual answers yes or no, depending on whether or not they agree with the statement. Each statement is worth either 1 or 0 points with a scale maximum of 40 points. The individual's total score can then be used to determine their locus of control. This is considered stable over time. The higher the score, the more an individual has an external locus of control.

Beckett, Beech & Fisher (2000) report on data from normative research with 402 men and 787 women. On the scoring profile, a t-score of 50 represents the mean scores within the normal population; this is between 5 and 16 points. People whose score lies above or below this range can be described in terms of standard deviations from the

norm. These researchers also report validity and reliability of the LOC scale in relation to 81 non-offenders.

2.3.2 Conviction of Beliefs Scale (COB)

There are no standardised measures of the strength of a person's convictions about their psychotic symptomatology. Visual analogue and likert scales are commonly used to obtain a qualitative measure of this. Delahunty (2001) devised the COB scale (Appendix 6) from a paper by Chadwick, Sambrroke, Rasch & Davies (2000). In their paper, these researchers used questions and rating scales to measure an individual's conviction in three beliefs about their voices; these were 'power', 'control' and 'personal meaning'. They asked people to indicate their conviction for each question by marking on a line anchored at either end by 0% or 100% pre and post treatment. Similarly, Delahunty's scale used the above three conviction of beliefs of 'power', 'control' and 'personal meaning'. The latter was further sub-divided into 'purpose' and 'identity'. In addition another question measuring 'control over the voice' was added.

The COB scale consists of five questions aimed to elicit people's beliefs about their voices. In this study, people were asked to answer the questions in accordance to their personal symptoms. For example, if a person did not hear voices but had a delusional belief the question 'How much control does the voice have over you?' would be re-phrased as "How much control does the belief have over you?" The anchors for this particular question are 0% 'no control at all' and 100% 'complete control'. If a person could not answer a question or felt that it was not relevant to them, then no score was

recorded. The aim of this questionnaire is to explore peoples' beliefs about their symptoms; there is no normative data against which to compare subjects' performances. However, this scale was used because there are no other measures of beliefs about psychotic symptoms available.

2.3.3 Coping Responses Inventory (CRI)

The CRI (Appendix 7) is one of three questionnaires that forms a portfolio comprised by Milne (1992) to measure stress, coping and distress in an adult psychiatric population. Milne attributes the origins of the CRI to Moos (1990); it is designed to measure a person's coping styles in response to a difficult event that they have experienced over the past 12 months. In this study, subjects were asked to use coping with their psychotic illness as their difficult event. Initially, subjects are asked 10 questions to help clarify their difficult event before completing the main part of the questionnaire. The CRI is a 48-item questionnaire based on eight sub-scales of coping strategies; four of these are considered adaptive or good strategies (approach) and four are considered maladaptive or poor strategies (avoidance). These are replicated in table 7:

Table 7: Eight sub-scales measured by the Coping Responses Inventory

	Approach Coping Responses	Avoidance Coping Responses
Cognitive Coping Strategies	* Logical Analysis * Positive reappraisal	* Cognitive avoidance * Acceptance or resignation
Behavioural Coping Strategies	* Seeking guidance and support * Taking problem solving action	* Seeking alternative rewards * Emotional discharge

On the CRI, the person is asked to rate the relevance of each of the 48 items to their own difficult experience on a four point frequency scale from 0 'no' to 3 'yes, fairly often'. For clinical purposes, a profile can be constructed of an individual's performance on all eight sub-scales and their total score can be standardised and compared with normative data from 2000 clinical and non-clinical subjects. Generally, the higher the score on the approach sub-scales the better the coping repertoire; the higher the score on the avoidance sub-scales the less adaptive the coping. This is not meaningful for statistical and research purposes if a person's overall score is being used. The CRI was still chosen for the current study, as it is the most comprehensive assessment of different coping strategies. However, in order to make the total score meaningful for research purposes, scores for the four avoidance sub-scales were reverse scored for each subject in the following way:

3 becomes 0; 2 becomes 1; 1 becomes 2; 0 becomes 3

This allows for meaningful comparisons to be drawn between individuals and statistical inferences to be drawn. In this way, higher total scores reflect better coping styles whilst lower total scores reflect poorer coping styles.

Milne (1992) reports that the CRI has reliability as a whole questionnaire; there is internal consistency among the eight sub-scales. This is demonstrated by use of a correlation matrix. A sample of 624 people also demonstrated test-retest consistency over one year. In terms of validity, the CRI correlates significantly with earlier coping questionnaires with alpha coefficients between 0.56 and 0.83.

2.3.4 Beck Depression Inventory – 2nd edition (BDI II)

The BDI II (Appendix 8) is a revision of the earlier scale; it was revised in 1996 by Beck, Steer & Brown. The BDI II measures severity of depression and consists of 21 self-report items. It is suitable for people over the age of 13 years old. The person rates the relevance of each item to themselves, over the past two weeks, on a four-point scale from 0 to 3. Their total scores are then categorised according to level of depression as either 'minimal' (0-13 points); 'mild' (14-19 points); 'moderate' (20-28 points) or 'severe' (29-63 points).

Beck, Steer & Brown (1996) reported internal consistency for the BDI II with alpha coefficients of 0.92 for depressed out-patients and 0.93 for college students. These researchers also established test-retest validity with a correlation of 0.93, approximately one week apart. Factorial validity was established with a correlation matrix showing inter-correlations between the 21 items. Construct validity was established using other comparable measures of depression; significant positive Pearson correlations were found. This measure was chosen for its established clinical and research validity.

2.3.5 Beck Anxiety Inventory (BAI)

The latest manual for the BAI (Appendix 9) was written by Beck & Steer in 1993; although not a full revision of the original assessment, the 1993 manual has different scoring categorisation. The BAI measures severity of anxiety and is suitable for adults and adolescents. The BAI consists of 21 descriptive statements of anxiety; the individual self-reports the applicability of each item to themselves, over the past week, on a four-

point scale from 0 to 3. Their total scores are then categorised according to level of anxiety as either 'minimal' (0-7 points); 'mild' (8-15 points); 'moderate' (16-25 points) or 'severe' (26-63 points).

Beck & Steer (1993) reported internal consistency for the BAI with alpha coefficients of 0.92 for mixed sample out-patients and 0.94 for patients with a psychiatric diagnosis of anxiety disorder. Factorial validity was established using a principal-factor analysis with a promax rotation of 393 patient scores; this showed high inter-correlations. Beck & Steer (1993) also report a level of discriminant validity between patients with primary and secondary mental disorders, significant to $p<.001$, although the BAI was not originally designed to be used for diagnostic differentiation. This measure was chosen for its established clinical and research validity.

2.3.6 Clinical Interview

In addition to the five questionnaires, all participants were asked about their illness and how it affects their daily life. Specific attention was paid to the symptoms experienced by people and times when these symptoms have been particularly difficult to them. Questions were led by subjects' answers. This helped to clarify that subjects did indeed meet the inclusion criteria of the study and that the exclusion criteria was not applicable.

All participants were asked about their history of hospital care and specific details about their offending behaviour, if applicable. In addition, subjects were asked about their alcohol and illicit drug use, both currently and historically.

2.4 Procedure

After people agreed to take part in the study, the researcher met with a member of nursing staff or the Consultant Psychiatrist to gain a background history on each participant. This included psychiatric diagnosis and the nature of any offending history. Again, this helped ensure that inclusion and exclusion criteria were met and that participants' histories were accurate.

Participants were then assigned to one of the three groups according to their history. The three groups are non-offenders; minor offending histories and major offending histories. The distinction between minor and major offenders was not made arbitrarily. There are a number of classification systems for quantifying peoples' criminal histories. Common distinctions are between offences against people and offences against property. However, some of the participants in this study had both of these types of offences; this reflects the general criminal population. Therefore, this distinction would not have been helpful to the current study in looking at a person's overall criminality. It was therefore decided to use the Cormier-Lang System for Quantifying Criminal History (Appendix 10), taken from Quinsey, Harris, Rice & Cormier (1998).

The Cormier-Lang System is based on the Criminal Code of Canada that is itself based on British Common Law. This system assigns a point value to individual criminal acts that are divided into Group 1 (offences against people) and Group 2 (offences against property). However, unlike other classification systems, this one allows for people committing crimes from both groups. Points were calculated for all participants with

criminal histories; all offences in adulthood that were dealt with by the legal system were used in this calculation. All participants with a score below the median (which was 10) were placed in the minor offending history group. All participants with a score above the median of 10 were placed in the major offending history group. There was one participant who scored 10; this subject was placed in the major offending history group due to the nature of their crimes. The subject was in fact a paedophile and had offended recently; the criminality score was low because this person had not always been through the criminal justice system.

Participants were then asked to complete the five questionnaires with the researcher, either at their home or in hospital, as appropriate. There were three exceptions to this; these participants did not wish to disclose their histories to a stranger but agreed to do the study with their community psychiatric nurse (CPN). The researcher went to a meeting with the CPN's in forensic outreach services to describe the nature and purpose of the study. All CPN's in the service were then shown how to administer the five questionnaires by the researcher. Fortunately, all of the questionnaires are self-explanatory, designed for self-report and therefore simple to complete and do not require a psychologist to administer them. Administration took between 45 and 90 minutes.

Participants were then debriefed, thanked for their participation and given the opportunity to discuss any issues that had arisen for them in the course of completion. None of the subjects reported finding the experience distressing.

2.5 Data Analysis

Both inferential and descriptive statistics were used in the study. Data from the study was analysed using the Statistical Package for the Social Sciences version 10 for Windows (SPSS) in accordance to the accompanying manual by Kinnear & Gray (2000). All tests are 2-tailed and results are reported at the .05 level of significance, unless otherwise stated.

Initially, an exploration of the data was conducted and transformations and cleaning up of data completed as necessary. A series of one- way analyses of variance were used to calculate group comparisons between four of the measures across the three groups. Consideration was given to applicability of using both parametric and non-parametric tests; non-parametric analysis was completed using the Kruskal-Wallis (unrelated) test. The COB scale was removed from the statistical analysis as it yielded minimal results (section 3.1.2). Possible effects of co-variates were also examined. The data was analysed for bi-directional results. Although relevant literature to this study can help to predict the direction of the results, this study is the first to draw together the literature from CBT in psychosis and in offending. Therefore, it was deemed appropriate to use 2-tailed statistical tests and exploratory methods so that no significant results were overlooked (Greene & D'Oliveira, 1999).

2.6 Power Analysis

In the absence of previous studies to draw on, it was decided to look at the data for large effect sizes. This was to account for the vast amount of variance expected between and

within groups. In addition, as this study is policy directed and may have implications for treatment priorities within a service, smaller effect sizes are not relevant. Using Cohen's (1992) power analysis table, a sample of 21 in each group is required to show large effect sizes with a one-way analysis of variance comprising three groups.

The review of the literature at the beginning of this study has shown that research with people with psychotic disorders tends to have small sample sizes due to difficulties obtaining willing participants. However, studies have demonstrated significant results with small sample sizes although caution must be applied in the interpretation and application of these studies.

CHAPTER 3: RESULTS

3.1 Exploration and Transformation of Data

3.1.1 Distributions

Data was collected from the three groups: non-offenders (N=9); people with minor offending histories (N=8) and people with a major offending history (N=9). Group membership is the independent variable. Initially, the data from the five measures were checked for distribution of the data set to ensure they were normally distributed with the same kind of variance. Data from the COB scale was eliminated from the analysis on the grounds that it showed no inferential statistical relevance to study (section 3.1.2). Variables showing significant skewness or kurtosis were transformed, as this would yield improved results (Tabachnick & Fidell, 2001). Both the BDI II and BAI data were found to depart from normality and log (x + 1) transformations were carried out on them to distribute them normally. Final analysis was completed using data from the four dependent variables of LOC questionnaire; CRI; BDI2log and BAIlog.

3.1.2 Conviction of Beliefs Scale (COB)

The decision to leave the data from the COB scale out of the final analysis was made at the exploratory data stage. This was because of the high number of missing data from subjects who could not answer the questions and because of the high number of zero responses. Therefore, inferential statistics are not appropriate for this type of data. During administration, it was apparent that this scale was not appropriate for measuring current beliefs about psychotic symptomatology among this sample. As one of the

exclusion criteria of this study was that participants had no florid psychotic symptoms, the majority of subjects did not feel this questionnaire was applicable to their current mental state and could only answer the questions in the COB scale retrospectively, with reference to a time when their psychotic symptoms were florid. The current study was interested in examining current conviction of beliefs but it would appear that this does differ greatly according to severity of symptoms. However, this scale was used in the absence of any other suitable scale. The subjects in the current study suffered from varying degrees of psychosis but they all shared the common feature of being well at the time of participation. As they had all been in the psychiatric system for some time, they were receiving optimal levels of medication and other interventions for them. However, the results are still worth commenting on and will be discussed later (section 3.4.2).

