CHAPTER ONE

Introduction and Thesis Summary

1.1 Chapter Overview

This chapter introduces the research area and outlines the background and rationale for the present study. It briefly reviews the Irish Prison System and outlines the mental health difficulties faced by many prisoners. The reformulated learned helplessness and hopelessness depression theories are proposed to provide a framework for understanding depression in the prison population. The chapter subsequently describes the aims of the present study and provides a chapter by chapter overview of the thesis.

1.2 The Irish Prison System

The Irish Prison Service (IPS) operates fourteen places of detention within the Republic of Ireland. The most recently published IPS Annual Report (2008) stated that 9,703 males were incarcerated in 2008, representing an increase of 13.4 percent on the previous year's figure (8,556). The daily average number of males in custody was 3,420. These figures are the highest on record since 2001. The IPS faces significant challenges in terms of overcrowding, drug use, inter prisoner violence, and the mental health needs of prisoners. As the prison population grows it becomes increasingly difficult to address these issues. The importance of research is emphasised in the context of service provision.

1.3 Mental Health Problems in the Prison Population

The prevalence of mental health problems is substantially higher in prison populations than in community populations (James & Glaze, 2006; Shinkfield, Graffam, & Meneilly, 2009). Fazel and Danesh (2002) reviewed 62 international surveys examining diagnoses of serious mental disorders in 18,530 male prisoners. They reported six-month prevalence rates of 3.7 percent for psychotic disorders and 10 percent for major depressive disorder. Comparable figures in the Irish context reveal six-month prevalence rates of 2.7 percent for psychotic disorders, 5.0 percent for major depressive disorder, 8.5 percent for affective disorders, 13.8 percent for anxiety

disorders, 79.6 percent for substance use disorders, and 26.7 percent for any mental disorder among male sentenced prisoners (Duffy, Linehan, & Kennedy, 2006).

The severity of self-reported symptoms associated with depression, anxiety, and hopelessness have also been examined in prison populations. For example, Shinkfield et al. (2009) found that 8.1 percent of prisoners reported severe levels of depression on the BDI-II, and 2.3 percent reported severe levels of anxiety on the BAI. Other studies report even higher rates of severe depressive symptoms and substantial levels of hopelessness among the general prison population (Palmer & Connolly, 2005).

The prevalence of mental disorder diagnoses and severity of associated symptoms in prisoners is indicative of the extent of the difficulties faced by this vulnerable population. In general, the mental health needs of this population are poorly understood and have not been appropriately addressed.

With increasing committals to Irish prisons over the past number of years, and with the associated increasing pressure on the system to accommodate these individuals, it is pertinent that the psychological well-being of prisoners not be neglected. The IPS has committed to providing conditions and services appropriate to the well-being and rehabilitation of prisoners and to minimising the detrimental effects of imprisonment. The evidence-based group programmes run by the IPS Psychology Service exemplifies this commitment and emphasises the importance of having theory driven interventions and models to improve our understanding of the nature of psychological difficulties among prisoners.

1.4 Attributional Style and Depression

Attributional style is a cognitive personality variable that reflects how people habitually explain the causes of bad events (Peterson & Seligman, 1984). There are three dimensions of attributional style: internal versus external; global versus specific; and stable versus transient. The reformulated learned helplessness model (Abramson, Seligman, & Teasdale, 1978), and its revision, the hopelessness depression theory (Abramson, Metalsky, & Alloy, 1989), propose that people with depressogenic attributional style (i.e. a relatively stable tendency to explain negative events in terms of internal, stable, and global causes) are more likely to develop depression in response to adverse and uncontrollable events than people with an enhancing attributional style. Findings from numerous studies support the association between attributional style and depressive symptoms (Abramson et al., 2002; Sanjuán, Peréz, Rueda, & Ruiz, 2008;

Sweeney, Anderson, & Bailey, 1986), anxiety symptoms (Luten, Ralph, & Mineka, 1997; Ralph & Mineka, 1998), hopelessness (Abramson et al., 1989), and suicide ideation (Hirsch et al., 2009). These studies illustrate the important role attributional style plays in psychological well-being.

Within the literature, a number of variables that impact on the relationship between attributional style and depressive symptoms have been identified. 'Attributions of uncontrollability' (i.e. the extent to which the causes of events are perceived as uncontrollable), for example, has been shown to increase the likelihood that a person with depressogenic attributional style will develop depressive symptoms in response to an adverse event (Sanjuán & Magallares, 2009). It has also been reported that anxiety affects the relationship between attributional style and depression (Fresco, Alloy, & Reilly-Harrington, 2006). Event valence (i.e. causal explanations for positive versus negative events) has also been implicated, in that individuals who adopt an enhancing attributional style for positive events (i.e. internal, stable, and global causes) experience lower levels of depression and hopelessness (Needles & Abramson, 1990; Voelz, Haeffel, Joiner, & Wagner, 2003). While many studies have investigated the impact of various individual variables that affect the relationship between attributional style and depression, there is little evidence of any attempt to build a predictive model in a clinically relevant sample, incorporating the most significant variables identified in the literature.

1.5 Attributional Style and Depression in Prisoners

It has long been assumed that imprisonment is universally detrimental to the psychological well-being of prisoners, however there is little empirical evidence supporting this view. The psychological impact of imprisonment is significantly moderated by individual cognitive differences. As such, the literature emphasises a diathesis-stress approach to understanding how individuals differ in their response to incarceration. Consistent with this approach, the learned helplessness and hopelessness theories of depression hypothesise that inescapable aversive circumstances precipitate the onset of symptoms associated with depression, moderated by a cognitive vulnerability.

There appears to be little research into the nature of the relationship between attributional style and psychological well-being in the prison population. A significant proportion of attributional style research has involved university samples and many

authors advocate for increasing participation of clinical samples. The inclusion of such samples serves to augment the practical and clinical utility of research findings. In addition, a novel approach to understanding psychological difficulties in an Irish prison sample may provide new insights into potential future interventions.

1.6 The Present Study

This study aims to investigate the relationship between attributional style and depressive symptoms in a sample of Irish adult male prisoners. It also aims and to examine the factors that impact on this relationship with the goal of building a predictive model. It is hypothesised that a significant positive correlation will be evident between depressogenic attributional style and depressive symptoms. Factors hypothesised to affect this relationship include: 'event valence', 'attributions of uncontrollability', and measures of anxiety and hopelessness. A model of this relationship may provide a better understanding of the nature of psychological vulnerability in prisoners, and may elucidate important means of promoting psychological well-being. For example, promoting attributional modification and change by incorporating this into existing services and programmes for offenders, such as "Building Better Lives".

The thesis adopts the following structure:

Chapter Two presents an overview of the Irish prison system. It describes the male prison population profile and outlines some of the difficulties faced by Irish prisons and prison inmates. These issues include overcrowding, drug use, inter prisoner violence, and the mental health needs of prisoners.

Chapter Three presents a summary of depression. The clinical features and epidemiology of depression are described. The chapter reviews the prevalence and comorbidity rates of depression worldwide and in the European context. The personal and economic costs of depression are also considered.

Chapter Four reviews depression and other psychological problems in relation to imprisonment. The prevalence and comorbidity rates of mental health problems among

prisoners are presented. The psychological impact of incarceration is subsequently discussed in the context of individual differences and cognitive vulnerabilities.

Chapter Five provides a summary of the development of the learned helplessness hypothesis. It outlines the process by which early experiments on avoidance learning in animals provided a model for understanding the aetiology of depression in humans.

Chapter Six describes the reformulation of learned helplessness. It reviews some of the limitations that gave rise to a reformulation and outlines the concept of a dispositional attributional style that predisposes helplessness deficits. The reformulation is discussed in relation to depression and the measurement of attributional style. Research supporting the reformulation is subsequently reviewed.

Chapter Seven outlines the hopelessness depression theory. Limitations are identified in the reformulation and the development of the hopelessness depression theory is described. The evidence supporting the theory in relation to the subtype hopelessness depression is presented.

Chapter Eight reviews the criticisms that have been raised about the attributional model of depression. Issues are raised in relation to the concept of uncontrollability, the use of an attributional composite score and the contribution of individual dimensions, attributional style and positive events, and attributional style and anxiety. Alternative theoretical perspectives are considered and the application of an attributional model to understanding depression in prisoners is subsequently proposed.

Chapter Nine describes the present study. The study proposes to address the criticisms raised in the previous chapter. The hypotheses are specified on the basis of this critical analysis.

Chapter Ten outlines the research design and methodology. It presents demographic information on participants and evaluates the sample's representativeness. The research design is subsequently described with a review of the instruments used and their psychometric properties. The procedure for the data gathering process is then outlined.

The chapter concludes by describing statistical calculations for sample size estimates and the preparation for statistical analyses.

Chapter Eleven describes the procedure for data analyses and presents the findings. The chapter outlines the preliminary data analyses and presents descriptive statistics relating to the sample and instruments. The results from the multiple regression analyses in testing the hypotheses and building an attributional model of depression are interpreted.

Chapter Twelve initially summarises the findings from the statistical analyses. These findings are interpreted in the context of previous research. The results from the hypotheses are subsequently appraised and explanations are suggested for particular outcomes in the data. The theoretical, clinical, and crime relevant implications of the findings are also considered. Prior to concluding, the chapter addresses the strengths and limitations of the study and proposes areas for future research.

CHAPTER TWO

The Irish Prison System

2.1 Chapter Overview

This chapter presents a synopsis of the Irish prison system. It outlines the places of detention, the legislative framework under which the Irish Prison Service operates, and the philosophy guiding the service. The chapter subsequently describes the male prison population and the psychological and healthcare services with which they are provided. Some of the difficulties faced by Irish prisons and prison inmates are outlined. These present challenges to the well-being of prisoners and emphasise the importance of research driven service delivery.

2.2 Irish Prison Service Institutions

The Irish Prison Service (IPS) operates fourteen places of detention within the Republic of Ireland. Thirteen of these institutions accommodate male prisoners. Female prisoners are detained in the Dóchas Centre and in the female wing of Limerick Prison. Ten of the male prisons may be described as traditional "closed" institutions. Of the remaining three, Loughan House and Shelton Abbey are considered "open centres" with minimal internal and perimeter security, and the Training Unit is a "semi-open" facility with standard perimeter security but minimal internal security. Portlaoise Prison is a high security institution for those committed to custody by the Special Criminal Court. Cloverhill Prison primarily accommodates remand prisoners awaiting trial and St. Patrick's Institution is a place of detention for younger offenders aged 16 to 21 years. The remaining institutions, in Cork, Limerick, Castlerea, Mountjoy, Wheatfield, Cloverhill, and Arbourhill, may be described as medium security committal prisons for males aged 17 years and older.

2.3 IPS Legislation

The Irish Prison Service operates under the government of the Department of Justice, Equality, and Law Reform, and within a statutory framework comprising various legislative Acts, including the recent Prisons Act (2007), the Criminal Justice Act (2007), and the Rules for the Government of Prisons (2007). The IPS also takes due account of various United Nations and European Conventions such as those governing

human rights, the treatment of prisoners, torture and other cruel, inhumane, or degrading treatment or punishment , and civil and political rights.

2.4 IPS Philosophy

According to its mission statement, the Irish Prison Service (IPS) aims to provide safe, secure, and humane custody to people who are sent to prison. It also states that the service is committed to managing custodial sentences in a way that encourages and supports prisoners in their endeavouring to live law-abiding and purposeful lives as valued members of society. Among the Core Values detailed in the Annual Report (2008), the IPS respects human dignity and the rights of every person, believes in making available to each person in custody conditions and services appropriate to their well-being and personal development, and commits itself to minimising the detrimental effects of imprisonment.

2.5 The Male Prison Population

Each year the Irish Prison Service publishes an Annual Report providing an overview of general operational issues within the prison system and statistical information on the demographic profile of the prison population. At the time of writing, the most recently published Annual Report (2008) stated that 9,703 males were sent to prison in 2008, representing 88.8 percent of the total prison population. The number of males sent to prison increased by 13.4 percent from the 8,556 sent to prison in 2007. The male prison population in 2008 accounted for a total of 12,073 committals to Irish Prisons that year. The daily average number of male prisoners in custody was 3,420, which again represents an increase (6.5%) on the previous year's figure of 3,210. In addition, it seems that there has been a disproportionate increase in the numbers serving sentences of ten years or more.

According to The International Centre for Prison Studies (2004), the incarceration rate is estimated to have increased by 43 percent between 1992 and 2004 in Ireland. While it appears that the number of males sent to prison each year since 2001 has fluctuated, the most recent figure represents an all time high. In fact, there were in excess of 1000 more male committals in 2008 than the next highest figure (8,669 in 2003).

2.5.1 The Male Prison Population Profile

The IPS Annual Report (2008) suggests that the profile of the prison population in custody on a given day is the most reliable indicator of the profile of prisoners with the system. On 5th December 2008, the total number of persons in custody (3,695) was nearly 11 percent more than the 2007 figure (3,334). Two thousand eight hundred and eighty males were serving a sentence. The most frequent sentence period being served by male prisoners (672) was between five and ten years. On that day, 48 males were serving the least frequent sentence of less than three months.

The majority of males serving a sentence on 5th December 2008 (1,012; 35.1%) were committed for 'Offences Against the Person'. Within this sample, 425 were serving a sentence for 'Other Offences Against the Person', such as assault. Two hundred and seventy five were committed for sexual offences, 245 for murder, and 67 for manslaughter. The next most frequent offence category for which males (730) were serving a sentence was 'Offences Against Property without Violence', including robbery, theft, and burglary. Others were serving sentences for 'Drug Offences' (550), 'Other Offences' (309) including crimes relating to public order, 'Road Traffic Offences' (183), and 'Offences Against Property with Violence' (96). The mode age range of sentenced male prisoners was between 21 and 30 years of age, accounting for 1,190 (41.3%) of the sample. Almost 90 percent (2,590) were Irish Nationals.

2.6 Care and Rehabilitation

2.6.1 IPS Psychology Service

The Psychology Service was established within IPS to support prisoners with mental health difficulties and to work with them on offence-related issues. While a broad spectrum of mental health difficulties can present in prison, the Psychology Service frequently helps people who are struggling to cope with imprisonment, and who experience affective and anxiety related symptoms and disorders. The Service also collaborates with prisoners to address offence-related issues, such as motivation to change, addiction, and factors that contribute to violent or sexual offending.

In 2008 the IPS Psychology Service employed nine Counselling Psychologists, seven Clinical Psychologists, one Forensic Psychologist, two Assistant Psychologists, and sponsored four Psychologists in Clinical Training at Trinity College. That year, the Service provided one-to-one sessions with 956 prisoners, ranging from short-term interventions (one to nine sessions) to longer-term work (20+ sessions).

The Psychology Service also facilitates group-based interventions, which have become an increasingly important part of their role. In partnership with other agencies such as the Probation Service and the Addiction Counselling Service, the Psychology Service has run groups on Managing Distress, Mindfulness Based Emotion Regulation, Dialectical Behaviour Therapy, Enhanced Thinking Skills, and Stress and Anger Management. In recent years, the group-intervention approach to addressing offence-related issues has progressed and is likely to continue to develop with programmes such as "Building Better Lives", an evidenced-based model adopted for use with individuals convicted of violent offences in Wheatfield and for individuals convicted of sex offences in Arbourhill.