3.1.3 Sub-scales of Coping Responses Inventory (CRI)

The CRI has eight sub-scales as discussed in section 2.3.3, which represent different coping strategies. For the purposes of this study, subjects' total scores for the questionnaire were used in the analysis, with the four avoidance sub-scales being reverse scored to reflect overall coping styles. Milne (1992) reported internal consistency between the eight sub-scales. As part of the exploratory phase of data handling, a correlation matrix was calculated using Pearson correlation co-efficient (2-tailed). This was to examine the level of association between subjects' scores on the eight sub-scales of this study (Appendix 11).

The correlation matrix shows that there are seven correlations between the sub-scales that are significant beyond the 1 per cent level.....

- Seeking Guidance and Support (sub-scale 3) correlates with Logical Analysis (sub-scale 1); $r = 0.501$; $n = 26$; $p<0.01$
- Acceptance or Resignation (sub-scale 6) correlates with Logical Analysis (sub-scale 1); $r = -0.591$; $n = 26$; $p<0.01$
- Taking Problem Solving Action (sub-scale 4) correlates with Logical Analysis (sub-scale 1); $r = 0.506$; $n = 26$; $p<0.01$
- Logical Analysis (sub-scale 1) correlates with Emotional Discharge (sub-scale 8); $r = -0.542$; $n = 26$; $p<0.01$
- Positive Appraisal (sub-scale 2) correlates with Seeking Alternative Rewards (sub-scale 7); $r = -0.536$; $n = 26$; $p<0.01$
- Taking Problem Solving Action (sub-scale 4) correlates with Seeking Alternative Rewards (sub-scale 7); $r = -0.597$; $n = 26$; $p<0.01$
- Cognitive Avoidance (sub-scale 5) correlates with Emotional Discharge (sub-scale 8); $r = 0.503$; $n = 26$; $p<0.01$

.....and there are four correlations between the sub-scales that are significant beyond the 5 per cent level:

- Cognitive Avoidance (sub-scale 5) correlates with Logical Analysis (sub-scale 1); $r = -0.405$; $n = 26$; $p<0.05$
- Seeking Alternative Rewards (sub-scale 7) correlates with Seeking Guidance and Support (sub-scale 3); $r = -0.483$; $n = 26$; $p<0.05$

- Seeking Guidance and Support (sub-scale 3) correlates with Emotional Discharge (sub-scale 8); $r = -0.397$; $n = 26$; $p<0.05$
- Emotional Discharge (sub-scale 8) correlates with Taking Problem Solving Action (sub-scale 4); $r = -0.414$; $n = 26$; $p<0.05$

These results were checked against a Kendall's tau-b correlation (2-tailed). This test was chosen over the Spearman because it is better suited to small sample sizes. This yielded similar results to the Pearson.

3.1.4 Questionnaire Administration

As discussed in section 2.4, three subjects completed the questionnaires with their CPN rather than the researcher; one CPN administered the measures to one subject and another CPN administered the measures to the other two subjects. The questionnaires are designed for self-report and are relatively simple to complete; the CPN's were trained in the administration of them by the researcher. Therefore, no significant differences were expected between the questionnaires administered by the CPN's and those administered by the researcher.

Exploration of the data shows that the scores for BDI II and BAI from two subjects, who each completed the questionnaires with a different CPN, are markedly higher than the rest of the sample. This is responsible for the skewness found in these two variables. The third subject who completed the questionnaires with a CPN did not show this elevation

in scores. On closer inspection, these differences are more likely to be attributed to patient variables rather than to any differences in administration. One subject is known to the researcher and has a diagnosable hypochondriacal element to their psychotic symptomatology. The other subject is a paedophile who is under current investigation for alleged offences, therefore a strong affective component may be attributable to this. However, as there is no independent measure of symptom extremity, this cannot be evaluated further.

3.1.5 Correlation Matrix of Dependent Variables

Prior to final analysis, a Pearson correlation matrix (2-tailed) was used to examine any significant associations between the four dependent variables (Appendix 12), given the hypothesised interaction between some of the psychological processes measured. The results indicate a high correlation between the BAI and the BDI II, significant beyond the 1 per cent level:

- The transformed scores for the BAI correlate with the transformed scores on the BDI II; $r = 0.816$; $n = 26$; $p<0.01$
- There is also a correlation between the BAI and the LOC, significant beyond the 5 per cent level; $r = 0.408$; $n = 26$; $p<0.05$.

These collinearities must be taken into account in the final analysis

These results were checked against a Kendall's tau-b correlation (2-tailed). This test was chosen over the Spearman because it is better suited to small sample sizes. This yielded similar results to the Pearson.

3.2 Consideration of Parametric and Non-Parametric Tests

Consideration was given to the applicability of both parametric and non-parametric tests to the inferential analysis of this study, in light of the small sample size, slightly uneven group sizes and the association between some dependent variables. Tabachnick & Fidell (2001) suggest a ratio of 3:1 for subjects to variables should be met before using parametric tests. However, there are other authors who state that parametric tests are robust even when some of their assumptions are violated, for example, size and linearity (Kinnear & Gray, 2000 and Clark-Carter, 1997). Clark-Carter (1997) states that certain parametric tests such as analysis of variance are robust even when some of their assumptions are violated and that non-parametric tests are not entirely free of any assumptions about distribution. Therefore, it may be inappropriate to use only non-parametric tests and thus increase the risk of committing a Type II error because no adequate post-hoc power analysis could be calculated (Clark-Carter, 1997). It is suggested that parametric tests are used initially even if the assumptions are not met and non-parametric tests can be used after as a cautionary and comparable measure to provide a compromise between test power and any risks involved in the testing of the hypotheses.

Although originally conceived as a predictive study, further examination revealed that this was not the case because the design is not entirely predictive of causality or conceptual. A comparison across groups was required to best test the hypotheses. A multivariate analysis of variance was not appropriate, as it does not allow for a non-parametric comparison to be made. Due to the suitability of the data to non-parametric

analysis, a series of one-way analyses of variance were completed and compared to results from the Kruskal-Wallis test. It is acknowledged that running a series of one-way analyses of variance does inflate the error term; this is particularly pertinent in the interpretation of significant results. However, this does allow for a convenient way to explore the multivariate angles of data while also comparing results to a non-parametric equivalent.

3.3 Analysis of Co-Variates

Consideration was given to whether or not there were any effects of the co-variates of gender, age and type of psychotic disorder on the four measures.

As there were only three females in the sample and they were all in the non-offenders group, closer examination of gender effects was not deemed appropriate. A Pearson's correlation matrix (2-tailed) was used to examine the correlation with age across the four measures. Results showed that there were no significant effects of age.

A Chi-square was constructed to explore whether or not there was a relationship between groups and the type of psychotic disorder. Given the small sample size and uneven distribution of types of psychosis, no association can be ascertained (Kinnear & Gray, 2000). Chi-square is unsuitable for assessing strength of association because it is affected by the total frequency.

There is insufficient evidence to suggest any significant effects of co-variates. Therefore, it is inappropriate to proceed using analyses of covariance in the inferential analysis (Tabachnick & Fidell, 2001).

3.4 Analysis of Cognitive Processes in Psychosis

3.4.1 Hypothesis 1a

Locus of control, as measured by the Locus of Control (LOC) scale, will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories.

A one-way analysis of variance did not find significant differences between the three groups on locus of control:

$F(2, 23) = 1.120$; $p = 0.343$.

Therefore, the null hypothesis must be accepted. The Levene statistic was examined to check that the assumption of homogeneity of variance is tenable. The non-significant figure confirms that there is no evidence for heterogeneity of variance ($p = 0.188$).

Non-parametric analysis was also conducted for appropriateness with the data and comparability with the parametric findings. The Kruskal-Wallis test yielded similar results to the analysis of variance; no significant differences were found between the three groups on locus of control:

X squared (1) = 0.839; $p = 0.360$.

The null hypothesis must be accepted.

Post-hoc multiple comparisons were examined using the Tukey test to further examine group differences. There were no significant differences found between any two groups or in homogeneous subsets.

For interest, a boxplot, was constructed to further examine the distribution of mean locus of control scores across the three groups. Higher scores are representative of external locus of control. The differences between mean scores are not significant.

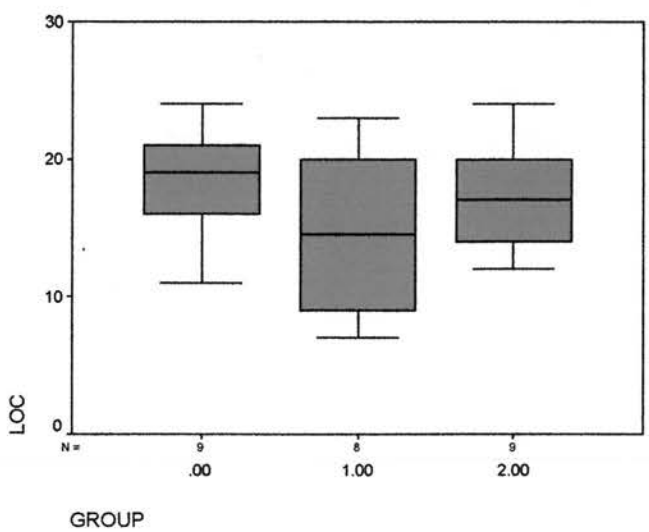
Key to boxplot

.00 = Non-offenders

1.00 = Minor offenders

2.00 = Major offenders

Figure 2: Boxplot of locus of control categorised by group membership



3.4.2 Hypothesis 1b

Conviction of beliefs about psychotic symptoms, as measured by the Conviction of Beliefs (COB) scale, will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories.

As discussed previously (section 3.1.2), subjects had difficulties answering the questions on the COB scale in relation to their current mental state. Subjects responses are classified as either unable to answer the question; 0% if subjects said a definite no in relation to current mental state and as a conviction over 50% if subjects responses were over 50% in relation to a time when their psychotic symptoms were florid. No inferential statistics were calculated.

During scoring, it was noted that some subjects gave two responses to questions. For example, a lot of people replied that their conviction of belief to the question is 0% now but it was 100% when they were unwell and/or offending. In these cases, the reply was scored as being over 50% conviction when unwell.

Descriptive statistics show the distribution of answers to the five questions, in the current sample (tables 8 – 12):

Table 8: Answers across the three groups to Question 1 of the COB scale "How much do you believe that the voice belongs to .....?"

Group	% unable to answer	% answering 0%	% answering over 50% when unwell
No Offending History (N=9)	33.3%	22.2%	44.5%
Minor Offending History (N=8)	25%	50%	25%
Major Offending History (N=9)	22.2%	22.2%	55.6%

The question asks who or what people think their symptoms are; this is defined as perceived identity. In summary, both non-offenders and people with major offending histories had stronger convictions in a perceived identity to their symptoms (delusions or hallucinations) when they were unwell. The majority of minor offenders did not perceive any identity for their symptoms. The non-offenders group had the highest number of participants that were unable to answer this question.

Table 9: Answers across the three groups to Question 2 of the COB scale "How much do you believe that the purpose of the voice is to .....?"

Group	% unable to answer	% answering 0%	% answering over 50% when unwell
No Offending History (N=9)	33.3%	0%	66.7%
Minor Offending History (N=8)	50%	37.5%	12.5%
Major Offending History (N=9)	33.3%	22.2%	44.5%

In summary, a majority from the major offenders and non-offenders groups had convictions over 50% as to the purpose of their symptoms when they were unwell. This means they had attributed a purpose to their symptoms. The majority of the minor offenders could not answer this question.

Table 10: Answers across the three groups to Question 3 of the COB scale "How powerful is the voice?"

Group	% unable to answer	% answering 0%	% answering over 50% when unwell
No Offending History (N=9)	0%	33.3%	66.7%
Minor Offending History (N=8)	37.5%	50%	12.5%
Major Offending History (N=9)	22.2%	22.2%	55.6%

In summary, a majority of the non-offenders had convictions over 50% as to the perceived power of their symptoms when they were unwell, as did a majority from the major offenders group. The majority of the minor offenders group did not attribute any power to their symptoms currently.

Table 11: Answers across the three groups to Question 4 of the COB scale "How much control does the voice have over you?"

Group	% unable to answer	% answering 0%	% answering over 50% when unwell
No Offending History (N=9)	11.1%	44.45%	44.45%
Minor Offending History (N=8)	37.5%	50%	12.5%
Major Offending History (N=9)	22.2%	44.5%	33.3%

In summary, the majority of the major and minor offenders groups did not attribute any power to their symptoms. An equal majority of non-offenders had a conviction of power over 50% attributed to their symptoms when they were unwell with an equal majority of non-offenders who did not attribute any power to their symptoms.

Table 12: Answers across the three groups to Question 5 of the COB scale "How much control do you have over the voice?"

Group	% unable to answer	% answering 0%	% answering over 50% when unwell
No Offending History (N=9)	11.1%	55.6%	33.3%
Minor Offending History (N=8)	25%	62.5%	12.5%
Major Offending History (N=9)	22.2%	33.3%	44.5%

In summary, the majority of the major offenders had a conviction over 50% that they could control their symptoms when they were unwell. Majorities from the minor offenders and non-offenders groups believed that they had no control over their symptoms currently.

3.5 Analysis of Behavioural Processes in Psychosis

3.5.1 Hypothesis 2a

The types of coping strategies used in relation to psychotic symptoms, as measured by the Coping Responses Inventory (CRI), will significantly differ between the three

groups: non-offenders; people with minor offending histories and people with major offending histories.

A one-way analysis of variance did not find significant differences between the three groups on coping strategies:

$F(2, 23) = 0.629$; $p = 0.542$.

Therefore, the null hypothesis must be accepted. The Levene statistic was examined to check that the assumption of homogeneity of variance is tenable. The non-significant figure confirms that there is no evidence for heterogeneity of variance ($p = 0.508$).

Non-parametric analysis was also conducted for appropriateness with the data and comparability with the parametric findings. The Kruskal-Wallis test yielded similar results to the analysis of variance; no significant differences were found between the three groups on coping strategies:

X squared (1) = 1.449; $p = 0.229$.

The null hypothesis must be accepted.

Post-hoc multiple comparisons were examined using the Tukey test to further examine group differences. There were no significant differences found between any two groups or in homogeneous subsets.

For interest, a boxplot, was constructed to further examine the distribution of mean coping strategies scores across the three groups. Higher scores are representative of better coping. The differences between mean scores are not significant.

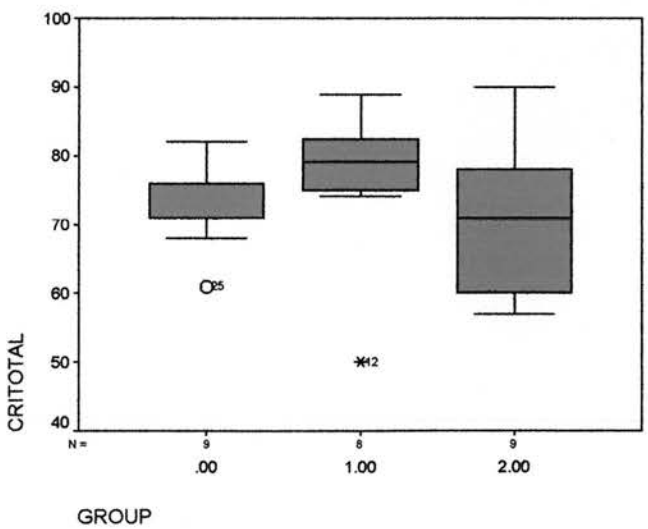
Key to boxplot

.00 = Non-offenders

1.00 = Minor offenders

2.00 = Major offenders

Figure 3: Boxplot of coping strategies categorised by group membership



3.5.2 Hypothesis 2b

The nature of substance abuse, as measured by clinical interview, will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories.

Descriptive statistics were used to examine the differences in substance abuse across the three groups. Figure 4 illustrates the distribution of *current* alcohol usage across the three groups (over page). Most subjects were happy to discuss current alcohol use.

In summary, the majority from all groups drinks fewer than five units of alcohol per week. However, both the minor and major offending histories groups have a considerable proportion of people who have a diagnosis of alcohol dependency disorder. The non-offending group has the highest number of non-drinkers.

Figure 4: Frequency of alcohol use across the three groups

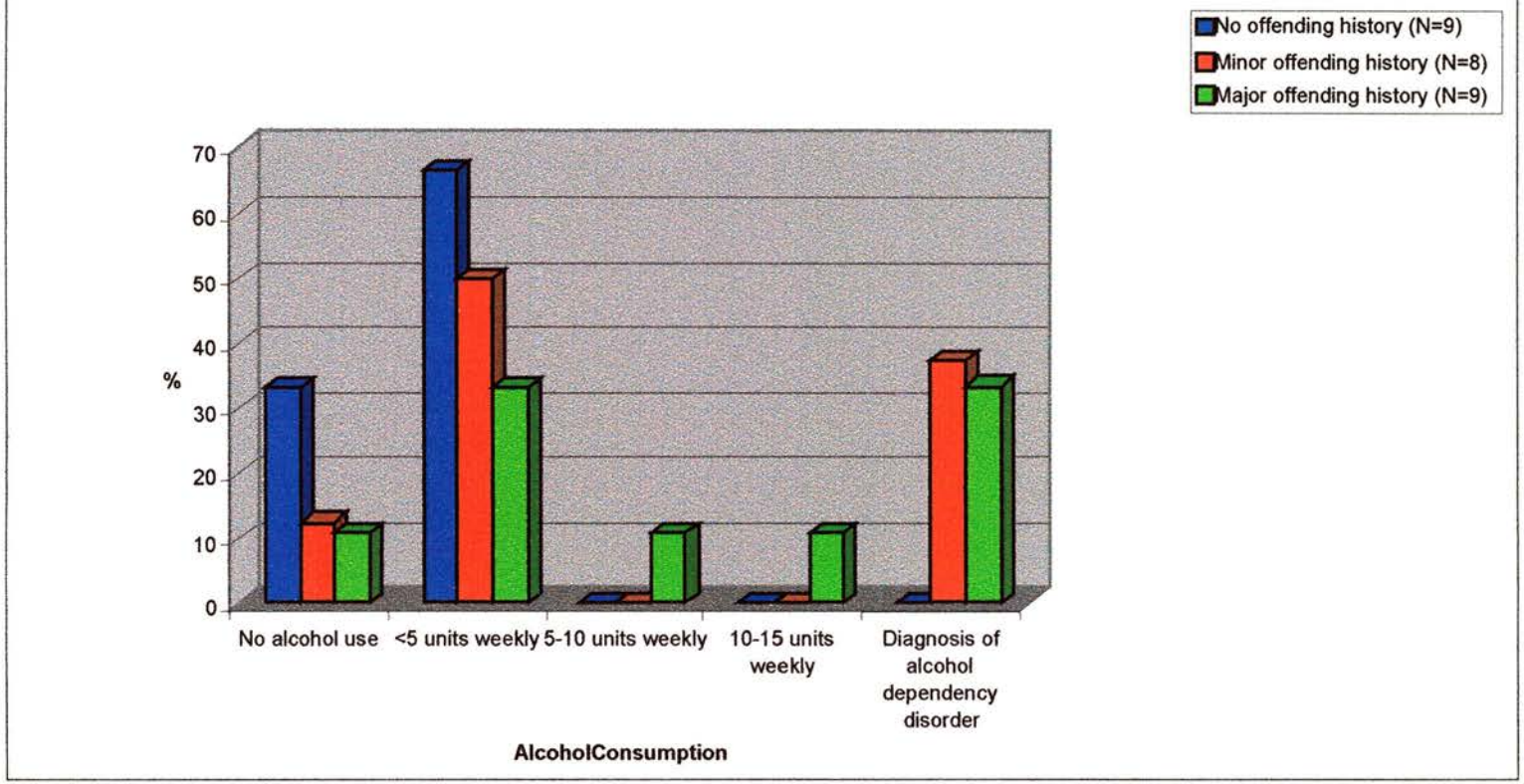
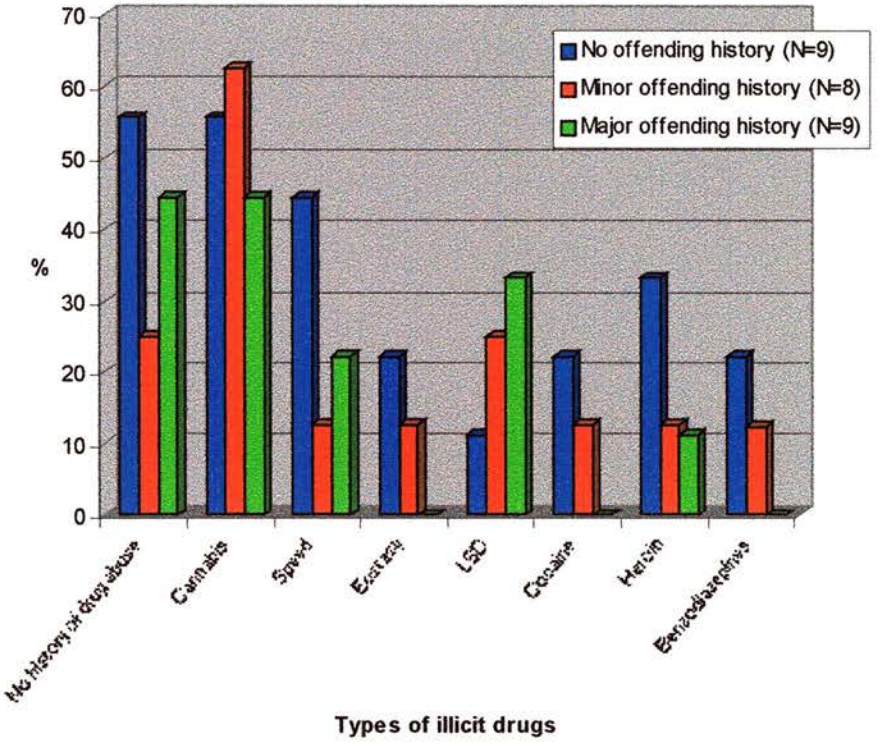


Figure 5, on the next page, illustrates the types of illicit drugs which *have* been used across the three groups; this does not represent current illicit drug use. Some subjects were not comfortable discussing current usage but were happy to give historical information about previous illicit drug use. This is useful in exploring patterns of drug abuse that *may* be linked to offending behaviour.

In summary, all three groups have a considerable proportion of non-drug users; this is highest in non-offenders with minor offenders having the lowest number of non-drug users. Cannabis is the most widely used drug across all groups. There is higher use of speed in the non-offender group. LSD is another drug that has been used across all groups, with lowest usage in the non-offenders group. Cocaine has been used in the minor offenders and non-offenders groups. Surprisingly, heroin has been used by subjects in all groups, with more non-offenders having used it in comparison to the other groups. Non-offenders and minor offenders have both illegally used benzodiazepines with no major offenders having used this drug out with prescription only use.

Figure 5: A comparison of types of illicit drugs used across the three groups



3.6 Analysis of Emotional Processes in Psychosis

3.6.1 Hypothesis 3a.

Levels of depressive symptomatology, as measured by the Beck Depression Inventory – 2nd edition (BDI II), will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories.

A one-way analysis of variance did not find significant differences between the three groups on depressive symptomatology:

$F(2, 23) = 1.551$; $p = 0.233$.

Therefore, the null hypothesis must be accepted. The Levene statistic was examined to check that the assumption of homogeneity of variance is tenable. The non-significant figure confirms that there is no evidence for heterogeneity of variance ($p = 0.648$).

Non-parametric analysis was also conducted for appropriateness with the data and comparability with the parametric findings. The Kruskal-Wallis test yielded similar results to the analysis of variance; no significant differences were found between the three groups on depressive symptomatology:

X squared (1) = 1.030; $p = 0.310$.

The null hypothesis must be accepted.

Post-hoc multiple comparisons were examined using the Tukey test to further examine group differences. There were no significant differences found between any two groups or in homogeneous subsets.

For interest, a boxplot, was constructed to further examine the distribution of mean depressive symptomatology scores across the three groups. Higher scores are representative of more depressive symptoms. The differences between mean scores are not significant.

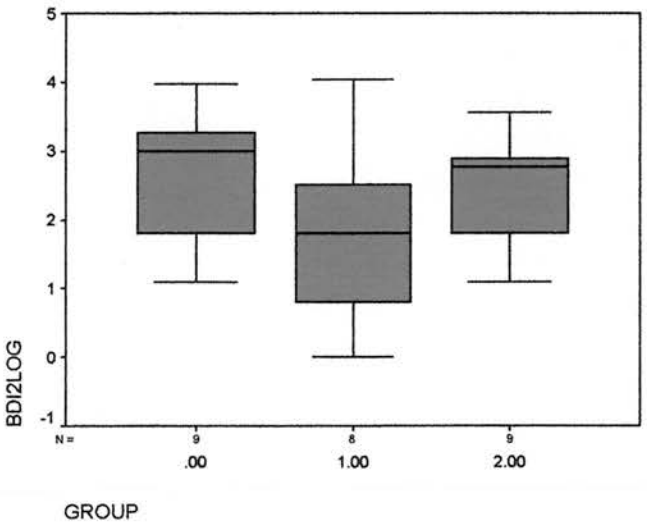
Key to boxplot

.00 = Non-offenders

1.00 = Minor offenders

2.00 = Major offenders

Figure 6: Boxplot of depressive symptomatology categorised by group membership



3.6.2 Hypothesis 3b

Levels of anxiety symptomatology, as measured by the Beck Anxiety Inventory (BAI), will significantly differ between the three groups: non-offenders; people with minor offending histories and people with major offending histories.