2.6.2 Health Care in Prison

According to the Prison Rules 2007, the IPS has a statutory obligation to provide healthcare facilities and services for persons in custody. It has been reported that prisoners experience significant health problems relative to the general population in Ireland (Curtin et al., 2009), and are therefore regarded by the IPS as a 'special needs' category. The key healthcare services provided by IPS include primary care and chronic disease management, addiction and mental health.

There were a number of developments in prison healthcare in 2008, some of which were initiated to provide for the mental health needs of the prison population. For example, an additional ten beds were made available within the National Forensic Mental Health Service in the Central Mental Hospital (CMH) to accommodate and treat patients suffering with acute mental illness, including prisoners. As a result there was a significant reduction in the number of prisoners on the waiting list requiring admission to CMH. The National Forensic Mental Health Service continues to provide Psychiatric Consultant-led in-reach services to all prisons in Dublin, and to Portlaoise and the Midlands Prison. It is also reported that Consultant-led in-reach Psychiatric services are provided in regions beyond that serviced by the CMH, in Cork, Limerick, and Castlerea Prisons. In addition, a Prison In-reach and Court Liaison Service was established in 2006 in Cloverhill Prison in response to the high rates of mental illness observed in the remand prison population. This service aims to provide early detection and treatment of mental illness in remand prisoners and to divert mentally ill prisoners to appropriate psychiatric services.

A number of advances have also been made in the provision of addiction focused services for prisoners in 2008. These include Drug Treatment Pharmacy Services, Addiction Counselling, and specialist Addiction Nursing posts. In 2008 it was estimated that the addiction counselling service delivered approximately 1000 hours of counselling service per week to prisoners. Indeed it has been reported that IPS has become the largest single provider of drug treatment services in the State, treating a total of 2,014 prisoners in 2008.

In addition to making provisions for the mental health needs of prisoners, the IPS has established a Steering Group on the Prevention of Self-harm and Death in the Prison Population. This is a multi-disciplinary endeavour to prevent and respond to self-harm and death. The IPS Annual Report (2008) states that each prison has in place strategies and plans to prevent self-harm and suicide.

2.7 Prison Inspections

The most recent publication of the Office of the Inspector of Prisons identified a number of areas of concern relating to prison conditions and the treatment of prisoners in Ireland (Annual Report, 2008). Of primary concern were the issues of overcrowding, and the mental health and sentence management needs of prisoners.

Overcrowding has been associated with increases in physiological and psychological stress in prisoners (see Bonta & Gendreau, 1990). According to the Inspector of Prisons (2008), the Irish prison population has consistently exceeded the bed capacity of the prison system as a whole. As a result, the problem of overcrowding is acute in many IPS institutions. The existing facilities in many prisons are insufficient and inadequate to accommodate the increasing population, and prisoners are frequently required to sleep on mattresses on cell floors. Problems associated with overcrowding are most evident in older prisons, such as Mountjoy, Cork, and Limerick, where single cells with little space and ventilation, and no in-cell sanitation, are often shared. The level of overcrowding and the practice of 'slopping out', which is necessary in cells that lack sanitation facilities, have been described as inhumane and degrading treatment (Inspector of Prisons, 2008). Concern for the safety and well-being of prisoners has also been raised with respect to the high levels of illicit drug use and interpersonal violence among Irish prisoners. Similar concerns have been expressed by the European Committee for the Prevention of Torture and Inhumane or Degrading Treatment or

Punishment (CPT, 2006). Having visited a number of prisons in 2006[1], CPT documented several of issues that required attention from IPS. They noted the unsafe nature of certain prisons in Ireland, and expressed concern about prevalent overcrowding, inhumane and ill treatment of prisoners, and inter prisoner intimidation and violence. The CPT (2006) recommended that efforts be made to improve the quality of life in Irish prisons and that vulnerable prisoners be provided with psychological support.

With increasing committals to prison over the past number of years, and with the associated increasing pressure on the system to accommodate these individuals, it is pertinent that the mental health needs of this vulnerable population not be neglected. The Inspector of Prisons (2008) reported that prisoners with mental health problems have an absolute right to treatment in an appropriate setting. However, these needs are arguably not being met. The IPS has emphasised its responsibility to meet the needs of prisoners with mental health difficulties and has highlighted the necessity to further develop services. On this point it is seems that the psychological and mental health needs of this population are poorly understood. Research investigating the nature of psychological problems in the prison population is essential to provide a better understanding of their needs and to guide service development.

2.8 Chapter Summary

The Irish Prison Service operates fourteen places of detention. The most recent statistics indicate that these institutions are accommodating increasing prisoner numbers and presently the prison population is at an all time high. Analysis of the profile of prisoners within the system indicates that most individuals are between 21 and 30 years of age and 90 percent are Irish Nationals. The most frequent offence category for which prisoners are committed is 'Offences Against the Person', including murder, manslaughter, sexual offences, and assault. The IPS Psychology Service works with prisoners with various psychological and offence-relevant difficulties. It is committed to providing evidence-based individual and group interventions to prisoners. In managing the mental health needs of prisoners, the IPS has also collaborated with the National Forensic Mental Health Service to provide an in-reach service to various prisons. IPS also provides large scale drug treatment services. Although IPS endeavours to provide for the healthcare needs of prisoners, it faces significant difficulties. The Inspector of

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[1] CPT also visited Irish prisons in 2010, however their findings had not been published at the time of writing this thesis.

Prisons and the CPT have expressed concerns about overcrowding, drug use, inter prisoner violence, and the mental health needs of prisoners. As the prison population grows it becomes increasingly difficult to address these issues. The importance of research guided service development is emphasised in this regard.

CHAPTER THREE

An Overview of Depression

3.1 Chapter Overview

This chapter presents a summary of depression. The classification of depression is referenced and its clinical features are described in terms of cognition, mood, psychosomatic state, and behaviour. The epidemiology section outlines the prevalence and comorbidity rates of depression worldwide and in the European context. The personal and economic costs of depression are subsequently discussed.

3.2 Classification of Depression

Depression is categorised in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition text revisions (DSM-IV-TR; APA, 2000), and in the International Classification of Diseases, tenth edition (ICD-10; WHO, 1992). Both DSM-IV-TR and ICD-10 are widely used classification systems for delineating mental disorders and psychological problems. A number of subtypes are distinguished in both systems, such as major depression, bipolar mood disorder, dysthymia, and cyclothymia. Symptoms associated with a depressive episode and the criteria for diagnosis in DSM-IV-TR and ICD-10 are presented in Appendix 1.

3.3 Clinical Features of Depression

The presentation of depression can vary from one person to the next, however, typical features often manifest as changes in cognition, mood, psychosomatic state, and behaviour (Carr & McNulty, 2006).

3.3.1 Cognition

Episodes of depression are often associated with 'cognitive distortions' in which the person maintains overly pessimistic or negative beliefs about the self, the world, and the future. As such, negative events are often attributed to personal shortcomings, are seen to affect everything, and judged likely to recur again in the future. In addition, the person experiencing depression may show selective cognitive bias by limiting their focus to evidence and instances that affirm their negative views. In severe episodes of

depression a person's beliefs may take on a delusional quality with little rational basis in reality. They may also experience perceptual hallucinations.

Preoccupation and rumination over perceived failures or lack of ability are common. As a result, the person can be overly self-critical and experience a sense of worthlessness or guilt. Blaming oneself for failing to live up to expectations or failing to fulfil personal or occupational responsibilities often occurs as a result of the depression (DSM-IV-TR; APA, 2000). At times, the person may feel ineffective to change their circumstances for the better and this can foster a sense of uncontrollability and helplessness.

Many individuals suffering with depression report an impaired ability to concentrate, think clearly, and make decisions. They often experience higher levels of distractibility and can have memory difficulties.

Preoccupation with death is common. A person may feel hopeless about their future and have associated thoughts about suicide. These thoughts can vary in terms of frequency, intensity, and lethality. In more severe episodes suicidal ideation can develop into a specific plan to complete suicide.

3.3.2 Mood

A person who is experiencing a depressive episode may feel miserable and describe their mood as sad, depressed, flat, or "down in the dumps". Sometimes they appear tearful and emotionally labile. Other times they may lack emotional reactivity, feeling vacant or "hollow". The depressive mood is often experienced as having a different quality to normal sadness or feeling low (Gelder, Mayou, & Geddes, 2005). Diurnal variation is common, whereby a person's mood is worse in the morning than later in the day. Occasionally, the mood may appear irritable rather than sad, or it may be expressed as anger towards the self or others. This is common in children and adolescents. Anxiety can co-occur with feelings of depression.

Loss of interest and reduced ability to gain pleasure from activities or interpersonal interactions that are normally experienced as enjoyable and rewarding (anhedonia) is a core feature of depression. Consequently, a person may appear apathetic and describe "not caring anymore". The symptoms of depression can cause significant emotional distress.

3.3.3 Psychosomatic State

Physical complaints are frequently experienced by individuals suffering with depression. These can take many forms, but are typically reported as physical discomforts, headaches, and abdominal pains. Preoccupation with pre-existing medical ailments is also common.

A depressive episode can co-occur with psychomotor agitation. This can manifest in a person as constant moving or fidgeting, or an apparent restlessness. The person may describe feeling "wound-up" and may be unable to relax or sit still. The nature of their activity is typically agitated and ineffective. Irritability is another symptom associated with somatic agitation. It is evident when a person becomes easily annoyed or angered, and experiences an exaggerated sense of frustration over minor matters (DSM-IV-TR; APA, 2000).

Contrary to agitation, psychomotor retardation can be experienced. This often presents as delayed speech, slowing physical responsiveness to the environment, or sluggish bodily movements. Decreased energy, tiredness, and fatigue are often present to such an extent that habitual tasks require increased effort and energy to complete and may be described as "exhausting". In extreme cases the person may develop a depressive stupor and become physically inactive.

Changes in appetite are common with associated weight loss or gain. Changes in sleep pattern are also typical. During a depressive episode, a person will more often experience insomnia. Having difficulty falling asleep, having disrupted sleep, and waking up earlier than usual are common complaints in this regard. Hypersomnia, in which a person has prolonged sleeping episodes and excessive daytime napping, can also occur. A person can experience somatic sexual difficulties, including sexual impotence, decreased levels of sexual desire, and loss of libido during a depressive episode.

3.3.4 Behaviour

From a behavioural perspective, important areas of daily functioning are frequently affected during depression. Social withdrawal is often associated with a loss of interest in interpersonal relationships and a perceived inability to manage these relationships. Some people may spend less time engaging in normally preferred past times and may spend less time interacting with others. This can create a self-perpetuating cycle of engaging in activities that provide little sense of achievement or

mastery, which ultimately reinforces the person's sense of joylessness, worthlessness, inefficiency, and loneliness.

Problems with concentration, motivation, slowed activity levels, and energy can impact on a person's occupational functioning. In children this may manifest as deterioration in their school performance. Self-care can also become neglected. In more severe episodes, self-harm, attempted suicide and completed suicide can occur. These are the most concerning behavioural aspects of depression.

3.4 Course

The onset of a depressive episode or disorder can occur at any stage from childhood to later life (Gelder et al., 2005) however, people between 18 and 44 years of age appear to represent the most vulnerable group (Leahy & Holland, 2000). Symptoms of a depressive episode usually emerge over a period of days or weeks, and can develop into a full Major Depressive Episode (APA, 2000). They are usually precipitated by changing circumstances or a stressful life event. Left untreated, a depressive episode might typically last four months or longer prior to remission of symptoms. A significant proportion of cases may not experience full remission and may suffer significant disability and distress as a result of persistent residual symptoms (APA, 2000). In a minority of cases the major depressive episode could last for two years or more, in which case the condition becomes chronic.

More than half of those who have experienced depression will have recurrent episodes. On average, it is estimated that people who experience major depressive disorder will have four episodes lasting approximately twenty weeks each over the course of their lifetime (Carr & McNulty, 2006). Recurrent depressive episodes are likely to increase in frequency and duration.

3.5 Epidemiology

3.5.1 Prevalence

Major depression is the most prevalent single mental health disorder (Alonso et al., 2004a). According to the DSM-IV-TR, the lifetime prevalence rates of Major Depressive Disorder[2] (MDD) in adult community samples vary from 10 to 25 percent

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[2] The essential feature of Major Depressive Disorder is a clinical course that is characterised by one or more Major Depressive Episodes not due to substance use, a general medical condition, or a psychotic illness, and without a history of mania (DSM-IV-TR, 2000).

for women and from 5 to 12 percent for men. These rates are consistently reported elsewhere (Alonso et al., 2004a; Fennell, 1989; Gelder et al., 2005; Leahy & Holland, 2000).

It has been argued that lifetime prevalence rates of MDD are underestimated due to recall bias and the cross-sectional setting. Having applied a microsimulation model to data from mental health surveys conducted in Australia and the Netherlands, Kruijshaar and colleagues (2004) estimate MDD lifetime prevalence rates of 20 percent for men and 30 percent for women. The proposition that MDD prevalence rates are typically underrepresented in epidemiology studies is also supported by previous research which suggests that a significant proportion of cases of major depression go unrecognised (NHS, 1993; cited in Cochrane Review, 2000).

Point prevalence rates provide cross-sectional epidemiological data at a given point in time. Using this method, the World Health Organisation estimated that between 5 and 9 percent of women and between 2 and 3 percent of men will fulfil the criteria for a diagnosis of MDD. In the European Region, point prevalence rates suggest that approximately 100 million people (11.5% of the population) suffer with depression (WHO, 2005a). The pattern of depressive symptomatology across European countries is similar (Bernert et al., 2009).

The European Outcome of Depression International Network (ODIN) study adopted a broader focus in examining the epidemiology of depression, including other affective disorders categorised in DSM-IV and ICD-10, in five European countries. Analysis of the overall sample (n = 8,764), revealed point prevalence rates of 10.1 percent for women and 6.6 percent for men. The urban centres in Ireland and the UK were noted to have significantly higher prevalence rates of depressive disorders than other regions (Ayuso-Mateos et al., 2001).

3.5.2 Comorbidity

Depression frequently co-occurs with dysthymia, anxiety disorders, substance use disorders, eating disorders, borderline-personality disorder (Carr & McNulty, 2006) and several physical and medical conditions (Leahy & Holland, 2000).

The National Comorbidity Survey-Replication (NCS-R) investigated prevalence and comorbidity rates of MDD using the Composite International Diagnostic Interview (CIDI) with a sample of 9,090 adults in the United States. Findings from the survey reveal that almost three quarters (72.1%) of respondents with lifetime MDD also

fulfilled DSM-IV criteria for at least one other disorder assessed, including 59.2% with anxiety disorder, 24.0% with substance use disorder, and 30.0% with impulse control disorder (Kessler et al., 2003). Another large scale study (n = 21,425) using similar methodology in the European context found high levels of comorbidity (41.7%) between mood disorders and anxiety and alcohol disorders. Specifically, major depression was most significantly associated with anxiety and alcohol use disorders. These patterns of comorbidity were consistent cross-nationally (Alonso et al., 2004b).

Psychopathology is common in people with physical illness. For example, the World Health Organisation (WHO, 2005) has reported that 22 percent of people with myocardial infarction, 27 percent of people with diabetes, and 33 percent of people with cancer suffer from major depression.

A number of sociodemographic factors have also been associated with increasing levels of mental ill health, most notably depression. Some of these factors include low income and poverty (Araya, Rojas, & Lewis, 1998; NHS, 1997; cited in Cochrane Review, 2000), low education and gender disadvantage (Patel, 2007), and poor accommodation and overcrowding (Hwang et al., 1999; cited in Cochrane Review, 2000). On this point it appears that the prison population are particularly vulnerable to depression.