A one-way analysis of variance did not find significant differences between the three groups on anxiety symptomatology:

$F(2, 23) = 1.593$; $p = 0.225$.

Therefore, the null hypothesis must be accepted. The Levene statistic was examined to check that the assumption of homogeneity of variance is tenable. The non-significant figure confirms that there is no evidence for heterogeneity of variance ($p = 0.836$).

Non-parametric analysis was also conducted for appropriateness with the data and comparability with the parametric findings. The Kruskal-Wallis test yielded similar results to the analysis of variance; no significant differences were found between the three groups on anxiety symptomatology:

X squared $(1) = 0.601$; $p = 0.438$.

The null hypothesis must be accepted.

Post-hoc multiple comparisons were examined using the Tukey test to further examine group differences. There were no significant differences found between any two groups or in homogeneous subsets.

For interest, a boxplot, was constructed to further examine the distribution of mean anxiety symptomatology scores across the three groups. Higher scores are representative of more anxiety symptoms. The differences between mean scores are not significant.

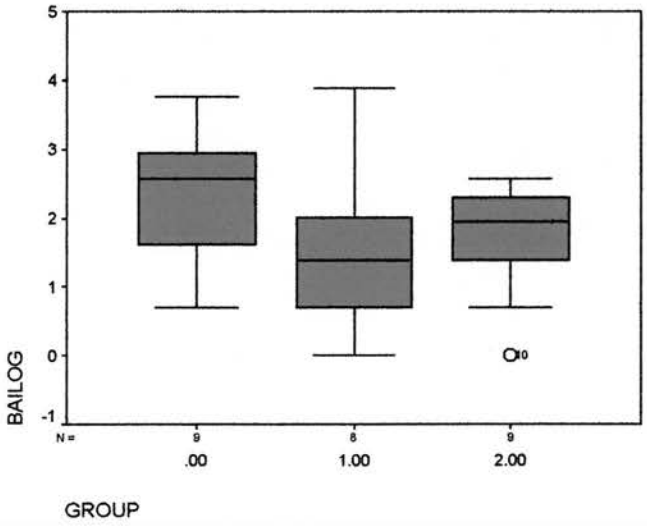
Key to boxplot

.00 = Non-offenders

1.00 = Minor offenders

2.00 = Major offenders

Figure 7: Boxplot of anxiety symptomatology categorised by group membership



3.7 Post-Hoc Power Analysis

After results of research are calculated, it is good practice to calculate the level of power which the test had and work out what sample size would be required to achieve a reasonable level of statistical power (Clark-Carter, 1997). This also gives an indication of the probability of committing a Type II error and rejecting the null hypothesis when it is in fact true.

As the power of the Kruskal-Wallis test is given in terms of power efficiency, Clark-Carter (1997) recommends completing post-hoc power analysis using the relevant tables for the one-way between subjects analysis of variance. For uneven group sizes the mean is calculated; in this study with group sizes of 9,8 and 9 this would mean calculating power based on groups with 9 subjects. In analysis of variance, the effect size is eta squared and calculations should be made for each measure used. Clark-Carter provides tables to examine this retrospectively.

LOC has an eta squared value of 0.088, meaning that 8.8% of the overall variance of scores was due to this measure. This is between a medium (0.059) and large (0.138) effect size. The power of the test for treatment df of 2 was between 0.18 and 0.29. This gives between a 71% (1 - 0.18) and 82% (1 – 0.29) probability of committing a Type II error. To achieve the desired power of 0.8 with this effect size, the researcher would need between 50 and 60 subjects to achieve a power level of between 0.79 and 0.86 respectively.

CRI has an eta squared value of 0.052, meaning that 5.2% of the overall variance of scores was due to this measure. This is slightly under a medium (0.059) effect size. The power of the test for treatment df of 2 was 0.16 for an effect size of 0.05. This gives a 84% (1 – 0.16) probability of committing a Type II error. To achieve the desired power of 0.8 with this effect size, the researcher would need between 60 and 70 subjects to achieve a power level of between 0.79 and 0.85 respectively.

BDI II has an eta squared value of 0.119, meaning that 11.9% of the overall variance of scores was due to this measure. This is slightly under a large (0.138) effect size. The power of the test for treatment df of 2 was 0.40 for an effect size of 0.138 (the closest to 0.119). This gives a 60% (1 – 0.40) probability of committing a Type II error. To achieve the desired power of 0.8 with this effect size, the researcher would need between 20 and 25 subjects to achieve a power level of between 0.78 and 0.87 respectively.

BAI has an eta squared value of 0.121, meaning that 12.1% of the overall variance of scores was due to this measure. This is slightly under a large (0.138) effect size. The power of the test for treatment df of 2 was 0.40 for an effect size of 0.138 (the closest to 0.121). This gives a 60% (1 – 0.40) probability of committing a Type II error. To achieve the desired power of 0.8 with this effect size, the researcher would need between 20 and 25 subjects to achieve a power level of between 0.78 and 0.87 respectively.

CHAPTER 4: DISCUSSION

4.1 Current study in relation to the literature

The current study was interested in whether cognitive, behavioural and emotional processes differed between three groups of people with psychotic disorders: non-offenders; people with minor offending histories and people with major offending histories. It was hypothesised that any differences could be used to help assess the risk of offending behaviour in people with psychotic disorders.

Comparisons can be made between the results of this study and the literature on cognitive behavioural processes in psychosis and in offending, as presented in the introduction to the current study. Statistical analyses indicate that the null hypotheses must be accepted in this study. Therefore, the hypotheses that cognitive, behavioural and emotional processes may be implicated in psychotic disorders (see Haddock & Tarrier, 1998) and in turn, used to understand the offending behaviour of some people with psychosis cannot be accepted. Each of these hypotheses will be discussed in turn in light of the statistical results.

4.1.1 Cognitive Processes in Psychosis

The current study investigated two cognitive processes across the three groups of subjects; these were locus of control and conviction of beliefs about psychotic symptoms.

The possibility of differences between the three groups in locus of control (hypothesis 1a) was measured using the LOC questionnaire. In this case, the null hypothesis must be accepted. In retrospect, this hypothesis may have been limited in scope. For example, locus of control scores may reflect environmental factors such as hospitalisation. This study did not compare differences between subjects who are in-patients with subjects who live in the community. Longevity of hospital stay may also effect locus of control, e.g. – people who are detained in hospital long term may be justified in feeling that events in their life are out with their control. This would be similar to the results of forensic studies conducted by Blatier (2000) and Newton (1998). Indeed, there is only limited hypothetical specificity from a conceptual viewpoint as to the role of locus of control in psychosis and offending.

However, in non-forensic studies of people with psychotic disorders, the tendency to an external locus of control in has been established empirically (e.g. – Levenson, 1979 and Varkey & Sathyavathi, 1984). Although this has also been established in studies of offenders (e.g. - Newton, 1998), this may reflect other factors, as discussed above. Locus of control is viewed as a stable trait and therefore would not be expected to change over time, for example, pre and post offence. However, locus of control may differ according to the nature of a person's life events and not be as stable as earlier literature suggests (see Rotter, 1966, for stability theory; Fiske & Taylor, 1984 for discussion of mediating factors). It may also be that locus of control is determined by the psychotic disorder or through appraisal of the severity of one's offending behaviour; if so, this has implications for whether intervention can be successful in changing this. In light of these

factors, a more general measure of appraisal may have been more applicable to studying the relationship between psychosis and offending.

The possibility of differences between the three groups in the conviction of their beliefs about their psychotic symptomatology (hypothesis 1b) was measured using the COB scale. As discussed in section 3.1.2, the data collected from this questionnaire was omitted from the inferential analysis. Therefore, the null hypothesis must be accepted in this case. Tables 8 – 12, presented earlier (section 3.4.2), provide a comparison of the groups' answers to each of the five questions. This reflects differences in conviction of beliefs in the current sample only and results cannot be generalised to the population.

A review of tables 8 - 12, showing responses to the five questions across the three groups, indicates that in this *small* sample, non-offenders and major offenders are more likely to attribute an identity to their symptoms when they are unwell than minor offenders. Major offenders and non-offenders are also more likely to attribute a purpose to their symptoms when they are unwell. In contrast, the majority of minor offenders could not answer the question about purpose of symptoms. Similarly, both the major offenders and non-offenders groups were more likely to view their symptoms as powerful. In contrast again, the minor offenders generally did not attribute power to their symptoms. Interestingly, neither of the offending groups attributed control to their voice; it was the non-offenders who were more likely to believe that their symptoms had control over them. This is confirmed by question five when the non-offenders also stated that they could not control their symptoms. A belief about the power of symptoms in

relation to subsequent perceptions of ability to cope was demonstrated empirically by Birchwood, Meadow, Trower, Gilbert & Plaistow (2000). In the current study, the major offenders were more likely to believe that they could control their symptoms. Surprisingly, the minor offenders also stated that they did not believe they could control their symptoms. This is in contrast to their assertion in question four that they did not believe that their symptoms were in control of them.

An association between peoples' beliefs about a stressful life event and their subsequent ability to cope has been established empirically (Lazarus, 1966). Lazarus discusses this in relation to locus of control; people who believe that they cannot cope adequately may have a tendency towards an external locus of control. In the current study, this cannot be established by the measures used.

The hypothesis that the three groups would differ in conviction of beliefs about their symptoms has not been supported. A review of the theoretical underpinnings for this hypothesis is important in discussing if this was a valid area of study. During administration of the COB, a majority of the subjects talked about how their beliefs about their symptoms are very different when the symptoms are florid. The literature has also explored differences between beliefs when people are in the acute versus remission stage of their illness (Shaver et al, 1984; Birchwood, 1995; see Craissati & Hodes, 1992 for discussion of this in relation to offending). The temporal aspect to this process may have implications for understanding the importance of beliefs in offending behaviour. For example, if subjects could be assessed quickly post-offence, specific delusional or

hallucinatory motives for the crime may be found (as per Smith & Taylor, 1999) that might not be found some time later when a person's symptoms have ameliorated. Indeed, a high number of offenders reported during the study that these questions were more pertinent to the time they offended. These reports support the notion of contextual factors playing an important role in offending among people with psychosis (Krakowski, Czobor & Chou, 1999).

Risk assessment research has established a link between crime and specific delusional or hallucinatory motives (e.g.-Humphreys, Johnstone & MacMillan, 1994; Buchanan, 1997 and Smith & Taylor, 1999). This could not be replicated in the current study. In retrospect, it may also be necessary to consider conviction of belief to severity of illness, e.g. – are they essentially the same thing? For example, major offenders may be more unwell and as a result will have stronger conviction of belief in their symptoms.

In retrospect, the COB scale was not appropriate for measuring conviction of beliefs in this sample. This scale may have allowed for a better exploration of the hypothesised link between conviction of beliefs in people with psychosis and criminality, had it been used on the sample when they were experiencing active symptoms. However, there is no known measure for exploring peoples' beliefs about their symptoms retrospectively while they are well. Therefore, the COB scale was used in the absence of any other suitable measure.

4.1.2 Behavioural Processes in Psychosis

The current study investigated coping strategies as a behavioural response to psychotic illness, across the three groups. Both adaptive and maladaptive strategies were analysed and substance abuse was considered further as one type of maladaptive strategy.

The possibility of differences between the three groups in coping strategies (hypothesis 2a) was measured using the CRI scale. In this case, the null hypothesis must be accepted. A Pearson correlation matrix (2-tailed) of the eight sub-scales of the CRI showed high inter-correlations between the sub-scales (Appendix 11).

People with psychosis who are associated with committing offences that use lower levels of violence, have been found to have more adaptive coping strategies in other studies (Cheung, Schweitzer, Crowley & Tuckwell, 1997). The current study did not replicate this finding. In terms of quantifying lower levels of violence, this study used the Cormier-Lang System for Quantifying Criminal History (Appendix 10). This was used to calculate a total score for each individual based on all crimes committed by that person. Therefore, both the minor and major offenders may have committed violent crimes in this study. However, table 5 (section 2.1.5) does reflect more violent crimes committed by the major offenders group in comparison to the minor offenders group. The major offenders group also contained more people with a history of imprisonment and more detained in-patients, in comparison to the minor offenders group, which had more out-patients.

In retrospect, this hypothesis may have been limited in scope in that coping may also reflect issues of hospitalisation, as discussed in the previous section with reference to locus of control. For example, people in hospital may have less access to coping strategies found in the community, e.g. – self-help groups and leisure activities. A similar finding was reported by Romme, Honig, Noorthorn & Escher (1992). In their study, adaptive coping was more likely to be found in people in the community than a hospital sample. As discussed previously, most of the major offenders in this study are detained in hospital.