3.6 The Burden of Depression

According to the World Health Organisation (WHO, 2009), unipolar depression is the leading cause of the burden of disease[3] in middle- and high-income countries. Recent global estimates suggest that more than 150 million people have a unipolar depressive disorder, and depression is among the leading causes of disability worldwide (WHO, 2009). In Europe, mental health problems are reportedly responsible for 20 percent of the burden of disease, yet the mental health budgets of WHO European Region countries comprise on average only 5.8 percent of their overall health expenditure. Depression alone is responsible for 6.2 percent of the burden of disease in this region (WHO, 2005b). It is estimated that almost half (45.4%) of those suffering with major depression in Western Europe receive no treatment, and this figure is significantly larger worldwide.

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[3] The burden of disease is a measurement of the gap between current health status and an ideal situation where everyone lives into old age, free of disease and disability. It is quantified in terms of the disability-adjusted life year (DALY), a measure of the number of years of potentially "healthy" life lost by virtue of being in a state of poor health or disability.

3.6.1 Depression and Suicide

Suicide is a tragic outcome of depression and mental health problems. The World Health Organisation has estimated that one suicide attempt occurs approximately every three seconds and a completed suicide occurs approximately each minute worldwide (WHO, 2009). It is among the leading causes of death, second only to road traffic incidents, in adolescents and young adults aged 15 to 35 years. Of the ten countries in the world with the highest rates of suicide, nine are within the European Region. Each year 150,000 people in this region die by suicide and 80 percent of this sample are male.

In recent years in Ireland, suicide has become the principal cause of death in young males aged 15 to 34 years. Between 1970 and 2000 the total rate of suicide has steadily increased, and recent figures indicate that the annual suicide mortality rates for Irish males have been above the European average since the late 1990's (WHO, 2004). In 2007, 460 people died by suicide in Ireland, 82.2 percent of whom were male. It is noteworthy that depression and affective disorders represent significant risk factors for attempted and completed suicide (Dumais et al., 2005; Hall, Platt, & Hall, 1999), especially in young males (Beautrais, 2000). It has been reported that depression is the most significant risk factor for suicide in the Irish population (Departments of Public Health, 2001).

3.6.2 Depression and Occupational Impairment

The burden of mental health disorders on health and productivity has long been underestimated. In many European countries, between 35 and 45 percent of absenteeism from work is a direct result of mental health problems (WHO, 2005b). Depression in itself has a significant impact on the workplace. It can affect rates of absenteeism and productivity (Burgess, Davidoff, & Goff, 1999; Jenkins, 1993), work performance, attitudes, behaviour, and relationships in the work place (WHO, 2000). For employers, it can constitute the single highest mental health and disability cost. Depressive disorders, for example, are among the most common health problems of adults in the United States workforce. It is estimated that U.S. spending on depression alone was 30-40 billion U.S. dollars in 1994, with an estimated 200 million days lost from work each year (Conti & Burton, 1994). A more recent study in England calculated the costs of lost productivity as a result of adult depression at 15.46 billion Euro, or 309.20 Euro per

head of population (WHO, 2005b). From an economic perspective, depression is responsible for the loss of billions of Euro from the world economy.

3.7 Chapter Summary

Depression is categorised in the DSM-IV-TR and ICD-10. Clinical features often manifest as changes in cognition, mood, psychosomatic state, and behaviour. The research suggests that depression is the most prevalent single mental health disorder and lifetime prevalence rates are arguably underestimated. Depression can occur at any stage in life and symptoms often persist and recur. Depression frequently co-occurs with dysthymia, anxiety disorders, substance use disorders, and physical illness. It has also been associated with socio-demographic factors such as low income and poverty, low education and gender disadvantage, and poor accommodation and overcrowding. Depression is the leading cause of the burden of disease in many developed countries. It is a significant risk factor for suicide, which, in Ireland, is the principal cause of death in young males. The economic costs of depression are substantial.

CHAPTER FOUR

Depression and Mental Health Problems in Prison

4.1 Chapter Overview

In this chapter depression and other psychological problems are presented in the context of imprisonment. Epidemiological data are presented on prevalence and comorbidity rates of disorders and symptoms among prisoners both internationally and in Ireland. The psychological impact of incarceration is discussed. The chapter concludes by emphasising the importance of individual differences and cognitive vulnerabilities in understanding prisoner mental health.

4.2 Epidemiology

The prevalence of mental health problems is substantially higher in prison populations than in community populations (Curtin et al., 2009; Gullone, Jones, & Cummins, 2000; James & Glaze, 2006; Sirdifield, Gojkovic, Brooker, & Ferriter, 2009; Shinkfield, Graffam, & Meneilly, 2009), and many disorders and symptoms appear accentuated in remand prisoners (Linehan et al., 2005; Singleton, Meltzer, & Gatward, 1997) and in prisoners with a history of self-harm (Mills & Kroner, 2005; Palmer & Connolly, 2005). Depression is frequently cited as the most common psychological disorder among prisoners (Sirdifield et al., 2009; Falissard et al., 2006).

Fazel and Danesh (2002) reviewed 62 international surveys examining clinical diagnoses of serious mental disorders in 18,530 male prisoners. They reported six-month prevalence rates of 3.7 percent for psychotic disorders and 10 percent for major depressive disorder. Duffy, Linehan, and Kennedy (2006) conducted an epidemiological study of psychiatric morbidity in the male sentenced prison population in Ireland. A stratified random sample of 438 men from 15 prisons took part in structured clinical interviews. Six-month prevalence rates of 2.7 percent for psychotic disorders, 5.0 percent for major depressive disorder, 8.5 percent for affective disorders, 13.8 percent for anxiety disorders, 79.6 percent for substance use disorders, and 26.7 percent for any mental disorder were reported. Lifetime prevalence rates of depression were significantly higher in life sentenced prisoners than in fixed term prisoners and the comorbidity rates of mental illness and substance misuse were reportedly very high. Linehan and colleagues (2005) conducted a similar study with male remand prisoners in

Ireland. They reported six-month prevalence rates of 7.6 percent for psychotic disorders, 10 percent for major depressive disorder, 12.6 percent for affective disorders, 6.8 percent for anxiety disorders, 69.7 percent for substance use disorders, and 21.4 percent for any mental disorder.

The severity of self-reported psychological symptoms has also been examined in prison populations. Shinkfield et al. (2009) recruited a sample of pre-release prisoners to complete the Beck Depression Inventory-Second Edition (BDI-II) and the Beck Anxiety Inventory (BAI). They found 8.1 percent of prisoners reported severe levels of depression and 2.3 percent reported severe levels of anxiety. Palmer and Connolly (2005) found that 8.3 percent of general population prisoners and 12.5 percent of vulnerable prisoners with a history of self-harm scored in the severe range on the Beck Hopelessness Scale (BHS). Additionally, 16.7 percent of general population prisoners and 45.9 percent of vulnerable prisoners with a history of self-harm reported severe depressive symptoms on the BDI-II.

The prevalence of mental health disorder diagnoses and severity of associated symptoms are indicative of the extent of the difficulties facing individuals in prison. Depression has a significant impact on the psychological well-being of prisoners and is frequently cited as the most common psychological problem associated with imprisonment. In general, the mental health needs of this population are not well understood and have arguably not been sufficiently met (Sirdifield et al., 2009).

4.3 The Psychological Impact of Imprisonment

Historically, it has been assumed that imprisonment is detrimental to the psychological well-being of those detained. This 'pains of imprisonment' model emerged from the descriptions and accounts of prisons in Britain and the United States provided by researchers and academics over the years. These accounts typically characterised prisons as inhumane, over-crowded, regimented, and punishment oriented institutions (e.g. Cohen & Taylor, 1972). Notwithstanding the criticisms and underlying assumptions that imprisonment was harmful, little empirical evidence was reported for the behavioural and psychological impact resulting from confinement. In an attempt to clarify some of these issues, Bukstel and Kilmann (1980) reviewed 90 studies examining the psychological effects of incarceration. Although their comparative analysis was at times hampered by methodological problems within the studies and by variation in the participant samples in terms of prisoner profile and length of

imprisonment, the authors reported that imprisonment is not harmful to all individuals. They found that some individuals deteriorated over time in response to being detained, others experienced an improvement in their psychological functioning, and still others showed little evidence of change. These findings lead them to conclude that the psychological effects of imprisonment are determined by a complex interplay of variables. Individual differences, institutional orientation, degree of crowding, phase of sentence, and peer group affiliation were noted in this regard. Bonta and Gendreau (1990) similarly reviewed research on the effects of incarceration and found inconclusive evidence supporting the 'pains of imprisonment' model. They reported that solitary confinement, long-term imprisonment, and short-term detention showed no demonstrable detrimental effects. There was evidence that prisoners were more likely to report experiencing emotional distress at the beginning of their imprisonment term and that crowding had an impact on psychological well-being, however, these associations were both influenced by person relevant variables. They found explicit acceptance that individual differences significantly moderated responsiveness to imprisonment. Gullone and colleagues (2000) examined individual differences in a study of coping styles and psychological well-being in prisoners. They reported that prisoners experienced significant psychological difficulties and engaged in less adaptive coping strategies. They concluded that coping style is a more salient predictor of well-being than prison-related variables such as sentence length or time spent in prison. Cognitive factors have subsequently been reported to underlie the coping strategies used by many prison inmates (Mohino, Kirchner, & Forns, 2004).

The 'interactionist' model of adjustment to prison suggests that individual characteristics influence behavioural and psychological regulation within the framework of the prison environment. Distress occurs when an individual's adaptive capacity is inadequate to meet internal and/or environmental demands and stresses (Wright, 1991). The literature on the psychological effects of imprisonment appears to emphasise a diathesis-stress approach to understanding how individuals differ in their response to incarceration. The diathesis represents a predisposing vulnerability to psychological distress. Individuals with this vulnerability are more likely to experience distress in response to stressful events. The 'pains of imprisonment' in this model represents the stress.

The learned helplessness and hopelessness theories of depression are based on a diathesis-stress framework. They have influenced decades of research on the aetiology

of depression evolving from the central thesis that inescapable aversive circumstances precipitate the onset of depressive symptoms, moderated by a cognitive vulnerability. In this regard, the learned helplessness and hopelessness theories may provide a useful model for understanding psychological difficulties, specifically depression, in prisoners. The following chapter outlines these theories in more detail.

4.4 Chapter Summary

There is a higher prevalence rate of mental health disorders in prison populations than in community populations and depression is often the most common psychological problem affecting prisoners. It has long been assumed that imprisonment is detrimental to the psychological well-being of prisoners, however there is little empirical evidence that behavioural and psychological harm inevitably result from confinement. The psychological impact of imprisonment is determined by a complex interplay of variables and individual differences are believed to play a significant moderating role. In this regard, the literature emphasises a diathesis-stress approach to understanding how individuals differ in their response to incarceration. The learned helplessness and hopelessness theories of depression similarly operate under a diathesis-stress framework hypothesising that inescapable aversive circumstances precipitate the onset of depressive symptoms, moderated by a cognitive vulnerability. This theoretical approach may provide a useful model for understanding depression in prisoners.

CHAPTER FIVE

Learned Helplessness

5.1 Chapter Overview

This chapter describes the development of the learned helplessness hypothesis. It outlines the process by which early experiments on avoidance learning in animals lead to new insights in understanding the aetiology of depression in humans.

5.2 The Evolution of Learned Helplessness

The concept of learned helplessness emerged from research examining the behavioural effects of exposing animals to uncontrollable aversive events. In the 1960's Solomon and his students at the University of Pennsylvania manipulated experiments to test a new theory on avoidance learning. In these experiments a warning signal (e.g. a light or alarm) preceded the occurrence of an aversive stimulus (e.g. a shock) and the animal was required to engage in a particular behavioural response (e.g. jumping over a barrier) in order to escape or avoid the stimulus. Research found that animals consistently learned to make the appropriate response to the warning signal, thereby avoiding the impending shock (Maier & Seligman, 1976). Initially, an adaptation of Mowrer's (1947: cited in Overmier, 2002) two-process theory, involving classical conditioning and instrumental learning, was proposed to explain the findings. In short, the association between the warning signal and the shock over repeated trials results in the signal becoming conditioned and producing the same response properties as the shock itself. Thus, the initial natural fear response to the shock becomes elicited by the warning signal, and the escape response is subsequently reinforced by an associated reduction in fear/anxiety. So the animal does not learn to avoid the shock because of an expectation, as previously hypothesised, rather the animal is motivated to escape a conditioned fear produced by the warning signal (Maier, Peterson, & Schwartz, 2000).

In an attempt to elucidate further the merits of escape versus avoidance learning, Solomon and his students designed further experiments in which a conditioned warning signal was replaced by a novel unconditioned warning signal to see if it would produce the same behavioural response. It was hypothesised that if the animals were truly learning to avoid shock as a result of an expected outcome, then a novel warning signal should elicit the same avoidance response. On the other hand, if the animal was

engaging in an escape response as a result of operant conditioning, then a novel warning signal would not produce the same response. Having classically conditioned an initial warning signal through repeated associations with an inescapable shock, Overmier (1968; Overmier & Leaf, 1965) surprisingly found that in subsequent avoidance procedures animals failed to learn to avoid or escape an escapable shock following the conditioned or novel signal. This apparent anomaly attracted the curiosity of Seligman and his colleagues, who developed an interest in the process by which classical conditioning involving an uncontrollable aversive stimulus interfered with subsequent avoidance learning in animals.

In subsequent experiments Overmier and Seligman (1967) exposed animals to a series of either escapable shocks or inescapable shocks replicating the classical conditioning experimental paradigm. They found that the latter group failed to learn to escape in subsequent exposures to escapable shock. They also found that exposing the former group to inescapable shock did not interfere with later learning. Seligman and Maier (1967) reasoned that the initial learning process was of critical importance since the shocks did not differ between groups. It appeared that the animals that were initially exposed to inescapable shock were denied the opportunity to learn the causal connection between the escape response and reduced fear/anxiety associated with the absence of shock. Essentially, the animals learned that the aversive outcome was response-independent and that any response was ineffective as a negative reinforcer. Maier, Seligman, and Solomon (1969) argued that it was this learning that interfered with the subsequent connection of escape response and no shock, and also impacted on the motivation to attempt to escape. In addition to the deficits in later learning and motivation to escape, impairments in behavioural coping and emotional responsiveness were associated with exposure to inescapable and hence uncontrollable aversive events (Overmier & Seligman, 1967). It seemed that the animals succumbed to passivity, among other deficits, by learning that no response in their repertoire could affect change. This phenomenon became known as learned helplessness.

A number of laboratory experiments attempted to investigate whether the learned helplessness hypothesis was relevant to humans (Glass & Singer, 1972; Hiroto, 1974; Klein & Seligman, 1976; Miller & Seligman 1975; Rodin, 1976). For example, Hiroto (1974) conducted an experiment in which college students were assigned to one of three conditions. In the controllable aversive stimulus condition participants were exposed to a loud noise that could be terminated by pressing a button four times. In the

uncontrollable aversive stimulus condition the loud noise terminated independent of participants' responding, and in the control condition participants were not exposed to noise. In a subsequent novel task, participants in the control condition and the controllable aversive stimulus condition readily learned to terminate noise, whereas participants who experienced uncontrollable noise failed to escape and listened passively to the noise in this later task. Similar to the ancillary deficits evident in animals following exposure to an uncontrollable aversive event, humans who were exposed to experimental uncontrollability experienced negative affect, slower problem-solving, poorer task mastery, and perseveration with unproductive strategies (Maier, Peterson, & Schwartz, 2000).

It was apparent that humans too could learn to become helpless as a result of exposure to an uncontrollable aversive event. However, it seemed that the behaviourally driven two-process theory could not adequately account for the observed sequelae of learned helplessness and was not concerned with the associated internal and cognitive processes. According to the learned helplessness hypothesis, it was not that mere exposure to uncontrollability rendered one helpless, but that one comes to expect that outcomes are uncontrollable in order to become helpless, and this produces a variety of deficits. The introduction of a cognitive concept to the learned helplessness hypothesis offered promise for the development of a theory. Central to this theory, Maier and Seligman (1976) proposed that prolonged exposure to uncontrollable aversive events in which an organism learns that its behaviour is independent of the outcome results in an expectation that future events will be similarly uncontrollable and is responsible for motivational, cognitive, and emotional deficits associated with helplessness.

5.3 Learned Helplessness and Depression

Seligman (1972, 1975) hypothesised that learned helplessness could provide a model for understanding the aetiology of depression. He highlighted that the symptoms of helplessness paralleled those associated with depression such as passivity, cognitive deficits, emotions such as sadness, anxiety, and hostility, reduced appetite and drives, neurochemical disturbances, increased susceptibility to illness, and occasionally loss of self-esteem. The learned helplessness model hence proposed that learning that outcomes are uncontrollable results in the motivational, cognitive, and emotional symptoms associated with depression (Seligman, 1975).

Motivational deficits emerge from an expectation that responses will be ineffective and that one will be helpless to change the likelihood of the negative outcome. These deficits are evident in delayed initiation of voluntary responses, passivity, intellectual slowness, and social apathy (Abramson, Seligman, & Teasdale, 1978). Cognitive deficits are reflected in problem-solving difficulties. These difficulties are evident in the use of constrained cognitive strategies as a consequence of expecting response-outcome independence. Depressed affect, an emotional feature, results from learning that outcomes are uncontrollable and from an expectation that future circumstances will be no better.

5.4 Chapter Summary

Learned helplessness emerged from research examining the behavioural effects of exposing animals to uncontrollable aversive events. Under these conditions, animals learned that the aversive outcome was response-independent and were subsequently unable to avoid escapable shock. These deficits in later learning were often accompanied by reduced motivation to escape and impairments in behavioural coping and emotional responsiveness. This phenomenon became known as learned helplessness. Humans who were exposed to experimental uncontrollability experienced similar deficits. The learned helplessness hypothesis proposed that these deficits emerged from an expectation that outcomes are uncontrollable. Thus, exposure to uncontrollable aversive events in which one learns that behaviour is independent of the outcome, results in an expectation that future events will be similarly uncontrollable and is responsible for motivational, cognitive, and emotional symptoms of helplessness. Seligman hypothesised that the deficits associated with depression could be understood in a similar way.

CHAPTER SIX

The Reformulation of Learned Helplessness

6.1 Chapter Overview

This chapter describes the reformulation of the learned helplessness hypothesis. It reviews some of the limitations that gave rise to a reformulation and outlines the key proposals that gave further impetus to the theory. Chief among these was the concept of a dispositional attributional style that predisposes helplessness deficits. The relevance of the reformulation to depression is outlined and the measurement of attributional style is considered in this regard. Research supporting the reformulation is subsequently reviewed.

6.2 Shortcomings in the Learned Helplessness Hypothesis

The expectation of non-contingency between response and outcome resulting from perceived uncontrollability was crucial to the learned helplessness theory. However, the theory was vague in specifying the cognitive processes by which response-outcome non-contingency learning in previous uncontrollable events formed an expectation in subjects that the outcome of future events would be similarly non-contingent. In addition, it did not address the mechanisms by which the formation of expectations could induce particular deficits nor the boundary conditions associated with learned helplessness. For example, the original theory could not explain why helplessness deficits at times generalised across tasks (e.g. Hiroto & Selgiman, 1975) and at others were circumscribed to a specific task (e.g. Cole & Coyne, 1977). It could not explain why aversive events at times precipitated transient depressed affect, at others precipitated long lasting depressed affect, and still at others invoked no change in affect (e.g. Brown & Harris, 1978).

6.3 The Reformulation of Learned Helplessness

Abramson et al. (1978) proposed a reformulation, hypothesising that expectations about future non-contingency are determined by the attributions an individual makes for non-contingency between his actions and outcomes in the here and now. In other words, once an individual perceives non-contingency, he attributes his associated helplessness to a cause. The nature of these causal attributions determine his

expectations about future response-outcome associations, which in turn determine the type (self-others), generality, and chronicity of the helplessness symptoms.

Drawing from attribution theory (Heider, 1958; cited in Abramson et al., 1978) and literature on locus of control (Rotter, 1966), Abramson et al., argued that when a person believes that outcomes are more or less likely to happen to him than to relevant others (e.g. "my colleagues would not have achieved a similarly bad outcome"), he attributes these outcomes to internal dispositional factors (e.g. stupidity, lack of ability etc.). On the other hand, if he feels he is as likely as relevant others to experience a particular outcome (e.g. "they could not have done any better than me"), he attributes this to external situational factors (e.g. task difficulty, bad luck etc.). This distinction was labelled personal versus universal helplessness and was used to define the attributional dimension of internality. The reformulation proposed that a person's tendency to attribute non-contingency internally or to personal factors increased the likelihood that low self-esteem would be symptomatic of his helplessness.

Another potential consequence of perceived uncontrollability highlighted by the reformulation that was not adequately addressed in the original learned helplessness theory concerned attributions of over-generalisation. This occurs when a person inappropriately generalises the expectation of non-contingency to a new controllable situation. This was exemplified by Hiroto's (1974) participants in the 'uncontrollable' condition who subsequently failed to escape the controllable noise. According to the reformulation, when non-contingency expectations are applied to a broad range of situations they are considered global. Hence, the person attributes the cause of the aversive event to global factors that affect different situations (e.g. "I failed the history test because I'm no good at anything"). Conversely, when the cause is attributed to a particular situation or deficit they are said to be specific (e.g. "I failed the history test because I'm no good at that subject"). Global attributions imply that non-contingency between response and outcome will be present across many different situations. This attributional dimension determines whether expectations of future helplessness will be broad or narrow in scope.

Abramson and colleagues also emphasised the duration of the helpless expectation as a defining attributional feature. Some deficits may last minutes and others could persist for much longer periods depending on the individual and their circumstances. Helplessness that is long-lived or recurrent was described as chronic (e.g. "I'll never be able to achieve my goal") whereas short-lived or intermittent

helplessness was described as transient (e.g. "I did not achieve what I wanted on that occasion"). According to the reformulation, attributing the cause of uncontrollable aversive events to factors that are stable over time leads to chronic deficits because it implies that a person will come to expect that non-contingency between response and outcome will be long lasting and recurrent in the future.

Where the original theory struggled to explain how participants' expectations formed and affected their performance on later tasks, the reformulation proposed that the causal attributions made by these participants influenced their expectations about future response-outcome non-contingency, and determined performance deficits that were internalised, stable over time, and affected a range of tasks (e.g. Roth & Kubal, 1975).

6.4 The Reformulated Model of Depression

The reformulation argued that the original learned helplessness model offered an inadequate account of the aetiology of depression. Firstly, it challenged that the expectation of uncontrollability was only sufficient to induce depressed affect in circumstances where the estimated probability of a desired outcome was low or the estimated probability of an aversive outcome was high. Thus, depressed affect result from an expectation that bad outcomes will occur, not merely from their expected uncontrollability (Abramson et al., 1978). The reformulation hypothesised that negative expectations about the outcome of future events precipitates the onset of helplessness and depression. Predisposing these expectations is a person's explanation of an event, and this, according to Peterson and Seligman (1984), is influenced by the nature of the situation and the person's tendency to make particular causal attributions.

A second shortcoming of the original theory was its failure to address the issue of low self-esteem, a predominant feature in other theories of depression (Beck 1967, 1976). The reformulation proposed that attributions of a personal, as opposed to a universal nature in response to aversive outcomes precipitate decreased self-esteem and low self-efficacy, and invoke a sense of worthlessness. Indeed, research at the time supported the hypothesis that individuals with depression tend to attribute their failures to internal factors, such as lack of ability (Blaney, 1977; Klein & Seligman, 1976; Rizley, 1978) and also tend to have lower self-regard (Hammen & Krantz, 1976).

Finally, the original learned helplessness model of depression failed to account for differences in the chronicity and generality of deficits observed in depression. The

reformulation suggested that these deficits derive from a tendency to attribute aversive outcomes to stable and global factors, respectively. Indeed, research found that individuals with depression tended to make more global and stable attributions in response to perceived negative outcomes (Hammen & Krantz, 1976; Seligman, Abramson, Semmel, & von Baeyer, 1979), and more specific and transient attributions in response to successful outcomes (Rizley, 1978; Seligman et al., 1979). The reformulation also implied that the intensity or severity of the attribution predicts the extent to which helpless expectations persist and predispose later deficits.

It became apparent that attributions of an internal, global, and chronic nature (e.g. "I'm stupid, it affects everything I do, and so I'll never be able to achieve anything in life") had implications for the onset and maintenance of depression. It followed that the reformulation also had therapeutic implications for the treatment of depression. Abramson et al. outlined four broad therapeutic strategies based on this reformulation: i) change the environment or goal to increase the likelihood of a desired outcome or decrease the likelihood of an aversive outcome; ii) make highly preferred unobtainable outcomes less preferred and reduce the level of aversion associated with negative outcomes; iii) when the outcomes are obtainable, change the expectation from uncontrollability to controllability by modifying the distorted expectation or increasing the individual's repertoire of skills; iv) redirect unrealistic attributions of failure towards external, unstable, and specific factors.

6.5 The Measurement of Attributional Style

The reformulated learned helplessness model of depression suggested that individual differences exist in terms of cognitive "attributional style"[4], and that individuals with a tendency to attribute the causes of negative events to internal, stable, and global factors are more likely to experience general and chronic helpless depression with low self-esteem.

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[4] The term *attributional style* was used by Abramson et al. (1978) in their reformulation to refer to the latent tendency to make particular types of causal attributions in response to uncontrollable negative events. Peterson and Seligman (1984) preferred the term causal *explanation* to *attribution* because it purportedly better encapsulated situational and dispositional factors. They felt that "attribution connotes projection too strongly" (p. 354). Since then, the terms *explanatory style* and *attributional style* have been used, sometimes interchangeably, to refer to the same conceptual construct. Although the latter may carry connotations from attribution theory, this author agrees with Abramson, Dykman, and Needles (1991) that attributional style illustrates the link between the reformulation's causal attribution component and the causal attribution process espoused by social psychology. In addition, attributional style is specific, whereas an *explanation* involves not just a consideration of the cause, but could involve inferences about the self and about the associated consequences. The term attributional style is therefore used in this thesis.

In an attempt to elucidate attributional style as an underlying cognitive personality characteristic and standardise its measurement, Seligman et al. (1979) employed an attributional style scale. The scale presented twelve hypothetical situations, six with positive outcomes and six with negative outcomes. For each situation, respondents were asked to write down one major cause of the outcome. They were subsequently required to rate each cause on a seven-point scale corresponding to the three attributional dimensions described in the reformulated model of depression: internal-external; stable-unstable; and global-specific. Respondents were also asked to rate on a seven-point scale how important each situation would be if it happened to them. Seligman et al. (1979) administered the attributional style scale and two measures of depression, the Beck Depression Inventory (BDI; Beck, 1967) and the Multiple Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965) to a sample of 145 university students. The results indicated that, compared to non-depressed students, depressed students attributed negative outcomes to internal, stable, and global causes, and attributed positive outcomes to external and unstable causes. Significant positive correlations were reported between the depression measures and ratings of internality, stability, and globality for negative outcomes. According to the authors, the findings revealed a *depressive attributional style* and supported the reformulation of learned helplessness and depression.

Three of the twelve events described in the attributional style scale were subsequently rewritten, due to low rating variance and low item-total correlations, and the scale was renamed the Attributional Style Questionnaire (ASQ: Peterson, Semmel, vonBaeyer, Abramson, Metalsky, & Seligman, 1982). The format of the original scale was retained. Having investigated the revised questionnaire's psychometric properties with a sample of 130 university students, Peterson et al. reported on the ASQ's promise as a reliable and valid instrument. They argued that the ASQ supported the concept of attributional style as a stable personality characteristic. The ASQ is described in greater detail in Chapter 10.

In 1989 Schulman, Castellon, and Seligman described the Content Analysis of Verbatim Explanations (CAVE) technique. CAVE provided a method to extrapolate naturally occurring causal attributions that people provided in their verbatim accounts of events in their lives. These accounts were blind-rated by researchers along the dimensions of internality, stability, and globality, corresponding to the reformulation. Schulman et al. reported that rating attributions with the CAVE technique significantly

correlated with ASQ ratings and with depressive symptoms. They concluded that CAVE is a valid method for assessing attributional styles when respondents are either unwilling or unable to complete the ASQ.

Having reviewed much of the literature pertaining to the measurement of attributional style, Peterson (1991) suggests that "there is good evidence that attributional style is a consistent individual difference, that it pertains to the particular attributions that people offer in everyday life, and that its relations to external variables are as robust as the correlates to be expected of any personality dimension" (p.8).

6.6 Evidence Supporting the Reformulated Model

The development of the ASQ alongside other measures of attributional style (e.g. the Content Analysis of Verbatim Explanations) provided a framework to investigate further and refine the reformulated model of depression. Peterson and Seligman (1984) employed a number of research strategies in this regard. Firstly, they examined cross-sectional studies of depressive symptoms and attributional styles for negative events (e.g. Seligman et al., 1979). As predicted by the reformulation, internal, stable, and global attributions for negative events were positively associated with clinician-rated and self-reported measures of depression (Eaves & Rush, 1984; Peterson, Bettes, & Seligman, 1982; Raps, Peterson, Reinhard, Abramson, & Seligman, 1982: cited in Peterson & Seligman, 1984).

An empirical link between attributional style and depression was promising for the reformulated model, however, evidence of association did not imply causality. Further research was, therefore, necessary to investigate whether a depressive attributional style predisposed depression or vice versa, or indeed whether some third variable determined both depression and depressive attributional style. Seligman et al., (1984) examined attributional styles and depressive symptoms in school children on two occasions separated by a period of six months. Attributional styles covaried with depression scores and were consistent across time. It was also reported that attributional styles for negative events at time one correlated with subsequent depressive symptoms at time two, six months later. Similar findings were reported by Nolen-Hoeksema (1983: cited in Peterson & Seligman, 1984). Golin, Sweeney, and Shaeffer (1981) employed a cross-lagged panel correlation analysis to examine the causal role of attributions in depression over a one month period with university students. Stable and global attributions for negative events were considered plausible causes of depression.

These findings appeared to support the reformulation that attributional style is a stable personality characteristic that precedes later depression. It is noteworthy that Abramson et al. (1978) argued that a depressive attributional style in itself is not sufficient to precipitate depression. Rather, they suggested it predisposes the risk of depression in response to uncontrollable aversive life events. Since the aforementioned studies did not examine aversive events, this hypothesis could not be fully supported. In order to provide further support to the reformulation, it was necessary to establish whether pre-existing depressive attributional style followed by a negative event increased the risk of depression.