The CRI scale is widely used clinically but the researcher felt that there were limitations to using it for research purposes (see section 2.3.3). However, the decision to use the CRI scale was made, in the absence of another available comprehensive measure of coping strategies.

The possibility of differences between the three groups in levels of substance abuse (hypothesis 2b), a maladaptive coping strategy, was measured using clinical interview and self-report. No inferential statistics were used to analyse the results as they reflect historical information as well as current use. Therefore, the null hypothesis must be accepted in this case. Descriptive statistics were used to examine the distribution of alcohol and drug use in this sample (figures 4 and 5, section 3.5.2). Although interesting, these results cannot be generalised out with the sample.

In terms of alcohol use the majority from all groups currently drink under five units per week. The non-offenders group had the highest number of non-drinkers. There were a considerable number of subjects from both offending groups who have a diagnosis of alcohol dependency disorder. The apparent discrepancy between this diagnosis and reported alcohol consumption may be due to lack of access to alcohol. For example, offenders in the Blair Unit would have no access and people living in the community would have their alcohol intake monitored by their CPN. Only the major offenders reported intakes of 5 – 10 and 10 – 15 units per week, although it should be noted that this represents two individuals. Therefore, as most of the major offenders are in-patients, these figures are likely to reflect the out-patients within this group, of which there are three.

In terms of illicit drug use, all groups had people who had never used drugs; this was highest in non-offenders. There is no data to compare this rate of non-drug users with the general population. Prevalence rates report the prevalence of using drugs rather than the prevalence of not using drugs. This high proportion of non-drug users shows that the data from other drug use is comprised of a few individuals with polymorph substance misuse. Cannabis was the most widely used drug across all groups. Illegal use of benzodiazepines occured within the non-offending and minor offenders groups. Surprisingly, heroin has been used by people in all groups with more reported use in the non-offenders group. It is unclear whether this may be due to a cohort effect; this group contains the highest number of young people living in the community.

Examinations of the results are interesting in consideration of the hypothesis of self-medication (Linszen & Lenior, 1999). The current study also found the trend reported by Linszen & Lenior of alcohol and cannabis being the most widely used substances. Taylor et al (1998) estimated the prevalence of substance abuse as over 20% in psychiatric and forensic settings. The current study found similar prevalence rates using a *small* sample. As with alcohol use, these figures may reflect lack of access to drugs, for example, long term in-patients may still wish to use drugs but do not have the opportunity. In addition, the Blair Unit operates a strict policy on items being brought into the unit and visitors may be searched. Patients are also subject to random drug screening through urinalysis.

Caution must be used in discussion of any association between substance misuse and offending. For example, are crimes committed as a direct result of the influences of alcohol and/or drugs, or are crimes committed to get money to support any substance addiction (e.g. - theft)? The current study cannot answer this question in relation to the current sample.

The hypotheses that coping with psychosis and substance misuse, a maladaptive coping strategy, may differ across offending groups (see Sokya, 2000), may be influenced by other factors as discussed above. Therefore, in terms of establishing a causal link between substance misuse and offending, empirical results must be interpreted with caution. For example, alcohol and cannabis use in the general population may parallel the use by people with psychosis but not everyone commits a crime. Therefore,

substances may be used more in an attempt to self-medicate, to try and block out psychotic symptoms, or for recreational purposes as in the general population rather than as part of any causal relationship with offending (Wallace et al, 1998). It is also difficult to separate out any causality attributed to a co-morbid substance misuse problem, e.g. – which came first, the psychosis or the substance misuse and how do they interact in the commission of crimes (see Milton et al, 2001)?

4.1.3 Emotional Processes in Psychosis

The current study investigated two emotional processes across the three groups; these were symptoms of depression and anxiety.

The possibility of differences between the three groups in depressive symptomatology (hypothesis 3a) was measured using the BDI II. In this case, the null hypothesis must be accepted. A 2-tailed Pearson correlation matrix (Appendix 12) indicated a significant association between BDI II and BAI. This suggests that they are not giving a true measure of variance across groups on each measure because of the collinearity. This is to be expected given the high co-morbidity rates of depression and anxiety evidenced in referrals to clinical psychology services. In addition, the non-offenders group has the only subject with a diagnosis of psychotic depression; this may be confounding the results on the BDI II. The presence of people with a diagnosis of bi-polar affective disorder in the sample may also exert influence on the affective measures data. In retrospect, it would have been interesting to compare these diagnoses with those of other

psychotic disorders. This would certainly be advised with larger samples and significant results.

Mood and affective symptom level has been linked to coping in the literature. Billings & Moos (1981) found less adaptive coping strategies in people with higher levels of depression in the general population. This was replicated in a psychiatric population (see Falloon & Talbot, 1981; Addington, Addington & Robinson, 1999 and Ventura et al, 2000). The current study cannot answer this with regards to the sample.

Empirical studies, mainly from the CBT literature, have provided a conceptual underpinning of depression and psychosis (see Barnes, Curson, Liddle & Patel, 1989; Muller, Szegedi, Wetzel & Benkert, 2001 and Rooke & Birchwood, 1998 and others). Tengstrom & Hodgins (2002) found that people with depression in general psychiatric services have a high rate of violence. In addition, a link has been established empirically between depression and an increased risk of offending and suicide (Thomas-Peter & Howells, 1996 and Harrower, 1998). There are limitations of the scope of the current study and others in establishing a causal link. Therefore, caution must be applied when attributing causality due to the difficulties in distinguishing depression from the negative symptoms of schizophrenia.

The possibility of differences between the three groups in anxiety symptomatology (hypothesis 3b) was measured using the BAI. In this case, the null hypothesis must be

accepted. Again, consideration must be paid to the significant association between BDI II and BAI that may be confounding the results.

There has been limited research on the interaction between anxiety in psychotic disorders and offending. However, there is a theoretical underpinning that highlights the role of anxiety in psychosis. Some researchers have found a higher prevalence of anxiety disorders in the psychotic population in comparison to the general population (Birchwood & Tarrier, 1994 and Cosoff & Hafner, 1998). There has been no empirical evidence to suggest what, if any, specific role anxiety may play in offending behaviour by people with psychotic disorders. A link between affective disorders, psychosis and criminality has been hypothesised but causality could not be established due to patient variables and small samples (Tengstrom & Hodgins, 2002).

In the current study, the hypothesis for anxiety and psychosis is exploratory in nature, with limited theoretical specificity. This link was not supported in this sample; therefore, the non-significant result between anxiety and group membership may in fact be the norm. Anxiety may also reflect situational factors to the individual, e.g. – a forensic in-patient being considered for discharge or due to appear in court may be more anxious as a result. This was considered a priori; see section 1.8.2 for discussion of the temporal issues inherent to studying affective symptomatology.

It would have been interesting to compare the scores on BAI with the general population norms for any significant difference. However, as the current study did not show

significant results, this was not done. This would also be more feasible with a larger sample.

In addition, an interaction has been hypothesised, in terms of overall psychological wellbeing leading to better appraisal and coping skills by this researcher and others (Freeman & Garety, 1999). It was hypothesised that anxiety was a mediating factor between psychosis and offending. Anxiety has been found to be significantly associated with coping strategies (Billings & Moos, 1981 and Parkes, 1984). It would have been interesting to look at scores on the BAI and CRI to examine this further. However, this was not done given the non-significant results of the current study. If anxiety influences coping, it is not surprising that the analysis on the BAI was not significant given the non-significant result for the CRI.

Likewise, the evidence base points to an interaction between anxiety/stress, coping and locus of control (Parkes, 1984 and Frenkel, Kugelmass, Nathan & Ingraham, 1995). Again, no comparison was made between scores on the BAI with scores on the LOC questionnaire, given the non-significant results of the current study. If they are interactional, it would not be expected to find a significant result on one and an insignificant result on the other. As discussed in section 3.1.5, a significant correlation was found between BAI and LOC scores (Appendix 12).

There are also temporal issues inherent to the current study (section 1.8). In terms of depression and anxiety, these are not stable and will fluctuate over time in people. The

BDI II asks people to rate their depressive symptoms in the past two weeks and the BAI asks people to rate their anxiety symptoms in the past week. However, these measures are still widely used for clinical and research purposes and were used in the current study in the absence of more historical measures. There are no measures that assess symptomatology over life course. Therefore, it is difficult to infer that because people have these symptoms at time of report, that they had them at time of offending. Ideally, the researcher would have liked to study people on admission but this was not feasible given the timeframe and the slow discharge policy of the unit. This will be possible in future with the introduction of Integrated Care Pathways, whereby a multi-disciplinary team will assess all admissions within six weeks. As this was not in place prior to the current study, historical case records would not have yielded consistent results. Some of the subjects also come to the Blair Unit after being in prison and therefore, for reasons of confidentiality, previous records cannot be accessed from the Scottish Prisons Service (SPS).

4.2 Limitations of the current study

4.2.1 Recruitment

During execution of the study, many difficulties were encountered in recruiting subjects. Until recently, patients in the Blair Unit had been paid £10 to participate in clinical research. Clinicians reported a high participation rate when this was the case. However, Grampian Research Ethics Committee (GREC) stopped this, deeming it unethical. As a result, many of the patients refused to participate in the study unless they were paid. The researcher also felt that the restrictions imposed by GREC on recruitment made it more

difficult to recruit people. For example, the information sheet to potential participants was worded in such a way that it did not enthuse people to participate. Inertia and general apathy are common negative symptoms of psychosis; therefore a different approach may have been more beneficial with this population whereby someone who knew them well and could gauge their illness told them about the research.

In addition, GREC insisted that the invite to participate should come from the consultant psychiatrists. The psychiatrists did support the study but were not actually involved in it; as a result some of them felt that it was misleading to put their name on documentation concerning the invite. This had to be reviewed with all three psychiatrists in the Blair Unit and a suitably worded invite sheet agreed on and incorporated into the information sheet. As a result, many of the patients felt that their RMO would be told about their responses in the study and did not take part as a result. As an RMO, the relationship with patients is different from the usual doctor-patient relationship. This is because patients view the RMO as having the power to release or keep them in hospital.

Originally, it was hoped that people from the IPCU ward in the Blair Unit could help make up the non-offenders group. However, many of these people showed huge variations in their psychotic symptoms from day to day and as a result did not meet inclusion criteria of being well at time of participation. This meant the researcher had to try and recruit patients from the psychiatric rehabilitation service to comprise a non-offenders group. However, the post of consultant psychiatrist in charge of this service was initially vacant and then the service was decommissioned. The clinical psychologist

in this service also resigned from post halfway through the study; this cut off another access route to potential participants. Consequently, difficulties were encountered in gaining permission to access this service. In the interim until the service is redesigned, all the adult mental health psychiatrists in the hospital are sharing responsibility for the patients according to a criterion of sectorisation (location of patients' GP). This meant the researcher had to approach every psychiatrist and mental health team individually, which was difficult in light of the time constraints of the study. Many of the psychiatrists were also unwilling to become involved in the study, as they already had to work with an increased workload.

4.2.2 Sample Characteristics

This study found, as per other studies, that there are great difficulties in completing research with people with psychotic disorders, e.g. - the negative symptoms of psychosis means a lower participation rate can be expected in comparison to people with other psychiatric disorders. In addition, the positive symptom of paranoia can mean that people are more wary of the aims of the study and how their responses will be used. For example, some non-offenders refused to participate in case the results meant that they would be imprisoned. One of them agreed to participate but wanted their lawyer present during administration. The variation in symptoms from day to day also meant that some people originally agreed to participate but did not feel like it on the day of administration and consequently dropped out of the study.

In addition, it can also be difficult to conduct research with offenders as they may be reluctant to discuss their crimes and wary of any information which they give being used against them in parole type decisions. For example, one patient who was convicted of violent assault did not wish to participate as they were due to be considered for discharge and to date, had been reluctant to discuss the motivation for the index offence. This has left the clinicians involved in the patient's care with a difficult decision of whether or not to discharge this person back into the community, as they were still unsure of the nature of any risk that this person may pose to the public. This patient felt that participation in the current study would be used as a way of resolving this clinical uncertainty.

4.2.3 Methodological Difficulties

An obvious methodological difficulty lay in analysing the results for inference from the current small sample. Kenny, Mannetti, Pierro, Livi & Kashy (2002) discuss difficulties in interpreting results from small data. This type of data can be difficult to generalise, as data from small groups can be non-independent. This means that people in the same group may be more similar or dissimilar to each other than people from different groups but this does not mean that these are characteristics of the population being tested. These researchers state that this non-independence cannot be detected using standard statistical analyses. It is also difficult to determine the nature of any interaction between variables using small and uneven group sizes. These researchers conclude that the analyses used for such data should mirror the psychological processes that generate the data. Although they introduce a new form of analysis that they feel controls for these difficulties, there

is not enough empirical evidence for it to be used unequivocally. Therefore, this researcher used more statistically established procedures to analyse the data, given the limitations the study faced. This is particularly relevant for this type of exploratory research, when the researcher is interested in finding any significant results.

Other methodological difficulties lay with the use of the COB scale (section 3.1.2) and the CRI (section 2.3.3).

The decision on how to categorise offending behaviour may also differ between studies. In the current study, it was felt that a standardised measure that allows for comparisons and categorisations to be made between offenders and types of offences was appropriate. In this respect, the Cormier-Lang System for Quantifying Criminal History (Appendix 10) was the most suitable. However, this system does not account for risk prediction in terms of assessing the likelihood of future offending by an individual. In spite of this, it is generally considered that a retrospective examination of criminal history remains the best predictor of future risk (The Scottish Office, 1996). The criterion for establishing criminality in this study only took account of convictions that have been processed through the criminal justice system in adulthood. At times, this may not have reflected an accurate criminal history for an individual. For example, some people may have juvenile convictions or may not have been through the criminal justice system as in the case of a patient assaulting a member of nursing staff. There are a high proportion of assaultive patients in the Blair Unit.

Another methodological difficulty lay in the fact that the five measures really only measure self-reported symptoms in cognitive, behavioural and emotional processes at a given period of time. Therefore, there may be a temporal aspect to these processes; reference has been made to this throughout the current study. Although locus of control is generally seen as a stable trait over time, the current study has illustrated that beliefs about illness differs when people are well in comparison to when their psychotic symptoms are florid. Consequently, there may be differences in self-report by the same individual as their mental state fluctuates. There is no report in the literature of how stable coping responses are in relation to psychotic disorders. The current study has also made reference to difficulties in retrospectively assessing affective symptomatology.

However, the current study was exploratory in nature and therefore, not concerned with drawing causal relationships. Specifically, the researcher was interested in exploring whether or not any relationship between psychosis and offending could be established in a retrospective psychometric way, by reference to any theorised risk assessment factors. For example, if differences do exist between offenders and non-offenders on cognitive, behavioural and emotional processes while in hospital, it would be appropriate to explore how much these differences are also present at time of offending. Anecdotally, when people are admitted to the Blair Unit post-offence they differ significantly on multi-disciplinary assessment from people who have been in the unit for some time and who have participated in rehabilitation programs. The current study was interested in clarifying the nature of these differences within a CBT framework and in understanding the mechanisms involved in psychotic disorders and offending.

The current study was appropriate in terms of drawing together aspects of the literature on psychosis, offending and the link between the two. This is an important area of research to establish as it has implications both for successful outcome with offenders and consequently for the safety of the community at large from crime. More stringent testing of the hypotheses can be tested using larger groups that are matched for time since offending and time in rehabilitation. Consideration should also be given to matching a hospital sample to a community sample. It would also be interesting to compare mentally disordered offenders against a further control group of offenders serving prison sentences. This has practical limitations in terms of accessing prison inmates and records as an NHS researcher.

A longitudinal design was not possible within the time frame of the current study. An ideal study into the mechanisms involved in offending by people with psychotic disorders would also have to involve a larger sample size and if possible, a different measure for exploring the role of beliefs in offending. The limitations in measuring affective symptomatology would also require careful consideration.

4.2.4 Time Constraints

The aims of the current study were difficult to achieve in the time scale of one day a week over 10 months. This was further hampered by events out with the control of the researcher. For example, the GREC has a separate student division that it states meet weekly to consider student submissions, with decisions being provided within two weeks. Application for the current study was made in February 2002; unfortunately, a

final decision was not reached until May 2002. This meant recruitment and administration of the study took place within a short time scale. In addition, no psychologists or psychiatrists sit on the committee and as a result, there is a limited understanding about the design and nature of psychological research as opposed to medical research. This meant the committee required clarification on many aspects of the research and this further delayed final approval for this study.

4.3 Implications of the current study

4.3.1 Clinical Utility of Results

The results of the current study did not find significant differences between offenders and non-offenders with psychotic disorders, using a CBT framework. In addition, the current study had inadequate sample size and was not powerful enough to measure large effect sizes that would need to be demonstrated if policy on treatment was to be research led. If these differences can be studied within a larger controlled study, any results would have implications for clinical interventions with these people. Birchwood with other researchers asserted that physiological, psycho-social and cognitive processes in psychosis can be amenable to change if assessed adequately (Birchwood, Todd & Jackson, 1998; Birchwood, 1999 and Birchwood & Spencer, 2001). Kingdon & Turkington (1994) have also demonstrated the importance of using a CBT intervention for successful outcome in people with psychotic disorders. These studies suggest that hospitalising people with psychosis who offend, under a section order, and treating the psychotic symptoms with neuro-leptics may only be part of a holistic rehabilitation package. It is important to understand in what way, if any, this intervention could be

extended to include offending behaviour in this population. If there is a causal link between symptoms of psychosis and offending, this needs to be addressed in treatment. For example, if the underlying beliefs about their illness and ways of coping with and reacting to it are not addressed in a section of this population who exhibit maladaptive responses in these regards, some people may go on to re-offend if their symptoms return and influence their behaviour.

This researcher and others (Walsh, Buchanan & Fahy, 2002) would support the validity of further research in the areas of CBT for psychotic disorders; risk assessment and in developing an understanding about the mechanisms involved in mental illness and offending.

4.3.2 Future Research

More stringent testing of the hypotheses that people with psychosis who offend differ in measurable cognitive, behavioural and emotional ways from people with psychosis, who do not offend, may be interesting. The use of retrospective, longitudinal designs would help overcome some of the difficulties encountered in this and other research such as recruitment and methodological problems.

The literature has led to an acceptance that people with psychosis may be more prone to offending when ill but this is not specific enough to direct clinical and forensic practice. Few studies have compared those people with psychosis who offend with those who do not offend to attribute causality. More empirical evidence is needed to clarify those

factors which cause some people to react in a criminal way when they are experiencing florid symptoms. To date, the researcher feels that the CBT model has provided the most promising premise for researching, clarifying and treating the factors involved in the relationship between psychosis and offending. Unfortunately, the lack of research has led to misrepresentations both in the public eye and in the penal system as to the real level of risk imposed by people with psychosis and consequently, stigmatisation of people who are already suffering from a distressing disorder. Therefore, this should continue to be an important area of psychological interest.

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APPENDICES

APPENDIX 1

NHS GRAMPIAN
AND
UNIVERSITY OF ABERDEEN

GRAMPIAN RESEARCH ETHICS COMMITTEE

NHS Grampian

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28 March 2002

Project No:02/0070

Miss Amanda McKenzie
1 Littlejohn Street
Aberdeen
AB10 1FG

Dear Miss McKenzie

Is crime predictable in psychosis? Cognitive, behavioural and emotional processes as predictors of offending behaviour in people with psychotic disorders

The above project was considered at the Grampian Research Ethics Sub-Committee meeting of 27th March 2002, and I am pleased to confirm that ethical approval for this project has now been granted subject to the following amendments.

- Who is your supervisor
- The invitation to participate should come from the patient's consultant and the patient information sheets should be identified as such, simplified and with a clear invitation to participate.
- Please submit all questionnaires for review and approval.
- What measures are in place if the participants find completing the questionnaires a "stressful" experience?
- Confirm that you will get a statistically significant result with only 42 subjects.
- Clarify further the primary end point (outcome of study) on which you base the power calculation.

I look forward to receiving clarification on the above and the revised patient information sheet for approval before this study can start. Thank you for bringing this study to the Committee's attention.

Yours sincerely

Mrs Jenny Godfrey-Brown
Scientific Officer – Grampian Research Ethics Committee

Please quote project number on all correspondence

APPENDIX 2

NHS GRAMPIAN
AND
UNIVERSITY OF ABERDEEN
GRAMPIAN RESEARCH ETHICS COMMITTEE

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13th May 2002

Project No:02/0070

Miss Amanda McKenzie
1 Littlejohn Street
Aberdeen
AB10 1FG

Dear Miss McKenzie

Is crime predictable in psychosis? Cognitive, behavioural and emotional processes as predictors of offending behaviour in people with psychotic disorders

Thank you for your letter of 29th April 2002, which we received at the Board on the 2nd May 2002. I am pleased to confirm that full ethical approval has been granted for the above numbered project and for the revised information sheet and questionnaires provided with your letter.

With regards to medical indemnity, I enclose a form which should be completed and returned to either, Prof J Broom, Research & Development Director, Research & Development Offices, Grampian University Hospitals Trust, Westburn House, Foresterhill, Aberdeen, or, Dr G Peterkin, Medical Director, Grampian Primary Care Trust, Summerfield House, 2 Eday Road, Aberdeen as appropriate, if you wish one of the above Trusts to accept liability for medical indemnity for this project.

We would be very glad to receive in due course, copies of any publications arising from this research. Thank you for bringing this study to the Committee's attention.

Yours sincerely

Mrs Jenny Godfrey-Brown
Scientific Officer – Grampian Research Ethics Committee

Please quote project number on all correspondence

NHS
Grampian

APPENDIX 3

Department of Forensic Clinical Psychology

Blair Unit, (Block B)
Royal Cornhill Hospital
Cornhill Road
ABERDEEN AB25 2ZH

(Tel: 01224 557919)
(Fax: 01224 557936)

AN INVESTIGATION OF FACTORS WHICH MAY PREDICT CRIME IN PEOPLE WITH PSYCHOSIS

INVITATION TO TAKE PART IN A STUDY

You are being invited to take part in this study which is about to start within The Blair Unit and has been devised and undertaken by Amanda McKenzie (Trainee Clinical Psychologist). Although we are not directly involved in the research, we feel it is of value and as the Consultant Psychiatrists responsible for the care of people in the unit, we would like to ask you to read this information sheet and decide if you want to participate.

INTRODUCTION

People with a psychotic illness such as schizophrenia suffer from a number of distressing symptoms such as hearing, seeing or believing things which other people do not experience. They also have to live with the labels which other people in society may give them – as "mad" or "dangerous". Most people with a psychotic illness are treated with medication prescribed by a Psychiatrist. There are also ways in which Psychologists can help by showing people how to cope better with their illness.

You have been given this letter because we would like to invite you to help in this research which aims to identify psychological factors which may lead to people with a psychotic illness committing a crime. Ms McKenzie would like to examine if this is due to factors separate from the illness, for example, a person's beliefs about their illness and life, their mood and how they cope with their illness. This research is undertaken as part of Ms McKenzie's training for the qualification of Doctorate in Clinical Psychology.

WHAT WILL I HAVE TO DO IF I TAKE PART?

The study lasts over 5 months and people receiving treatment from the Blair Unit, Royal Cornhill Hospital will be invited to take part. If you agreed to take part you would be asked to sign a consent form and then given a brief interview by Ms McKenzie to find out how your illness affects you. You will then be assisted by her to complete 5 short questionnaires. This will take place on either a Thursday or Friday in the Blair Unit on a time and date arranged with you. This will involve one visit and will last approximately 90 minutes. If you wish you can have a nurse or familiar person sitting in with you.

This will not affect your current treatment from either a Psychiatrist or Psychologist and is entirely separate from this. As your Doctor, we will be advised that you have agreed to take part but will not be given any other details. Your GP will only be advised that you have taken part in the study if you particularly want this. All information which you supply will be treated in the strictest confidence and seen only by Ms McKenzie or her supervisors on the study. The information will be reported all together and no individual will be identified.

WHAT ARE THE POSSIBLE RISKS OF TAKING PART?

There are no risks to your health or safety by taking part in the study. You will not be given any medication as part of this study.

WHAT ARE THE POSSIBLE BENEFITS OF TAKING PART?

There may be no direct benefit to yourself for taking part in the study. However, it is hoped that the information we get from the study will help healthcare staff to gain more knowledge about the treatments for people with a psychotic illness in the future. If the results of the study can identify factors which make people more likely to commit a crime while unwell, it is hoped this information can be used to help prevent future crimes. This means less distress both to victims of crime and to the unwell person.

DO I HAVE TO TAKE PART?

No, taking part is voluntary. If you would prefer not to take part you do not have to give a reason. You will not upset staff and your treatment would not be affected. If you take part but later change your mind, you can withdraw at any time.

WHAT DO I DO NOW?

You will be contacted by Ms McKenzie in a week via your Nurse and you can let them know if you are interested in taking part. You can also discuss any questions you have with Ms McKenzie or through nursing staff.

Thank you very much for considering taking part in this research study. Please feel free to discuss this information sheet with your family, friends or nursing staff if you wish.