Using a prospective design Metalsky et al. (1982) found that university students with a pre-existing tendency to attribute negative events to internal and global causes were more likely to report feeling depressed having received a lower than expected midterm grade (negative event). In the absence of a negative event, the depressive attributional tendencies of students who received a high grade did not correlate with later depression. In a similar study Peterson, Nutter, & Seligman (1982; cited in Peterson & Seligman, 1984) reported that significant increases in depressive symptoms after a period of imprisonment (negative event) were strongly associated with depressive attributional style at the beginning of imprisonment. In both studies, individuals who attributed negative events to external, unstable, and specific causes were less likely to experience depression in response to the negative event. These findings support the diathesis-stress theory of the reformulation which proposed that depressive attributional style is a characteristic vulnerability, which in concert with an environmental stressor increases the risk for depression. In any such quasi-experimental studies it is difficulty to infer the extent to which one variable influences changes, or indeed causes the other because the negative event cannot be experimentally manipulated.

Laboratory experiments can operationally control variables that are often extraneous in naturalistic studies and can isolate the influence of particular independent variables of interest. One example of this was described earlier in Hiroto's (1974) experiment in which he assigned participants to one of three conditions to examine the impact of exposure to uncontrollable aversive events. Alloy, Peterson, Abramson, and Seligman (1984) conducted a similar experiment to investigate the impact of pre-existing attributional style on participants' task performance following exposure to an aversive event. They found that participants who attributed negative outcomes to global

causes showed deficits when tested on dissimilar cognitive tasks following inescapable noise. Peterson and Seligman (1981) reported that attributing negative outcomes to stable causes was associated with the duration of laboratory-induced helplessness. While laboratory experiments of this nature present a number of limitations (for a critical review see Silver, Wortman, & Klos, 1982), these findings support the reformulation's hypothesis that global attributions predict generalised deficits and stable attributions predict long-lasting deficits in response to uncontrollable aversive events. While individual studies and methodologies supporting the reformulation are not without criticism, it is the convergence of results across different strategies of investigation and different populations that bolster the validity of the findings and support for the reformulation (Peterson & Seligman, 1984).

6.7 Chapter Summary

The learned helplessness hypothesis was vague in specifying the processes by which expectations of response-outcome non-contingency in future events occurred. In addition, it did not address how these expectations could induce particular deficits. The reformulation hypothesised that the attributions an individual makes for non-contingency between his actions and future outcomes were crucial. It proposed that internal attributions increased the likelihood of low self-esteem, global attributions implied that helplessness would occur across many different situations, and stable attributions lead to lasting chronic deficits. It became apparent that attributions of an internal, global, and chronic nature had implications for the onset and maintenance of depression. The standardisation of the measurement of attributional style was important to the development and support of the reformulation. Studies employing measures such as the ASQ showed that the tendency to attribute negative outcomes to internal, stable, and global causes was associated with depression. Findings also supported the diathesis-stress hypothesis of the reformulation which proposed that depressive attributional style is a characteristic vulnerability, which in concert with an environmental stressor increases the risk for depression.

CHAPTER SEVEN

The Hopelessness Depression Theory

7.1 Chapter Overview

The hopelessness depression theory is reviewed in this chapter. Its emergence is outlined in relation to limitations identified within the reformulated model of depression. Hopelessness depression is described as a depression subtype arising from a causal chain of distal vulnerabilities and proximal causes. The evidence supporting the theory is subsequently presented.

7.2 Limitations of the Reformulation

The reformulated theory of learned helplessness (Abramson et al., 1978) offered new direction as a model of depression by considering attributional style a significant risk factor. Since then a plethora of research has reported data supporting the association between the attributional dimensions and depressive symptoms. This is exemplified in a meta-analysis involving 104 studies conducted by Sweeney, Anderson, and Bailey (1986). Notwithstanding the quantity of research, the reformulation has been criticised on a number of levels (e.g. Abramson, Dykman, & Needles, 1991; Anderson & Arnoult, 1985a; Brewin, 1991; Carver, 1989; Coyne & Gotlib, 1983; Tennen & Affleck, 1991; Weiner, 1991). Some researchers have, as a result, contended that the reformulation has a weak empirical base (Barnett & Gotlib, 1988; Munton, 1985). Abramson, Metalsky, and Alloy (1989) acknowledged that the reformulation provides an attributional account of human helplessness that has implications for depression, but argued that it does not explicitly present a clear theory of depression. They proposed a hopelessness depression theory, hypothesising the existence of a hopelessness depression subtype drawing from the reformulated model. The authors recognised that depression was not a homogenous disorder, but often presented with diverse symptoms, causes, and courses, and often required individualised interventions and prevention strategies. The defining features of hopelessness depression include retarded initiation of voluntary responses (motivational deficit), depressed affect, suicidal ideation and attempts, apathy, psychomotor retardation, sleep disturbances, concentration difficulties, and mood related negative cognitions (Abramson et al., 1989).

7.3 The Hopelessness Depression Theory

The hopelessness depression theory describes a sequence of distal and proximal contributory causes hypothesised to culminate in the symptoms of hopelessness depression. It proposes that hopelessness is a proximal antecedent sufficient to invoke these symptoms. In other words, hopelessness is an aetiological factor which immediately precedes and ensures the onset of hopelessness depression. According to the theory, hopelessness is defined in terms of a negative outcome expectancy (i.e. the expectation that desired outcomes will not occur or that negative outcomes will occur), and an expectation that one will be helpless to change the likelihood of the undesired outcome. Helplessness is therefore seen as a necessary but insufficient component of hopelessness.

Precipitating the formation of hopelessness is the occurrence of a sequence of contributory events in a causal chain. For example, a negative life event, rather than an uncontrollable life event per se, sets the occasion for an individual to make inferences about the causes and consequences of the outcome and to make inferences about the self in relation to the outcome. Hopelessness is more likely to develop if the causal inferences or attributions are stable and global, as emphasised by the reformulation, and if the causes are considered important. Negative inferences about the consequences of the event and about the self in light of the occurrence of the event also contribute to the formation of hopelessness. This triad of inferences (i.e. about the cause, consequence, and self) are said to moderate the association between negative life events and the symptoms of hopelessness depression.

The theory considers attributional style a distal vulnerability factor (diathesis) that influences the nature of peoples' causal inferences in response to negative events (stress). Contrary to the reformulation, the hopelessness theory deemphasises the importance of internal attributions as necessary to the development of hopelessness depression and to the loss of self-esteem. It also deemphasises the cognitive diathesis in determining depression by highlighting the importance of other situational, interpersonal, developmental, and genetic factors. However, it does not explicate the operational mechanisms of these contributing factors. In short, the theory describes the chain of events, from distal cognitive tendencies (e.g. attributional style) to more proximal factors such as situational cues, event importance, and expectancy inferences, leading to hopelessness and ultimately to hopelessness depression. Abramson et al. (1989) suggested that disrupting this causal chain of events with effective therapeutic

strategies could prevent the occurrence or recurrence of hopelessness. Restoring hopefulness by modifying the hopelessness-inducing behaviours or environment, teaching skills to reduce the stressfulness of life events, or changing the cognitive diatheses (e.g. attributional style) that predispose hopelessness depression were suggested in this regard. The authors held that attributing positive outcomes to global and stable factors, inferring positive consequences from the outcome, and making positive inferences about the self protected against hopelessness.

7.4 Evidence Supporting the Hopelessness Depression Theory

Several studies have reported findings supporting the hopelessness theory. Generally, there is evidence indicating that hopelessness temporally precedes the onset of depression (Rholes, Riskind, & Neville, 1985; Carver & Gaines, 1987), hopelessness is more significantly associated with depression than with other psychopathologies (Hamilton & Abramson, 1983; Beck, Riskind, Brown, & Steer, 1988), and amongst individuals with depression, hopelessness is strongly associated with suicidal ideation and attempts (Beck, Steer, Kovacs, & Garrison, 1985; Dyer & Kreitman, 1984; Wetzel, Margulies, Davies, & Karam, 1980). More specifically, studies investigating the link between attributional style and hopelessness depression have reported that the tendency to attribute negative events to stable and global causes (termed *hypothesised depressogenic attributional style* by Abramson and colleagues) is more closely associated with the symptoms of hopelessness depression than with other depression subtypes (Joiner, 2001; Sturman, Mongrain, Kohn, 2006).

A number of researchers have sought to assess the symptom profile of hopelessness depression in an attempt to investigate its validity as a depression subtype. While the evidence from taxometric studies appears not to support the hopelessness depression distinction (e.g. Haslam & Beck, 1994; Whisman & Pinto, 1997), factor analyses and analyses of intercorrelations between hopelessness depression symptoms have supported the theoretical subtype. For example, in a factor analytic study Joiner et al. (2001) examined symptom clusters of depression in large clinical (n = 3,128) and non-clinical (n = 1404) samples. Their findings support the presence of a distinct depression subtype consistent with the hopelessness theory. Other studies have demonstrated that the symptoms of hopelessness depression correlate significantly with each other, but not with other depressive or psychopathological symptoms (Alloy & Clements, 1998).

In testing the diathesis-stress component of the hopelessness theory, Metalsky et al. (1987) found that students with a pre-existing depressogenic attributional style experienced more enduring affective reactions to receiving low grades than did students who did not have this style. No such relationship was evident between attributional style and depressive symptoms in the absence of a low grade. Consistent with the diathesis-stress and moderating component of the theory, the results suggest that the enduring affective reaction was predicted by the interaction between attributional style and the negative event. Where one of the interacting variables was absent, this moderating effect did not occur and the affective symptoms were not as enduring. Findings supporting the moderating component of the diathesis-stress interaction have been reported in studies of both negative life events (Alloy, Just, & Panzarella, 1997; Calvete, Villardon, & Estevez, 2008; Olinger, Kuiper, & Shaw, 1987) and positive life events (Needles & Abramson, 1988). More recently Abela, Parkinson, Stolow, and Starrs (2009) conducted a study in which adolescents completed measures of attributional style, ruminative tendencies, and depressive symptoms at time one, and completed measures assessing negative events and depressive symptoms again six weeks later. Consistent with the diathesis-stress and moderating component of the hopelessness theory, depressive inferential style (i.e. a composite of attributional style and inferences about the self and negative consequences) interacted with negative events to predict increases in symptoms associated with hopelessness depression, but not in general depressive symptoms.

It has been reported that cognitive therapy is an effective treatment for depression (Beck et al., 1985; Shaw, 1977). Abramson et al. (1989) argued that the goals of cognitive therapy overlap with those indicated for hopelessness depression in modifying the cognitive diathesis (e.g. attributional change). Numerous studies have examined the effects of attributional change via cognitive therapy on depressive symptoms. Needles and Abramson (1990) proposed a model of the recovery process from depression based on the hopelessness theory. Using a prospective design, they found that enhancing attributional style for positive events in concert with the experience of positive events predicted a reduction in hopelessness and remission of depression symptoms. Evans et al. (1992) found that changes in attributional styles were significantly greater in patients who received cognitive therapy than in patients who received pharmacotherapy, and the former group experienced half the rate of post-treatment relapse than the latter. In addition, attributional style was the only cognitive

variable to predict future relapse in depression. Fresco, Moore, Walt, and Craighead (2009) hypothesised that diminishing the impact of the cognitive diathesis through attributional retraining would reduce post-event depressive symptoms. Participants received four weeks of 'self-administered optimism training' in which they recorded positive and negative daily life events and rated their associated causal attributions for internality, stability, and globality. Participants were then instructed to provide a revised cause for the events and to re-rate them on the attributional dimensions. Fresco et al. found that, compared to the control group, the training group demonstrated a significant reduction in their depressogenic attributional tendencies. They also reported a significant correlation between attributional change and depressive symptom change in the training group. Cumulatively, findings from studies investigating the efficacy of interventions appear to support the hopelessness depression theory, and indeed many aspects of the reformulation.

7.5 Chapter Summary

Research has supported the association between the attributional dimensions and depressive symptoms. However, some researchers have argued that the reformulation has a weak empirical base and does not present a clear theory of depression. Abramson and colleagues proposed a hopelessness depression theory, hypothesising the existence of a hopelessness depression subtype. According to the theory, a triad of inferences about the cause, consequence, and self moderate the association between negative life events and the symptoms of hopelessness depression. Studies analysing the factor structure of the hopelessness depression subtype and studies investigating the moderating component of the diathesis-stress interaction and the efficacy of interventions have supported the hopelessness depression theory.

CHAPTER EIGHT

Critical Appraisal of the Model

8.1 Chapter Overview

This chapter presents an overview of the criticisms that have been raised about the attributional model of depression proposed by the reformulation and hopelessness depression theories. Issues are raised in relation to the concept of uncontrollability, the use of an attributional composite score and the contribution of individual dimensions. Issues are also raised in relation to attributional style and positive events, and attributional style and anxiety. Shortcomings in the theories' accounts of the aetiology of an attributional style are raised in relation to alternative theoretical models. The application of an attributional model to understanding depression in prisoners is subsequently proposed.

8.2 Critical Appraisal of Theory and Research

The meaning and measurement of attributional style and certain conceptual aspects of the reformulated model of learned helplessness and the hopelessness depression theory have been critically appraised by many researchers. These appraisals have raised a number of issues that have received attention and been debated in the literature. Some of the more pertinent issues relevant to the present thesis are subsequently outlined.

8.2.1 Attributional Style and Anxiety

Epidemiological studies reveal extensive comorbidity between depression and anxiety (Alonso et al., 2004b; Kessler et al., 2003). It has been reported that anxiety and depressive symptoms often co-occur and that high levels of negative affect often characterise both (Watson, Clarke, & Carey, 1988). The association between depressogenic attributional style and depressive symptoms is well established in the literature and has lead researchers to hypothesise a link between attribution style and anxiety. In investigating this link, Luten, Ralph, and Mineka (1997) operationalised 'threat-relevant' events along with the original loss/failure-relevant events in an Expanded ASQ. They found that the tendency to make internal, stable, and global attributions about the causes of 'threatening' and loss/failure events was significantly

correlated with depression and anxiety symptoms, as measured by the BDI and BAI respectively. They concluded that this attributional style for negative events is a non-specific diathesis for both depression and anxiety. Similar findings are reported elsewhere (e.g. Heimberg et al., 1989; Fresco, Alloy, & Reilly-Harrington, 2006; Ralph & Mineka, 1998).

Since the reformulated model of learned helplessness and the hopelessness theory relate specifically to depression, one would expect the association between the attributional dimensions and a measure of depression to hold, even when controlling for the covariance of a measure of anxiety. Reardon and Williams (2007) attempted to elucidate the aetiological pathways specific to depression and anxiety from a number of theoretical perspectives. They employed structural equation modelling to test the model while controlling for the unique variance shared by the dimensions and the latent constructs of depression and anxiety. Results indicated that depressogenic attributional style on the stable and global dimensions predicted both anxiety disorder and mood disorder symptoms. Attributional style therefore did not demonstrate symptom specificity to depression. Initially it appears that these findings do not support the reformulation and hopelessness theory. However, Reardon and Williams did not measure attributional style for positive events. Studies that have included positive events have found that depressogenic attributional styles are specific to depression (Alloy et al., 2000; Craighead & Kennedy, 1984: cited in Fresco et al., 2006).

8.2.2 The Dimensions of Attributional Style and Uncontrollability

As mentioned previously, attributional style and its dimensional components were proposed in a reformulation to account for the variation in learned helplessness deficits observed in humans that was not adequately explained by the learned helplessness theory (Abramson et al., 1978). Therefore, it was hypothesised that internal, stable, and global attributions for uncontrollable negative events determined the extent to which helplessness deficits were undermining of self-esteem, chronic, and pervasive, respectively. Some researchers questioned whether the reformulation was overlooking some potentially important attributional dimensions, notably uncontrollability (Anderson, Jennings, & Arnoult, 1988; Brewin, 1991; Brown & Siegel, 1988; Deuser & Anderson, 1995; Tennen & Affleck, 1991; Weiner, 1991; Zullow, 1991). Indeed, the hopelessness theory regarded helplessness as a necessary

component of hopelessness, yet it too neglected the concept of uncontrollability, which was crucial to the development of helplessness.

Anderson and Arnoult (1985a) argued that un/controllability is a characteristic of a person's attribution about an event rather than a characteristic of the event itself. Thus, it is the individual's perception of uncontrollability, rather than the objective uncontrollability of the event per se, that is important in determining an expectation of response outcome independence and the associated learned helplessness deficits. Indeed, central to the learned helplessness model and its reformulation was the perception and expectation of uncontrollability, yet outside of laboratory experiments this was not operationalised or measured in up to 88 percent of studies (Deuser & Anderson, 1995). Indeed, Peterson, the primary author of the seminal paper describing the Attributional Style Questionnaire (1982), acknowledged that "learned helplessness research can be criticised for not directly assessing people's perception of uncontrollability", and that "this line of research should be tested more frequently" (1991, p. 2). One hypothesised reason that a measure of uncontrollability has infrequently been included in studies of attributional style is that researchers inferred that negative events with internal, stable, and global causes were seen as uncontrollable (Peterson, 1991). Including the uncontrollability dimension may therefore have been regarded as superfluous. Contrary to these assumptions however, Anderson and Arnoult (1985b) found that the inclusion of an uncontrollability dimension made a significant unique contribution to explaining the variance in a measure of depression, over and above that already explained by the existing attributional dimensions. In fact, the results demonstrated that uncontrollability was the best predictor of the outcome variable. Brown and Siegel (1988) reported that internal, stable, and global attributions predicted greater increases in depressive symptoms in response to a stressful life event when the event was attributed to uncontrollable as opposed to controllable causes. More recently, Sanjuan and Magallares (2009) employed a seven-week longitudinal design to examine the interactive effects of depressogenic attributional style and attributions of uncontrollability for negative events on the prediction of depressive symptoms. Consistent with the reformulation and hopelessness theory, they found that uncontrollability attributions for negative events increased the likelihood of subsequent depressive symptoms in students with a depressogenic attributional style. A shared limitation of these studies, and indeed of the majority of studies investigating the relationship between attributional style and depression (see Sweeney et al., 1986), is

that the samples comprised college students and therefore the findings can only be generalised to such populations. As such, it is problematic to make inferences about the dimension of uncontrollability in relation to clinical and other such samples.

8.2.3 Attributional Style Composite and Individual Dimensions

Studies in which the ASQ has been used to measure attributional style frequently cite correlations involving the ASQ composite score and a measure of depression (Sweeney et al., 1986). The composite score is calculated by summing the mean values for each of the attributional dimensions across the six negative events. This is an additive approach which assumes that the dimensions are equally weighted and that each contributes to explaining variance in the outcome variable, in this case depression. Implicit in the inclusion of each dimension in the reformulation and hopelessness theory is the assumption that each is a necessary component of the model and uniquely contributes to that model. Carver (1989) has argued that there is little theoretical justification for deriving a composite score from summing the three attributional dimensions and that doing so precludes ascertaining the contributions made by individual dimensions. That the composite has little theoretical basis and does not permit the evaluation of each dimension in the model suggests that the additive approach is methodologically flawed (Anderson & Deuser, 1991; Carver & Scheier, 1991; Gotlib, 1991; Hammen, 1991).

A second methodological criticism highlighted that the attributional dimensions are typically intercorrelated and are therefore not empirically orthogonal (Anderson & Deuser, 1991; Carver & Scheier, 1991). In order to test the hypothesis that an individual dimension represents an important component of the model, it is necessary to assess its unique contribution to that model, independent of confounding covariance with other dimensions. In this regard, interpreting zero-order correlations between attributional dimensions and outcome measures of depression is problematic because it cannot account for this covariance and therefore may confound the apparent contribution made by single dimensional variables. Anderson and Deuser (1991) contend on the grounds of confounding covariance that the dimension of globality is included as an attributional dimension because of a theoretical belief that it explains the pervasive deficits associated with depression. They argue that the data does not support theory in this regard because statistically, it has been shown that globality does not make a unique contribution to the model. One possible reason why this and indeed other such findings

about the unique contribution of individual attributional dimensions have not been widely reported is that the majority of studies cite zero-order correlation coefficients and thereby fail to control for potentially confounding covariance in testing the model (Deuser & Anderson, 1995; Sweeney et al., 1986).

Peterson (1991) has argued that, although the automatic creation of a composite cannot be justified, it may be useful to do so where all three dimensions equally pertain to the outcome. In this regard, Abramson, Dykman, and Needles (1991) recommend the use of an interactive combination, rather than an additive composite, highlighting that this interactive composite is necessary to the prediction of lowered self-esteem in the hopelessness theory. However, there is little if any evidence in the literature of studies calculating an interactive composite while accounting for covariance among the attributional dimensions.

8.2.4 Attributional Style for Positive and Negative Events

Much of the theory and research has focused on attributional style for negative events. The reformulation was largely silent on the role of causal attributions for positive events and the hopelessness theory only speculated as to the potential protective nature of making stable and global attributions in response to positive events. Peterson and Seligman (1984) analysed intercorrelations among the three attributional dimensions across positive and negative events on the ASQ and reported that causal attributions for positive events were independent of causal attributions for negative events. The former evinced less robust, weak negative correlations with depressive symptoms. A possible explanation offered for this finding is that negative outcomes naturally invoke a search for causal explanations in an attempt to understand what went wrong, and asking *why* is simply less likely to occur for positive events (Peterson, 1991). Contrary to Peterson and Seligman's (1984) findings, Anderson and Deuser (1991) reported that the relationship between attributional styles for positive and negative were in fact significantly correlated (p < .01) in a larger sample (n > 650). Nonetheless, while attributional style for positive events may be less well associated with depression, it has been argued that the positive expectations and emotions engendered by an enhancing attributional style for positive events may protect against the depressing effects of loss and disappointment (Taylor & Brown, 1988). A number of studies have since reported that an enhancing attributional style for positive events is related to reduced hopelessness and remission in depression symptoms (Johnson,

Crofton, & Feinstein, 1996; Needles & Abramson, 1990). Other studies have demonstrated the interactive effects of depressogenic attributional styles for negative events and enhancing attributional styles for positive events on hopelessness (Voelz, Haeffel, Joiner, & Wagner, 2003), negative affect (Sanjuan, Perez, Rueda, Ruiz, 2008), and depression (Fresco, Alloy, & Reilly-Harrington, 2006). These studies indicate the merits of assessing attributional style for both positive and negative events.

8.2.5 The Aetiology of Attributional Style and Alternative Theoretical Perspectives

Numerous research studies have supported the cognitive diathesis-stress hypothesis proposed by the reformulation and hopelessness depression theories. The cognitive diathesis (i.e. a depressogenic attributional style), by definition, is a pre-existing vulnerability which, in concert with a negative life event, precipitates the onset of depression. Abramson and colleagues (1989) postulated that the cognitive diathesis emerges in childhood as a result of repeated exposure to negative life events. This explanation, however, does not elaborate sufficiently on the aetiology and developmental origins of depressogenic attributional tendencies. Investigating the emergence of attributional style, Cole and colleagues (2008) found that, while children as young as seven years old demonstrated relatively consistent attributions about negative events, the diathesis-stress interaction between attributional style and negative life events did not predict changes in depressive symptoms in children until the age of 14 or 15 years. Thus, it appears that attributional style, as a trait-like tendency, becomes consolidated over time and relevant to depression in early adolescence.

Given the dynamic interplay of a multitude of factors that contribute to psychosocial development from infancy to adolescence, it appears reductionistic and inadequate to attribute the emergence of depressogenic attributional style, and hence a vulnerability to depression, to the accumulation of negative events throughout childhood. Indeed recent research suggests that latent genetic factors (Lau & Eley, 2008), negative emotionality in temperament (Lakdawalla & Hankin, 2008), parenting style and negative inferential feedback from parents (Alloy et al., 2001; Mezulis, Hyde, & Abramson, 2006), peer victimisation (Gibb, Abramson, & Alloy, 2004), and stressful events (Cole et al., 2007; Garber & Flynn, 2001) are all significant developmental precursors to depressogenic attributional style. These findings illustrate the importance of considering alternative models and their relevance to attributional style and

depression. Interpersonal factors appear particularly relevant in this regard, yet are not addressed by the reformulation and the hopelessness depression theories.

Hammen (1992) argued that cognitive vulnerabilities to depression reflect appraisals of events that imply personal incompetence, unworthiness, and dysfunctional underlying beliefs about self-other relationships. He speculated that these cognitions arise in the context of maladaptive attachment relations with the primary caregiver and may be reinforced by interpersonal difficulties in social relationships. A comprehensive exploration of alternative theoretical accounts of depression is beyond the scope of this thesis, however, it may be worth considering, in brief, the potential relevance of attachment, interpersonal, and social rank perspectives to the development of a vulnerable attributional style.

8.2.5.1 Attachment Theory

Attachment theory proposes that a biological drive exists for both caregiver and infant to seek each other in order to preserve the infant's safety. In potentially dangerous or threatening situations, the infant experiences heightened arousal and is dependent on the caregiver to restore emotional equilibrium and 'make safe' (Sroufe, 1991). Thus, the caregiver is the primary regulator of the infant's threat-safety system (Sloman, Gilbert, & Hasey, 2003). Consistent and recurring parent-child interactions allow the infant to organise his experiences into meaningful representations of how the world works. These representations or 'internal working models' (IWMs) help the infant to understand and predict the causal relationship between particular infant behaviours and caregiver responses. He can, therefore, anticipate having his physical and psychological needs met. In this way, the concept of IWMs can be seen to facilitate the development of a cognitive, emotional and behavioural repertoire that serve to regulate the attachment system, and subsequent interpersonal interactions. Furthermore, it can engender the child's understanding of the concepts of self, others, and self-other relationships.

Parents who respond consistently and sensitively to a range of infant emotions, who accept negative emotions and are effective regulators of the infant's emotional states, teach the infant that emotional distress is not overwhelming, but manageable. Over time, this pattern of interaction fosters the infant's increasing ability to self-regulate. If the parent is not sufficiently responsive to, or validating of differing emotional states, the infant will struggle to make causal connections between particular

infant behaviours and the alleviation of stress. In these circumstances, the caregiver is an ineffective regulator of the infant's threat-safety balance. The infant will subsequently come to perceive himself as unable to manage distress and will perceive that others are unavailable or ineffective.

In the context of a critical and rejecting parent whose care and attention is contingent on positive behaviour and success it is conceivable that a child may develop cognitive representations characterised by self-blame and perceived incompetence. In addition, failure to make a consistent causal connection between particular behaviours and a positive outcome may increase the likelihood that the child will perceive uncontrollability, experience feelings of helplessness, and come to attribute negative events to internal, stable, and global factors.

8.2.5.2 Interpersonal Models

Helplessness, a concept closely linked to depression in the reformulation, has been described in terms of giving up quickly in response to failure, attributing failures to insufficient ability, holding low expectations for future success, and experiencing negative affect when confronted with a challenging situation (Kistner, Ziegert, & Castro, 2001). Alternative accounts of the development of helplessness have been proposed by Burhans and Dweck's (1995) theory of contingent self-worth, and Dykman's (1998) concept of validation-seeking goals (i.e. striving to prove one's worth, competence, or likeability by seeking approval). The tendency to strive for validation-seeking goals, according to Dykman, emerges in childhood as a result of excessive parental criticism or conditional parental approval, and reflects a sense of self-worth that is largely contingent on external validation. This tendency fosters excessive reassurance-seeking behaviours which undermine social acceptance and reinforce perceptions of interpersonal incompetence and inadequate social support. This is the foundation of Coyne's (1976) interpersonal theory of depression.

Research investigating the emergence of attributional style provides support for this alternative theoretical model in this context. For example, Kistner, Ziegert, and Castro (2001) reported that the tendency to become highly self-critical in response to negative feedback is associated with the emergence of helplessness cognitions and behaviours in childhood and this has implications for the onset of depression later in life. Burhans and Dweck (1995) found that the tendency to infer self-worth from

successes and failures, emanating from critical and punitive parenting, underlies helplessness cognitions and behaviours in children.

8.2.5.3 Social Rank Theory

Social rank theory proposes, in evolutionary terms, that reacting to competitive loss through withdrawal, submissiveness, and escape serves the adaptive function of terminating conflict and maintaining the stability of the social hierarchy (Price, 1967). Sloman (2000: cited in Sloman et al., 2003) argued that this defeat response is triggered by an Involuntary Defeat Strategy (IDS), which is characterised by feelings of helplessness, hopelessness, inferiority and inadequacy, and by psychomotor retardation. A circumscribed IDS response is considered adaptive when failure in a social context or defeat in a hierarchical struggle is inevitable because acts of submission and forfeit reduce the likelihood of persevering in vain, injury, and death. In accepting lower social rank, the defeated can redirect its energies to more attainable goals and productive pursuits. Dysregulation of the IDS, whereby threat arousal remains high and the defeat or loss response is intense and persistent, can have maladaptive consequences by precipitating the onset of depression and anxiety (Sloman, 2008).

In humans depressive episodes are often triggered by defeats and significant social and interpersonal losses. It has been argued that individuals experiencing depression often behave submissively, perceive themselves to be inferior, tend not to be explorative, and often feel defeated and trapped (Sloman et al., 2003). According to Gilbert and Miles (2000), seeing oneself as relatively inferior and down rank is associated with increased self-blame and a proneness to feeling distressed by criticism and social put-down. They speculate that attributional style in aversive social situations may relate to an individual's perceived social position or rank. For example, the tendency to make internal attributions for social defeats or losses is comparable to self-blame, which in turn is associated with perceived social rank and depression. Furthermore, the consequences of intensive and persistent IDS appear consistent with the behavioural and psychological sequelae associated with learned helplessness.

A brief exploration of attachment, interpersonal, and social rank perspectives highlights the importance of considering alternative theoretical models of cognitive vulnerability and depression. These circumscribed examples emphasise the shortcomings evident in the reformulation and hopelessness theories' account of the aetiology of the cognitive diathesis. They also highlight the potential value of

integrating different theoretical perspectives to a more comprehensive understanding of depression.