Dr John Boyd, Dr Margaret Bremner, Dr Pauline Larmour
Consultant Psychiatrists (Forensic)
Blair Unit, Royal Cornhill Hospital, Aberdeen

Amanda McKenzie
Trainee Clinical Psychologist
Royal Cornhill Hospital, Aberdeen & University of Edinburgh
Tel: 01224 557919

GRAMPIAN PRIMARY CARE NHS TRUST

Mental Health Service

APPENDIX 4

CONSENT BY VOLUNTEER TO PARTICIPATE IN PSYCHOLOGY RESEARCH

Name of Study: **"Is crime predictable in psychosis? Cognitive, Behavioural and Emotional processes as predictors of offending behaviour in people with psychotic disorders"**

Name of Volunteer: ----------

Name of Principal Investigator: Amanda McKenzie

I have read the volunteer information sheet on the above study and have had the opportunity to discuss the details with Amanda McKenzie or the nursing staff and ask questions. I understand the nature and purpose of the questionnaires which I will be asked to complete. I understand fully what is proposed to be done.

I have agreed to take part in the study as it has been outlined to me, but I understand that I am completely free to withdraw from the study or any part of the study at any time I wish and that this will not affect my continuing medical or psychological treatment in any way.

I understand that this study is to help promote knowledge of psychological factors in psychosis and may be of no direct benefit to myself. The Grampian Research Ethics Committee of Grampian Health Board has approved this study and may wish to inspect the data collected at any time as part of its monitoring activities. All information provided will be treated in the strictest confidence.

I also understand that where appropriate, my Consultant Psychiatrist will be informed that I have agreed to take part in the study. My General Practitioner will only be advised with my permission.

I hereby fully and freely consent to participate in the study which has been fully explained to me.

Signature of Volunteer: ----------

Date: ----------

I confirm that I have explained to the volunteer named above, the nature and purpose of the study and tests which will be undertaken.

Signature of Principal Investigator: ----------

Date: ----------

STIONNAIRE 3: LOCUS OF CONTROL

of the following circled responses scores one point. Add the scores and write the total score on *ersonality Inventories Profile* (page 44) in the *raw score* box, then circle the appropriate value on ofile above.

APPENDIX 5

ssessment Questionnaire 3

lease answer this questionnaire by circling the answer that best fits how you feel. There are no right or rong answers. Please do not take too much time over any one question, and please anwser them all.

	Do you believe that most problems will solve themselves if you just don't fool with them?	(YES)	NO
	Do you believe that you can stop yourself from catching a cold?	YES	(NO)
	Are some people just born lucky?	(YES)	NO
	Most of the time do you feel that getting good grades at school meant a great deal to you?	YES	(NO)
	Are you often blamed for things that just aren't your fault?	(YES)	NO
	Do you believe that if somebody studies hard enough he or she can pass any subject?	YES	(NO)
	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?	(YES)	NO
	Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?	(YES)	NO
	Do you feel that most of the time parents listen to what their children have to say?	YES	(NO)
0	Do you believe that wishing can make good things happen?	(YES)	NO
1	When you get punished does it usually seem it's for no good reason at all?	(YES)	NO
2	Most of the time do you find it hard to change a friend's mind or opinion?	(YES)	NO
3	Do you think that cheering more than luck helps a team to win?	YES	(NO)
4	Did you feel that was nearly impossible to change your parent's mind about anything?	(YES)	NO
5	Do you believe that parents should allow children to make most of their own decisions?	YES	(NO)
6	Do you feel that when you do something wrong there's very little you can do to make it right?	(YES)	NO
7	Do you believe that most people your age are just born good at sports?	(YES)	NO
8	Are most of the other people your age stronger than you are?	(YES)	NO
9	Do you feel that one of the best ways to handle most problems is just not to think about them?	(YES)	NO
20	Do you feel that you have a lot of choice in deciding who your friends are?	YES	(NO)

2 of the *Locus of Control* scale follows on page 17.

If you find a four leaf clover, do you believe that it might bring you good luck?	(YES)	NO
Did you feel that whether you did your homework had much to do with what kind of grades you got?	YES	(NO)
Do you feel that when someone your age decides to hit you, there's little you can do to stop him or her?	(YES)	NO
Have you ever had a good luck charm?	(YES)	NO
Do you believe that whether or not people like you depends on how you act?	YES	(NO)
Did your parents usually help you if you asked them?	YES	(NO)
Have you felt that when people were mean to you it was usually for no reason at all?	(YES)	NO
Most of the time, do you feel that you can change what might happen tomorrow by what you do today?	YES	(NO)
Do you believe that when bad things are going to happen they are just going to happen no matter what you try to do to stop them?	(YES)	NO
Do you think that people your age can get their own way if they just keep trying?	YES	(NO)
Most of the time do you find it useless to try to get your own way at home?	(YES)	NO
Do you feel that when good things happen, they happen because of hard work?	YES	(NO)
Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?	(YES)	NO
Do you feel that it's easy to get friends to do what you want them to?	YES	(NO)
Do you usually feel that you have little to say about what you get to eat at home?	(YES)	NO
Do you feel that when someone doesn't like you there's little you can do about it?	(YES)	NO
Did you usually feel that it was almost useless to try in school because most other children were just more clever than you were?	(YES)	NO
Are you the kind of person who believes that planning ahead makes things turn out better?	YES	(NO)
Most of the time, do you feel that you have little to say about what your family decides to do?	(YES)	NO
Do you think it's better to be clever than to be lucky?	YES	(NO)

APPENDIX 6

Conviction of Beliefs Scale

The following lines are used to measure the strength of people's beliefs about the voices they hear. Each line represents a different belief and ranges from not believing the statement at all (0%) to believing it completely (100%). There are no wrong or right answers and each question is specific to your own individual experience.

Please mark with an X the place on the line that represents the degree to which you believe the associated statement.

Q1. How much do you believe that the voice belongs to .....?

0% ——————————————————————— 100%
not at all completely

Q2. How much do you believe that the purpose of the voice is to.....
.....?

0% ——————————————————————— 100%
not at all completely

Q3. How powerful is the voice?

0% ——————————————————————— 100%
not at all powerful completely powerful

Q4. How much control does the voice have over you?

0% ——————————————————————— 100%
no control at all complete control

Q5. How much control do you have over the voice?

0% ——————————————————————— 100%
no control at all complete control

APPENDIX 7

Coping Responses Inventory

his is your copy of the **Coping Responses Inventory**. *It contains questions about ow you manage important problems that come up in your life.*

lease answer each question as accurately as you can. All your answers are strictly onfidential. If you do not wish to answer a question, please circle the number of that uestion so that we know you have intentionally skipped it. If a question does not pply to you, please write 'N/A' (Not Applicable) in the margin next to the question.

We appreciate your cooperation.

/hat is your name? .....

/hat is today's date? .....

Dealing with a problem or situation

Please think about the most important problem or stressful situation you have experienced *DURING THE LAST 12 MONTHS* (for example, having troubles with a relative or friend, experiencing the illness or death of a relative or friend, having an accident or illness, having financial or work problems). Describe the problem in the space provided below. If you have not experienced a major problem, then list a minor problem that you have had to deal with.

Describe the problem or situation .....
.....
.....

Part I

Please answer the following questions about the problem you have listed.
Place an 'X' in the appropriate box.

	Definitely No 0	Mainly No 1	Mainly Yes 2	Definitely Yes 3
1. Have you ever faced a problem like this before?	☐	☐	☐	☐
2. Did you know this problem was going to occur?	☐	☐	☐	☐
3. Did you have enough time to get ready to handle this problem?	☐	☐	☐	☐
4. When this problem occurred, did you think of it as a threat?	☐	☐	☐	☐
5. When this problem occurred, did you think of it as a challenge?	☐	☐	☐	☐
6. Was this problem caused by something you did?	☐	☐	☐	☐
7. Was this problem caused by something someone else did?	☐	☐	☐	☐
8. Did any thing good come out of dealing with this problem?	☐	☐	☐	☐
9. Has this problem or situation been resolved?	☐	☐	☐	☐
10. If the problem has been worked out, did it turn out all right for you?	☐	☐	☐	☐

COPING RESPONSES INVENTORY

Part II

Please think again about the problem you described at the beginning of this inventory; indicate which of the following you did in connection with that situation.

Did you:	NO 0	YES, once or twice 1	YES, some-times 2	YES, fairly often 3
. Think of different ways to deal with the problem?	☐	☐	☐	☐
. Tell yourself things to make yourself feel better?	☐	☐	☐	☐
. Talk with your partner or other relative about the problem?	☐	☐	☐	☐
. Make a plan of action and follow it?	☐	☐	☐	☐
. Try to forget the whole thing?	☐	☐	☐	☐
. Feel that time would make a difference – the only thing to do was wait?	☐	☐	☐	☐
. Try to help others deal with a similar problem?	☐	☐	☐	☐
. Take it out on other people when you felt angry or depressed?	☐	☐	☐	☐
. Try to step back from the situation and be more objective?	☐	☐	☐	☐
10. Remind yourself how much worse things could be?	☐	☐	☐	☐
11. Talk with a friend about the problem?	☐	☐	☐	☐
12. Know what had to be done and try hard to make things work?	☐	☐	☐	☐
13. Try not to think about the problem?	☐	☐	☐	☐
14. Realize that you had no control over the problem?	☐	☐	☐	☐
15. Get involved in new activities?	☐	☐	☐	☐
16. Take a chance and do something risky?	☐	☐	☐	☐
17. Go over in your mind what you would say or do?	☐	☐	☐	☐
18. Try to see the good side of the situation?	☐	☐	☐	☐
19. Talk with a professional person (e.g. doctor, lawyer, clergy)?	☐	☐	☐	☐
20. Decide what you wanted and try hard to get it?	☐	☐	☐	☐

uestions about how you handled the problem you described at the beginning this Inventory (continued)

d you:	NO 0	YES, once or twice 1	YES, some-times 2	YES, fairly often 3
. Daydream or imagine a better time or place than the one you were in?	☐	☐	☐	☐
. Think that the outcome would be decided by fate?	☐	☐	☐	☐
. Try to make new friends?	☐	☐	☐	☐
. Keep away from people in general?	☐	☐	☐	☐
. Try to anticipate how things would turn out?	☐	☐	☐	☐
. Think about how you were much better off than other people with similar problems?	☐	☐	☐	☐
. Seek help from persons or groups with the same type of problem?	☐	☐	☐	☐
. Try at least two different ways to solve the problem?	☐	☐	☐	☐
. Try to put off thinking about the situation, even though you knew you would have to at some point?	☐	☐	☐	☐
. Accept it; nothing could be done?	☐	☐	☐	☐
. Read more often as a source of enjoyment?	☐	☐	☐	☐
. Yell or shout to let off steam?	☐	☐	☐	☐
. Try to find some personal meaning in the situation?	☐	☐	☐	☐
. Try to tell yourself that things would get better?	☐	☐	☐	☐
. Try to find out more about the situation?	☐	☐	☐	☐
. Try to learn to do more things on your own?	☐	☐	☐	☐
. Wish the problem would go away or somehow be over with?	☐	☐	☐	☐
. Expect the worst possible outcome?	☐	☐	☐	☐
. Spend more time in recreational activities?	☐	☐	☐	☐
. Cry to let your feelings out?	☐	☐	☐	☐
. Try to anticipate the new demands that would be placed on you?	☐	☐	☐	☐

estions about how you handled the problem you described at the beginning this Inventory (continued)

you:	NO 0	YES, once or twice 1	YES, some-times 2	YES, fairly often 3
Think about how this event could change your life in a positive way?	☐	☐	☐	☐
Pray for guidance and/or strength?	☐	☐	☐	☐
Take things a day at a time, one step at a time?	☐	☐	☐	☐
Try to deny how serious the problem really was?	☐	☐	☐	☐
Lose hope that things would ever be the same?	☐	☐	☐	☐
Turn to work or other activities to help you manage things?	☐	☐	☐	☐
Do something that you didn't think would work, but at least you were doing something?	☐	☐	☐	☐

is completes the Inventory. Thank you very much for your help.

BDI®-II

Date:

APPENDIX 8

ame: _____ Marital Status: _____ Age: _____ Sex: _____

ccupation: _____ Education: _____

nstructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and en pick out the **one statement** in each group that best describes the way you have been feeling during the **past two eeks, including today**. Circle the number beside the statement you have picked. If several statements in the group em to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one atement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

_____ Subtotal Page 1

Continued on Back

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11. Agitation

0 I am no more restless or wound up than usual.

1 I feel more restless or wound up than usual.

2 I am so restless or agitated that it's hard to stay still.

3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0 I have not lost interest in other people or activities.

1 I am less interested in other people or things than before.

2 I have lost most of my interest in other people or things.

3 It's hard to get interested in anything.

13. Indecisiveness

0 I make decisions about as well as ever.

1 I find it more difficult to make decisions than usual.

2 I have much greater difficulty in making decisions than I used to.

3 I have trouble making any decisions.

14. Worthlessness

0 I do not feel I am worthless.

1 I don't consider myself as worthwhile and useful as I used to.

2 I feel more worthless as compared to other people.

3 I feel utterly worthless.

15. Loss of Energy

0 I have as much energy as ever.

1 I have less energy than I used to have.

2 I don't have enough energy to do very much.

3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

0 I have not experienced any change in my sleeping pattern.

1a I sleep somewhat more than usual.