8.3 Learned Helplessness, Hopelessness, and Imprisonment

Imprisonment involves the fundamental loss of many aspects of personal control (Cashin, Potter, & Butler, 2008; Goodstein, MacKenzie, & Shotland, 1984; Taylor, 1961). Individuals who are incarcerated often have little control over the most basic decisions and choices of living, such as when to sleep, when to rise, when and what they eat, who they live with, who they can associate with, where they can go, what activities they can do, what facilities and resources they have access to, and when they can receive visits from family and friends. MacKenzie, Goodstein, and Blouin (1987) suggested that the perception of control is an important factor in influencing a person's adjustment to prison. They reported that prisoners with high control expectations and perceptions adjust most successfully to imprisonment and those with less control encounter a range of problems coping with prison life. These findings appear consistent with the learned helplessness hypothesis.

As noted earlier, the learned helplessness hypothesis emerged from laboratory observations that prolonged exposure to uncontrollable aversive events results in motivational, affective, and cognitive deficits associated with helplessness. Schill and Marcus (1998) have argued that imprisonment similarly involves prolonged exposure to uncontrollable aversive circumstances, yet there is a paucity of studies investigating the association between attributional style and depression in prison samples. One such study was conducted by Peterson, Nutter, and Seligman (1982; cited in Peterson & Seligman, 1984). They investigated the impact of imprisonment on the association between attributional style and depressive symptoms in a prospective design to test the diathesis-stress component of the reformulated learned helplessness model. Two hundred and forty five adult males completed the ASQ within one week of being incarcerated and subsequently completed the BDI within one week of release. The period between completing the measures varied from one week to one year depending on each individual's term of imprisonment. Attributional style for negative events at the beginning of imprisonment predicted depressive symptoms upon release. Surprisingly, attributional style for positive versus negative events were substantially intercorrelated and showed similarly significant positive associations with depressive symptoms.

Peterson et al.'s findings apparently support the diathesis-stress component of the reformulation. However, a number of the criticisms raised previously seem relevant to their study. Firstly, there is no indication that they employed the relevant statistical controls to account for the unique variance of each of the attributional dimensions. Second, they did not include a measure of uncontrollability, which has been argued crucial from a theoretical perspective (Brown & Siegel, 1988; Deuser & Anderson, 1995; Tennen & Affleck, 1991; Weiner, 1991).

8.4 Chapter Summary

The reformulation and hopelessness depression theory have been critically evaluated by many researchers. A number of issues have been highlighted in this regard. It has been argued that the concept of uncontrollability, which was crucial to the development of helplessness, has been neglected in measures of attributional style. Studies have reported that the inclusion of an uncontrollability dimension is important to predicting depression. In analysing the association between attributional style and depression, researchers frequently calculate an attributional composite score. Opponents to this practice have argued that there is little theoretical justification for deriving a composite score and that relying on this score precludes ascertaining the contributions made by individual dimensions. Much of the theory and research has focused on attributional style for negative events. However, evidence linking an enhancing attributional style for positive events to reduced hopelessness and depression symptoms emphasises the importance of assessing attributional style for positive events. In addition, research investigating the association between attribution style and anxiety has found that including positive events adds specifically to predictive models of depression. The reformulation and hopelessness theory have been incomprehensive in their accounts of the emergence of the cognitive diathesis. Alternative theoretical perspectives, particularly interpersonal accounts, may be relevant to our understanding of the aetiology of cognitive vulnerabilities, such as depressogenic attributional style, to depression.

Imprisonment involves the loss of many aspects of personal control and the perception of control is an important factor in influencing a person's adjustment to prison. The reformulation and hopelessness depression theories seem relevant to imprisonment because it similarly involves prolonged exposure to uncontrollable

aversive circumstances. Research indicates that attributional style is relevant to understanding depression in prisoners.

CHAPTER NINE

The Present Study

9.1 Chapter Overview

In designing the present study, this chapter builds upon the issues raised in Chapter 8. The previous criticisms are used to guide the present study. The study aims to address the issues of uncontrollability, the use of an attributional composite score and the contribution of individual dimensions, attributional style and positive events, and attributional style and anxiety. Hypotheses are specified on the basis of this review.

9.2 Addressing the Gap in the Literature

The present study sought to investigate the relationship between attributional style and depressive symptoms in an Irish male prison sample. Guided by theory and previous research, the study also sought to examine the variables that affect this relationship with the intention of building a predictive model of learned helplessness and hopelessness depression. The previous chapter described some important methodological limitations prevalent in the research. The present study attempted to address these limitations by incorporating necessary adaptations, and by employing the appropriate research design, measures, and statistical controls. These issues are subsequently reiterated in the context of how the present study attempted to address the gap in the literature.

9.2.1 Attributional Style and Anxiety

The reformulation and hopelessness depression theory are diathesis-stress models specific to the development of depression, rather than psychopathology more generally. Given that the symptoms of depression and anxiety frequently co-occur, one would expect the association between attributional style and depression to prevail when controlling for covariance explained by anxiety in the outcome measure. Few studies have investigated the specificity of attributional style to depression, and among those that have, mixed findings are evident. Studies that have supported the reformulation in this regard emphasise the importance of measuring causal attributions for positive events (Alloy et al., 2000). Therefore, the present study sought to investigate the

specificity of attributional style for positive and negative events to depression while controlling for anxiety.

9.2.2 Attributions of Uncontrollability

The reformulated learned helplessness model of depression (Abramson et al., 1978) proposes that individuals with a tendency to attribute the causes of negative events to internal, stable, and global factors are more likely to experience general and chronic helpless depression with low self-esteem. The Attributional Style Questionnaire (Peterson et al., 1982) was subsequently developed to provide a standardised measurement of attributional style. Since then it has been extensively used in social psychological, educational, and clinical research domains. Some researchers have argued that 'uncontrollability', a concept central to the original learned helplessness hypothesis, became inexplicably overlook by the reformulation and the ASQ (Anderson et al., 1988). As a result, it has featured minimally in the measurement of attributional style despite research demonstrating its efficacy in contributing to attributional models of depression (Anderson & Arnoult, 1985b). In the present study attributional style was measured using the ASQ, with the original dimensions of internality, stability, and globality. An additional dimension of 'uncontrollability', as per Sanjuan and Magallares (2009), was included to address the limitation in the research having overlooked this potentially important variable.

9.2.3 Assessing the Unique Contribution of Individual Dimensions

Studies employing the ASQ often report composite scores (Sweeney et al., 1986), representing an additive combination of the attributional dimensions. It has been contended that there is little theoretical justification for calculating a composite (Carver, 1989). In addition, the composite often fails to accurately represent the dimensional profile. Many studies also cite individual dimensional correlations with measures of depression. However, few studies have reported controlling for covariance between dimensions, and as such fail to assess the unique contribution of each dimension to the outcome variable (Deuser & Anderson, 1995). The present study attempted to address this issue by analysing the variance and association between the attributional dimensions and employing the appropriate statistical controls in a multiple regression model. This method permitted analysis of the unique contribution of each dimension in

explaining the variance in the outcome measure, while partialing the contribution of the other dimensions.

9.2.4 Causal Attributions for Positive Events

The reformulated model and hopelessness depression theory are predominantly concerned with the interaction of cognitive vulnerabilities (diathesis) and negative events (stress) in predicting depression. For this reason, relatively little research has investigated attributional styles for positive events and those that have, have reported mixed findings. Recent research endeavours have reported interactive and combined effects of attributional styles for positive and negative events in predicting symptoms of hopelessness (Voelz et al., 2003) and depression (Fresco et al., 2006). These studies have important theoretical and therapeutic implications for understanding recovery pathways from depression. The present study therefore sought to examine attributional styles for positive and negative events in predicting depression.

9.2.5 Attributional Style and Imprisonment

Mental health problems such as depression and anxiety are more prevalent in prison populations than in community populations. While the experience of imprisonment was originally thought to be universally detrimental to the psychological and emotional health of inmates, empirical literature reviews suggest that individual differences influence prisoner adjustment and well-being (Bonta & Gendreau, 1990). The limited available evidence suggests that attributional style may be an important individual difference in predicting depression in prisoners. This is hardly surprising given that the prison environment arguably represents a 'naturalistic' setting in which many individuals live in uncontrollable aversive circumstances. The aim of the present study was to provide a better understanding of the individual differences in cognitive vulnerabilities, namely attributional style, that contribute to psychological difficulties, specifically depressive symptoms, in prisoners.

9.3 Hypotheses

A cross-sectional design was employed in which the four attributional dimensions of internality, stability, globality, and uncontrollability were the predictors, and 'depressive symptoms' was the criterion variable. A number of hypotheses were made to guide the investigation:

9.3.1 Hypothesis 1

Consistent with the reformulation it was hypothesised that a model comprising the three original attributional dimensions for negative events would account for significant variance in depressive symptom scores. At the dimensional level, it was predicted that:

1.1 Internal attributions for negative events on the ASQ would make a unique contribution to explaining the variance in depressive symptoms.

1.2 Stable attributions for negative events on the ASQ would make a unique contribution to explaining the variance in depressive symptoms.

1.3 Global attributions for negative events on the ASQ would make a unique contribution to explaining the variance in depressive symptoms.

9.3.2 Hypothesis 2

In testing the specificity of the model to make a distinct contribution to depression, it was predicted that the attributional dimensions for negative events would account for a significant amount of variance in depressive symptoms after controlling for the variance explained by anxiety.

9.3.3 Hypothesis 3

It was hypothesised that uncontrollability attributions would moderate the impact of: 3.1 internal, 3.2 stable, and 3.3 global attributions for negative events on depression.

9.3.4 Hypothesis 4

The hopelessness depression theory considers hopelessness to be a proximal sufficient cause of hopelessness depression. Depressogenic attributional style, as a distal contributing factor, is thought to predispose hopelessness in the context of a negative life event. Hypothesis four predicted that the attributional dimensions for negative events would predict significant variance in hopelessness depressive symptoms via the mediation pathway of hopelessness. It was also predicted that uncontrollability would contribute significantly to this model.

9.4 Building a Parsimonious Attributional Model of Depression

A final goal of the present study was to build a parsimonious attributional model of depression by balancing the fewest necessary predictors against predicting the largest proportion of variance in the criterion measure of depression. It was anticipated that the model would comprise attributional dimensions for positive and negative events, and would contribute significantly to depression after controlling the contribution of anxiety.

9.5 Chapter Summary

The present study sought to address the gap in the literature and take a novel approach by investigating the relationship between attributional style and depressive symptoms in an Irish male prison sample. A number of proposals were made to address these issues in relation to the present study. In examining the specificity of attributional style to depression, the present study sought to control anxiety and to measure attributional style for positive and negative events. A dimension of 'uncontrollability' was added the ASQ to address concerns that most research has overlooked this variable. The study proposed to avoid difficulties associated with calculating composite scores by analysing the variance and association between the attributional dimensions and employing the appropriate statistical controls in a multiple regression model. Theory and research suggests that attributional style may be important in predicting depression in prisoners. The aim of the present study was to provide a better understanding of the individual differences in attributional style that contribute to depressive symptoms in prisoners. A number of hypotheses were proposed to guide the investigation.

CHAPTER TEN

Method

10.1 Chapter Overview

This chapter outlines the research design and methodology. It begins by presenting demographic information on participants and appraising the sample's representativeness. The research design is subsequently outlined with a description of the instruments used and their psychometric properties. The procedure for the data gathering process is then outlined. Information relating to ethical approval, confidentiality and informed consent, participation, participant debriefing and the referral process is also presented. The chapter concludes by describing statistical calculations for sample size estimates and the preparation for statistical analyses.

10.2 Participants

One hundred and one participants took part in this study. Participants were recruited from the population of adult males detained in Cork Prison, Limerick Prison, Arbourhill Prison, and the Midlands Prison at the time of sampling. A list of eligible participants was generated for each of the above Prisons through the Irish Prison Service database. Each List included all individuals currently in custody. Stratified random sampling (as per Duffy, Linehan, & Kennedy, 2006) was used to select potential participants from Cork, Arbourhill, and the Midlands Prisons. A convenience sample was subsequently drawn from Limerick Prison due to security concerns and limited resources. The final sample comprised 38 participants from Cork Prison, 26 from Limerick Prison, 21 from Arbourhill Prison, and 16 from the Midlands Prison. Fifty five individuals declined to take part.

10.2.1 Sample Demographics

The sample ranged in age from 19 to 78 years, with a mean age of 32.9 years (SD = 12.4, mode = 27). Table 10.1 illustrates the age profile of the sample in comparison to the total prison population.

Table 10.1 Age Profile of the Sample

Age category	n	%	% total prison population*
18 to < 21 years	5	5.0	9.9
21 to < 25 years	22	21.8	19.3
25 to < 30 years	28	27.7	22.0
30 to < 40 years	23	22.8	27.2
40 to < 50 years	10	9.9	12.7
50 + years	12	11.9	7.5
Total	101	100	100

*Male prisoners in custody under sentence on 5th December 2008, IPS Annual Report (2008).

Ninety one participants described their nationality as Irish, five were from the United Kingdom, and the remaining five were from the European Union, Africa, and Asia. Statistics on the total prison population presented in the IPS Annual Report (2008) indicates that 90 percent of males in custody under sentence were Irish, 2.3 percent were from the United Kingdom, and 6.7 percent were from the European Union, Africa, and Asia. Within Ireland, the most frequent counties of origin were Cork (n = 25) and Limerick (n = 20), with Dublin (n = 11), Waterford (n = 9), and Kerry (n = 8) being the next most frequently identified counties. Information on each participant's county of origin is presented in Table 10.2.

Table 10.2 Participants' County of Origin

County	n	%
Clare	4	4.0
Cork	25	24.8
Donegal	2	2.0
Dublin	11	10.9
Galway	3	3.0
Kerry	8	7.9
Kildare	2	2.0
Kilkenny	1	1.0
Laois	2	2.0
Limerick	20	19.8
Louth	2	2.0
Meath	1	1.0
Tipperary	3	3.0
Waterford	9	8.9
Westmeath	1	1.0
Missing	7	6.9
Total	101	100

10.2.2 Imprisonment Status

Eighty six participants were serving a sentence at the time of sampling, eight were on remand or awaiting trial, and four were concurrently serving a sentence and on remand. Three individuals did not provide information pertaining to their custodial status. Nineteen participants indicated that they had more charges pending. The group was almost evenly divided with 48 stating that their current committal was their first time in prison and 50 stating that it was not. The average number of months since admission to prison at the time of sampling was 30.1 (SD = 37.26), however analysis of frequency values revealed that the number of months spent in prison was spread across a broad range (min. = 0.3, max. = 169). The median (12.9 months) and mode (3.0 months) values suggest that most participants came to prison within the previous thirteen months. Similarly, the average number of months to remission (i.e. the amount of time a participant has yet to spend in prison before his release date) was 26.6 (SD =

38.4), with a range of 0.7 to 228 months. Again, this statistic had a wide range however the median (14.6) and mode (8.0) values indicated that most participants were due for official release within 15 months. It may be important to note that many participants convicted of murder were serving indeterminate life sentences and were therefore not represented in this statistic. A crude estimate of each participant's sentence term was calculated by summing their self-reported time spent in prison and time until due release. The sentence term profile of the sample is presented in Table 10.3 in relation to the total prison population.

Table 10.3 Sentence Term of Participants

Term	n	valid %	% total prison population*
0 to < 3 months	0	0	1.7
3 to < 6 months	1	1.4	4.2
6 to < 12 months	4	5.6	9.5
1 to < 2 years	16	22.5	12.7
2 to < 3 years	16	22.5	11.2
3 to < 5years	20	28.2	20.1
5 to < 10 years	11	15.5	23.3
10 + years	3	4.2	8.3
Missing	30		
Total	101	100	100

*Male prisoners in custody under sentence on 5th December 2008, IPS Annual Report (2008).