1b I sleep somewhat less than usual.

2a I sleep a lot more than usual.

2b I sleep a lot less than usual.

3a I sleep most of the day.

3b I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

0 I am no more irritable than usual.

1 I am more irritable than usual.

2 I am much more irritable than usual.

3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.

1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.

2b My appetite is much greater than usual.

3a I have no appetite at all.

3b I crave food all the time.

19. Concentration Difficulty

0 I can concentrate as well as ever.

1 I can't concentrate as well as usual.

2 It's hard to keep my mind on anything for very long.

3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.

1 I get more tired or fatigued more easily than usual.

2 I am too tired or fatigued to do a lot of the things I used to do.

3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I am much less interested in sex now.

3 I have lost interest in sex completely.

_____ Subtotal Page 2

_____ Subtotal Page 1

_____ Total Score

APPENDIX 9

IE _____ DATE _____

w is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by eac
otom during the PAST WEEK, INCLUDING TODAY, by placing an X in the corresponding space in the column next to each symptom

	NOT AT ALL	MILDLY It did not bother me much.	MODERATELY It was very unpleasant, but I could stand it.	SEVERELY I could barely stand it.
1. Numbness or tingling.				
2. Feeling hot.				
3. Wobbliness in legs.				
4. Unable to relax.				
5. Fear of the worst happening.				
6. Dizzy or lightheaded.				
7. Heart pounding or racing.				
8. Unsteady.				
9. Terrified.				
10. Nervous.				
11. Feelings of choking.				
12. Hands trembling.				
13. Shaky.				
14. Fear of losing control.				
15. Difficulty breathing.				
16. Fear of dying.				
17. Scared.				
18. Indigestion or discomfort in abdomen.				
19. Faint.				
20. Face flushed.				
21. Sweating (not due to heat).				

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APPENDIX 10

Violent Offenders

APPRAISING AND MANAGING RISK

Vernon L. Quinsey
Grant T. Harris
Marnie E. Rice
Catherine A. Cormier

AMERICAN PSYCHOLOGICAL ASSOCIATION • WASHINGTON DC
1998

APPENDIX E

Cormier–Lang System for Quantifying Criminal History

GROUP 1

Homicide (murder, manslaughter, criminal negligence causing death)	28
Attempted murder, causing bodily harm with intent to wound	7
Kidnapping, abduction, and forcible confinement	6
Aggravated assault, choking, administering a noxious thing	6
Assault causing bodily harm	5
Assault with a weapon	3
Assault, assaulting a peace officer	2
Aggravated sexual assault, sexual assault causing bodily harm	15
Sexual assault with weapon	12
Sexual assault, gross indecency (vaginal or anal penetration; victim forced to fellate offender)	10
Sexual assault (attempted rape, indecent assault)	6
Gross indecency (offender fellates or performs cunnilingus on victim)	6
Sexual assault (sexual interference, invitation to sexual touching)	2
Armed robbery (bank, store)	8
Robbery with violence	5
Armed robbery (not a bank or store)	4

GROUP 2

Robbery (bank, store)	7
Robbery (purse snatching)	3

Arson and fire setting (church, house, barn)	5
Arson and fire setting (garbage can)	1
Threatening with a weapon	3
Threatening (uttering threats)	2
Theft over* (includes car theft and possession of stolen property over)	5
Mischief to public or private property over*	5
Break and enter and commit an indictable offense (burglary)	2
Theft under* (includes possession of stolen goods under)	1
Mischief to public or private property under* (includes public mischief)	1
Break and enter (includes breaking and entering with intent to commit an offense)	1
Fraud (extortion, embezzlement)	5
Fraud (forged check, impersonation)	1
Possession of a prohibited or restricted weapon	1
Procuring a person for, or living on the avails of prostitution	1
Trafficking in narcotics	1
Dangerous driving, impaired driving (driving while intoxicated)	1
Obstructing peace officer (including resisting arrest)	1
Causing a disturbance	1
Wearing a disguise with the intent to commit an offense	1

NOTES AND INSTRUCTIONS

This system is an adaptation of an earlier one by Akman and Normandeau (1967). It can be used to quantify an offender's history of criminal offenses, a current or index offense, or a particular subgroup of offenses (such as violent offenses or property offenses). For scoring the VRAG and SORAG, all arrests (including juvenile crimes) prior to the index offense are scored separately for violent and nonviolent criminal history. Add up each "count" of an offence to determine the seriousness within that type. For example, if there are two counts of breaking and entering ($2 \times 1 = 2$) and three counts of theft under ($3 \times 1 = 3$), then the resulting score would be 5. Scores can be cumulative or separated into desired categories (i.e., total of all offense types or separated into violent and nonviolent or sexual and nonsexual). Charges of "attempted" offense such as attempted armed robbery are scored the same as if the offense had been completed with the exception of attempted murder, which has a separate assigned value.

This system can be used when only official police "rap sheet" information is available (e.g., records from the Royal Canadian Mounted Police Fingerprint Service), but when possible, police reports from investigating officers and witnesses should also be used to clarify details. In cases where the exact type is unknown, use an "at least" method to score. For example,

if an offense is known to be assault but there are no details as to whether it was assault causing bodily harm or aggravated assault, score the offense in the lowest category, as 2.

Many Criminal Codes and other systems to categorize criminal conduct distinguish between violent and nonviolent offenses. In Canada there is a distinction between offenses against the person and offenses against property. However, such official distinctions usually do not appropriately capture what is, at best, a somewhat arbitrary distinction. In Canada, for example, bigamy is listed as an offense against the person, whereas robbery is an offense against property. In scoring the VRAG and the SORAG, offenses listed in Group 1 are generally considered to be violent, and offenses listed in Group 2 are nonviolent, but exceptions are possible. Documents with details of offenses can (and should whenever possible) be used for scoring. In general, for example, armed robbery and robbery with violence are scored as violent offenses, but robbery is considered to be nonviolent. However, if investigating officers' reports indicated that a robbery arrest was associated with violent conduct (e.g., a victim was injured), the offense would be recorded as violent. As another example, an arrest for pointing a firearm or possession of a restricted weapon would be recorded as nonviolent without additional information. However, if police reports from witnesses indicated that the charges were associated with violent conduct (e.g., attempting to fire a weapon at someone), the offense would be recorded as violent. Similarly, a conviction for a fire setting offense may be recorded as mischief (with a score of 1), but if details of the offense clearly indicated that the offense was actually setting fire to a home and causing substantial damage, then the score would be 5 for the most serious of the arson offenses.

Many criminal offenses do not appear here. There are a variety of reasons for this. First, some offenses (e.g., sedition, bestiality, bribery, counterfeiting, hijacking, pretending to discover stolen property by occult science) are so rare that we did not derive a score for them. In the case of such rare offenses, the listed offense closest to the rare one should be used: kidnapping for hijacking; and fraud for counterfeiting, for example.

Second, some offenses—prostitution, possession of narcotics, bookmaking and other so-called "victimless" crimes—were too minor to include. Third, some offenses—parole; mandatory supervision violations; breach of probation, recognizance or bail; failure to appear; and escapes and unlawfully at large—were addressed separately in other areas of the original research and are therefore not included here unless these crimes resulted in additional offenses (e.g., a murder by a prison escapee), which then would be scored.

This system (and the earlier one by Akman & Normandeau, 1967) is based on the Criminal Code of Canada, which itself is based on British Common Law, as are the criminal statutes throughout the English-speaking world. Thus, the Canadian Criminal Code is very similar to the statutes in individual states in the United States. To the extent that a particular state

code is different, some amount of judgment is required to approximate as closely as possible the names of offenses in other jurisdictions. For example, an offense commonly listed in U.S. states is battery, which usually involves some physical injury. It would therefore be comparable to the assault causing bodily harm listed in this scoring method. Similarly, larceny does not appear in the Canadian Code but is usually equivalent to theft.

In addition, the Canadian Criminal Code entails two classes for some offenses (e.g., theft, mischief, possession of stolen property) against property—offenses resulting in a loss over a particular monetary value versus those involving a loss less than that value. This is similar to the grand larceny versus larceny distinction in some other jurisdictions. The scoring system presented here reflects that distinction assigning larger values to offenses exceeding that criterion (Over*) compared to those that do not (Under*). Because of inflation, the critical value has changed from time to time (from $50 to $200 to $1,000). Scoring is done according to whether the offense exceeded the cutoff value at the time.

Problems with interjurisdictional comparability are more troublesome for research application of this system than application to individual cases. In an individual case, once it is clear an offender's score is zero or exceeds 2 (e.g., more than one violent offense and more than two nonviolent offenses automatically exceed a score of 2), scoring is straightforward. Only in cases where a distinction is possible among scores of 0, 1, or 2 is any judgment required to determine how a particular arrest corresponds to the system here. Sometimes the sentence prescribed by the Criminal Code can be a guide to relative seriousness.

APPENDIX 11

Pearson Correlation Matrix showing associations between the eight sub-scales of the Coping Responses Inventory

Key to Appendix 11 representing eight sub-scales of CRI:

CRI 1 = Sub-scale 1; Logical Analysis

CRI 2 = Sub-scale 2; Positive Appraisal

CRI 3 = Sub-scale 3; Seeking Guidance and Support

CRI 4 = Sub-scale 4; Taking Problem Solving action

CRI 5 = Sub-scale 5; Cognitive Avoidance

CRI 6 = Sub-scale 6; Acceptance or Resignation

CRI 7 = Sub-scale 7; Seeking Alternative Rewards

CRI 8 = Sub-scale 8; Emotional Discharge

Pearson Correlation Matrix showing associations between the eight sub-scales of the Coping Responses Inventory

Correlations

		CRI1	CRI2	CRI3	CRI4	CRI5	CRI6	CRI7	CRI8
CRI1	Pearson Correlation	1.000	.179	.501**	.506**	-.405*	-.591**	-.305	-.542**
	Sig. (2-tailed)	.	.382	.009	.008	.040	.001	.130	.004
	N	26	26	26	26	26	26	26	26
CRI2	Pearson Correlation	.179	1.000	.228	.317	-.132	.080	-.536**	-.035
	Sig. (2-tailed)	.382	.	.263	.115	.521	.696	.005	.865
	N	26	26	26	26	26	26	26	26
CRI3	Pearson Correlation	.501**	.228	1.000	.336	-.034	-.136	-.483*	-.397*
	Sig. (2-tailed)	.009	.263	.	.093	.870	.508	.013	.045
	N	26	26	26	26	26	26	26	26
CRI4	Pearson Correlation	.506**	.317	.336	1.000	-.122	-.280	-.597**	-.414*
	Sig. (2-tailed)	.008	.115	.093	.	.554	.166	.001	.035
	N	26	26	26	26	26	26	26	26
CRI5	Pearson Correlation	-.405*	-.132	-.034	-.122	1.000	.275	.093	.503**
	Sig. (2-tailed)	.040	.521	.870	.554	.	.174	.652	.009
	N	26	26	26	26	26	26	26	26
CRI6	Pearson Correlation	-.591**	.080	-.136	-.280	.275	1.000	-.083	.351
	Sig. (2-tailed)	.001	.696	.508	.166	.174	.	.686	.079
	N	26	26	26	26	26	26	26	26
CRI7	Pearson Correlation	-.305	-.536**	-.483*	-.597**	.093	-.083	1.000	.336
	Sig. (2-tailed)	.130	.005	.013	.001	.652	.686	.	.093
	N	26	26	26	26	26	26	26	26
CRI8	Pearson Correlation	-.542**	-.035	-.397*	-.414*	.503**	.351	.336	1.000
	Sig. (2-tailed)	.004	.865	.045	.035	.009	.079	.093	.
	N	26	26	26	26	26	26	26	26

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 12

Pearson Correlation Matrix of the four dependent variables

Correlations

		LOC	CRITOTAL	BDI2LOG	BAILOG
LOC	Pearson Correlation	1.000	-.115	.355	.408*
	Sig. (2-tailed)	.	.575	.075	.039
	N	26	26	26	26
CRITOTAL	Pearson Correlation	-.115	1.000	.025	.081
	Sig. (2-tailed)	.575	.	.904	.695
	N	26	26	26	26
BDI2LOG	Pearson Correlation	.355	.025	1.000	.816**
	Sig. (2-tailed)	.075	.904	.	.000
	N	26	26	26	26
BAILOG	Pearson Correlation	.408*	.081	.816**	1.000
	Sig. (2-tailed)	.039	.695	.000	.
	N	26	26	26	26

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Key to Appendix 12

LOC = Scores on LOC scale

CRITOTAL= Total scores on CRI

BAILOG = Transformed scores on BAI

BDI2LOG = Transformed scores on BDI II