10.2.3 Offence Profile

Nine categories of offence were delineated to coincide with the offence profile statistics presented in the Irish Prison Service Annual Report (2008). The most frequent offence type for which participants were committed to prison were Drug Offences (n = 23). Murder (n = 17), Sexual Offences (n = 15), and Other Offences Against the Person (n = 12) were the next most frequent offence types respectively. A breakdown of the sample's offence profile is presented in Table 10.4.

Table 10.4 Offence Profile of the Sample

Offence category	N	%	% in total prison population*
Murder	17	16.8	8.5
Manslaughter	3	3.0	2.3
Sexual Offences	15	14.9	9.5
Other Offences Against the Person	12	11.9	14.8
Offences Against Property with Violence	5	5.0	3.3
Offences Against Property without Violence	9	8.9	25.3
Drug Offences	23	22.8	19.1
Road Traffic Offences	2	2.0	6.4
Other Offences	4	4.0	10.7
Missing	11	10.9	0
Total	101	100	100

*Male prisoners in custody under sentence on 5th December 2008, IPS Annual Report (2008).

10.2.4 Educational and Occupational History

Participants were asked about their highest level of education. Five participants indicated that they had not completed primary school, 21 said they completed primary school, 35 had completed the inter/junior certificate, and 25 had completed the leaving certificate. Twelve participants indicated that they had a third level qualification. The average number of years participants spent in formal education was 11.1 (SD = 3.35).

Participants were also asked about their occupational status prior to coming to prison. Thirty one specified that they were unemployed prior to coming to prison, 47 indicated that they were engaged in some form of employment, either full or part-time. Six were in training or education and one participant said he was retired. Sixteen individuals did not provide information on their occupational histories.

10.2.5 Mental Health History

Sixty participants indicated that they had accessed mental health services in the past, either in prison or in the community. Thirty six said that they had not accessed mental health services and five individuals declined to answer. Depression (or related affective problems) was the most frequent reason for attending mental health services suggested by participants (n = 26). 'Offence focused work' (n = 6), 'anger, behaviour,

or conduct difficulties' (n = 5), 'court order or sanction' (n = 5), and anxiety (n = 4) were the next most frequent reasons participants provided for engaging with mental health services. A number of participants listed multiple difficulties.

10.2.6 Exclusion criteria

Given the vulnerability and potential risk present in a prison population, a number of exclusion criteria were established to protect both researcher and participant alike, and to maximise the validity of the present study. Relevant disciplines, such as Research, Clinical Psychology, Forensic Psychiatry, and Prison Personnel were consulted in this process. The criteria excluded Prisoners who were identified by the Prison authorities/services as insufficiently capable or insufficiently well, either physically or mentally, at the time of data collection. In addition, Prisoners who were segregated from the normal prison population because they were regarded as presenting a risk to their own safety or the safety of others at the time of data collection were not included. Given the high prevalence rates of substance misuse within prison (Curtin et al., 2009), individuals believed to be under the influence of substances that could impair their ability to provide informed consent or affect their ability to understand or complete the measures were not included. Similarly, Prisoners within their first week of incarceration were not invited to participate because of the increased likelihood that they may be under the influence of alcohol or substances or affected by withdrawal symptoms on committal to prison (Duffy, Linehan, & Kennedy, 2006; Fazel, Bains, & Doll, 2006; Mason, Birmingham, & Grubin, 1997).

10.2.7 Sample Representativeness

Overall it is estimated that the sample in the present study provides a reasonable representation of the total prison population based on the prisoner profile statistics on 5th December 2008 in the IPS Annual Report (2008). A number of factors may be worth considering in light of the observed discrepancies. Firstly, the participants in the present study were recruited from medium secure prisons, rather than the full range of prisons operated by IPS. This may have impacted on the offence profile and sentence term representativeness of the sample. Second, the research relied on participant self-report in gathering demographic information. Self-report by nature can introduce subjective bias (e.g. forgetting dates of admission and remission) and some participants elected not to provide certain information. Finally, the exclusion criteria and literacy skills required

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to take part may have precluded a particular subsample of prisoners from taking part. While these potential caveats should be considered in generalising the findings of this thesis, the differences between the sample and general prison population do not appear substantial.

10.3 Design

A Cross sectional quasi-experimental design was employed, assessing the goodness of fit of a set of predictor variables on a criterion. The predictor variables were the attributional dimensions of internality, stability, globality, and uncontrollability and the criterion was depressive symptoms as measured by the BDI-II.

10.3.1 Instruments

Four standardised psychometric instruments and a demographic questionnaire were used in this study. The instruments were the Attributional Style Questionnaire (ASQ: Peterson et al., 1982), the Beck Depression Inventory – Second Edition (BDI-II: Beck, Steer, & Brown, 1996), the Beck Hopelessness Scale (BHS: Beck, Weissman, Lester, & Trexler, 1974; Beck & Steer, 1988), and the Beck Anxiety Inventory (BAI: Beck & Steer, 1990). The demographic questionnaire was designed to elicit important collateral information from participants. Each of these measures is presented in Appendix 2.

10.3.1.1 Attributional Style Questionnaire (ASQ)

The ASQ (Peterson et al., 1982) was originally developed from the reformulated learned helplessness model. This model proposed that depression results from attributing uncontrollable negative events to internal, stable, and global factors. The term 'attributional style' is used to refer to an individual's habitual and characteristic attributional tendency.

The ASQ is a self-report instrument that assesses causal attributions for twelve hypothetical events, six positive and six negative. Additionally, half of the events portray interpersonal/affiliation situations and half portray achievement-related situations. Respondents are required to generate and "write down the one major cause" for each of the twelve events and provide a rating for each cause along three dimensions, corresponding to the attributional triad. Thus, respondents indicate the extent to which they attribute the cause to internal versus external, stable versus

transient, and global versus specific factors along a seven-point Likert scale. The inclusion of open-ended and restricted-response questions intended to avoid constraining respondents to a limited number of hypothesised causal attributions on one hand, and to increase reliability by providing objective and quantifiable ratings on the other (Peterson et al., 1982). On the dimensional measures, higher scores (e.g. 5-7) represent more internal, stable, and global attributions, whereas lower scores (e.g. 1-3) represent more external, transient, and specific attributions.

The ASQ provides a total composite score, separate composite scores for positive and negative events, and scores for each of the three dimensions. Composite and dimensional scores typically represent the mean value because the appropriate individual scale scores are summed and divided by the number of comprising scores. For example, the total composite score for positive events is calculated by summing the values for each of three dimensions across all six positive events and dividing by 18. The authors caution against employing this method when large discrepancies are evident between individual items and the mean or standard deviation values. In such cases, it is recommended that a statistical norming procedure be applied.

The original version of the ASQ described in Peterson et al. (1982) required respondents to rate the importance of each event on a similar seven-point Likert scale. However, it was reported that this variable did not significantly mediate the relationship between attributional style and depression (Gong-Guy & Hammen, 1980; cited in Peterson et al., 1982). A measure of importance, therefore, was not included in the present study. Conversely, the original ASQ did not include a measure of uncontrollability. Many researchers have argued that this variable is of central importance to the reformulated learned helplessness model of depression. It has also been shown to contribute significantly to explaining the variance in measures of depression (Anderson & Arnoult, 1985b; Brown & Siegel, 1988). The present study therefore included a fourth 'uncontrollability' dimension as per Sanjuan and Magallares (2009).

The psychometric properties of the ASQ have been investigated in studies involving both clinical and non-clinical samples. Original normative data for the ASQ is reported on the basis of research involving 130 undergraduate university students (Peterson et al., 1982). Internal consistency was estimated using Cronbach's (1951) coefficient alpha. Reliabilities of 0.75 and 0.72 were reported for attributional style composite scores for positive and negative events, respectively. Coefficients ranging

from 0.44 to 0.69 (M = 0.54) were reported for each of the internal, stable, and global dimensions for positive and negative events. In a meta-analysis of attributional style in depression, reliability estimates of the ASQ were reported from eight studies, involving both psychiatric and university samples (Sweeney, Anderson, & Bailey, 1986). For negative events, average reliabilities were 0.52, 0.58, 0.52, and 0.73 for the internal, stable, and global dimensions, and composite scores, respectively. These values appear to be consistent with those originally reported by Peterson and colleagues.

Peterson et al. (1982) calculated test-retest reliability estimates from data produced by one hundred of their university sample who completed the ASQ on two occasions with a five-week interval. Reliabilities ranged from 0.57 to 0.70 (M = .63) for dimensional and composite scores for positive and negative events. The authors describe these coefficients as "respectably high" (p.296), supporting the hypothesis of a "style" that is stable over time. Other studies have reported somewhat weaker, albeit statistically significant, test-retest reliabilities (e.g. Golin, Sweeney, & Shaeffer, 1981).

Corr and Gray (1996) investigated the structure and validity of the ASQ with a non-clinical sample. Principal components analyses evidenced a distinction between attributional style for positive and negative events, suggesting that they are separate constructs. For negative events, the data supported a previously hypothesised (Weiner, 1974) distinction between the internality and stability/globality dimensions. This distinction was not so strongly evident for positive events. A subsequent study involving a large sample of university students (n = 2,748) employed confirmatory factor analysis to investigate the statistical evidence for the theoretical dimensions in the ASQ (Hewitt, Foxcroft, & MacDonald, 2004). Results showed a good fit between the model and the data, thus supporting the three dimensional constructs measured by the ASQ for negative events. These findings appear to be consistent with the reformulated learned helplessness model and the hopelessness depression theory, and support the construct validity of the ASQ. It may be noteworthy that certain studies, involving fewer participants, have failed to replicate these findings (e.g. Asner-Self & Schreiber, 2004).

A number of studies report findings that exemplify the concurrent and predictive validity of the ASQ. Castellon, Ollove, and Seligman (1982; cited in Peterson & Seligman, 1984) analysed the verbal accounts of mental illness offered by patients with affective disorders. They found that attributional style, as measured by the ASQ, corresponded to the content analysis of explanations offered by patients with unipolar

depression and also corresponded to the severity of depressive symptoms. Depressogenic attributional style has been associated with a variety of measures of psychopathology, including depression (Alloy, Just, & Panzarella, 1997; Farrokhi, Guilani, Zamani, Akbar Haddadi, 2006; Nezu, Nezu, & Nezu, 1986; Seligman, Abramson, Semmel, & von Baeyer, 1979) and anxiety (Fresco, Alloy, & Reilly-Harrington, 2006). The tendency to attribute negative events to internal, stable, and global causes has been associated with increasing levels of clinically-assessed depression symptoms over time (Fresco et al., 2006). In addition, dimensional attributions for negative events have been predictive of depressive symptoms endorsed four and seven weeks later (Golin et al., 1981; Sanjuan & Magalleres, 2009). The research indicates that attributional style as measured by the ASQ can make a valuable contribution to our understanding of cognitive vulnerability to depression.

10.3.1.2 Beck Depression Inventory, Second Edition (BDI-II)

The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report instrument for measuring the presence and degree of depressive symptoms. It is intended for use with adults and adolescents aged thirteen years and older. The items are consistent with criteria for diagnosing depressive disorders in the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV; APA, 1994). According to its authors, the BDI-II constitutes a substantial revision of the original BDI (which was developed on the basis of verbal descriptions of patients rather than on any particular theory or diagnostic system). Items assess Sadness, Pessimism, Past Failure, Loss of Pleasure, Guilty Feelings, Punishment Feelings, Self-Dislike, Self-Criticalness, Suicidal Thoughts or Wishes, Crying, Agitation, Loss of Interest, Indecisiveness, Worthlessness, Loss of Energy, Changes in Sleeping Pattern, Irritability, Changes in Appetite, Concentration Difficulty, Tiredness or Fatigue, and Loss of Interest in Sex.

Each item on the BDI-II is rated on a four-point scale ranging from 0 to 3. The total raw score is calculated by summing the ratings for each of the 21 items. Higher scores reflect increasing severity of depressive symptoms. Receiver operating characteristic (ROC) curves (Gleitman, 1986; cited in Beck et al., 1996) were used to establish optimal cut scores for the BDI-II based on data collected from a sample of 127 psychiatric outpatients. Beck et al. (1996) suggest the following cut score guidelines for total scores of patients diagnosed with major depression: 0-13 (minimal), 14-19 (mild), 20-28 (moderate), and 29-63 (severe).

Numerous studies have examined the psychometric properties of the BDI-II in clinical and non-clinical samples. Internal consistency, as measured by the coefficient alpha, has been reported to range from 0.89 (Steer et al., 2000) to 0.92 (Beck et al., 1996) in adult psychiatric samples, and from 0.89 (Steer and Clark, 1997) to 0.93 (Beck et al., 1996; Sprinkle et al., 2002) in student samples. Palmer and Binks (2008) reported an alpha coefficient of 0.90 in a sample of incarcerated young adult male offenders. Test-retest reliability correlations of 0.93 and higher have been reported (Beck et al., 1996; Sprinkle et al., 2002).

Studies investigating the criterion validity of the BDI-II have reported its effectiveness in discriminating individuals with serious and active depressive mood disorders, as diagnosed by structured clinical interviews, from individuals with less serious and no depressive mood disorder, respectively, in a psychiatric outpatient (Beck et al., 1996) and a student sample (Sprinkle et al., 2002). In addition, evidence of convergent and discriminative validity are presented in studies which show that the BDI-II correlates better with other measures of depression than with assessments of other disorders, such as anxiety (Beck et al., 1996).

10.3.1.3 Beck Hopelessness Scale (BHS)

The BHS (Beck, Weissman, Lester, & Trexler, 1974; Beck & Steer, 1988) is a 20-item scale for measuring the extent of negative attitudes about the future. It was originally developed to measure pessimism in psychiatric patients presenting with risk of suicide, however, it has since been used with a variety of clinical and non-clinical, adult and adolescent samples (e.g. Abbey, Rosenfeld, Pessin, & Breitbart, 2006; Durham, 1982; Dyce, 1996; Haatainen et al., 2004; Johnson & McCutcheon, 1981; Steed, 2001). Hopelessness is a psychological construct that has been observed to underlie a variety of mental health problems.

In developing the BHS, items were drawn from a test for measuring perspectives on the future (Heimberger, 1961; cited in Beck et al., 1988) and from a group of pessimistic statements about the future noted from psychiatric patients who had described hopeless cognitions (Beck et al., 1974). The items were then reviewed and refined in collaboration with patients and clinicians. According to Beck and Steer (1988), the BHS coincides with Stotland's (1969) conception of hopelessness as a system of cognitive schemas which engender negative expectancies about the future.

Similarly, it converges with one of the three components of Beck's (1967) cognitive model of depression (i.e. a negative view of the future).

The BHS comprises 20 true-false statements. There are eleven items to which responding "True" and nine items to which responding "False" endorse pessimism about the future. Items are scored dichotomously, either 1 or 0, and summed to yield a total score. Higher scores indicate greater hopelessness. The following guidelines are recommended for interpreting score ranges: 0-3 is minimal, 4-8 is mild, 9-14 is moderate, and greater than 14 is indicative of severe hopelessness.

The psychometric properties of the BHS have been investigated in research involving diverse samples. Beck and Steer (1988) report internal consistency values, as measured by Kuder-Richardson (KR-20) reliabilities, that ranged from 0.82 to 0.93 (M = 0.90) amongst samples labelled 'suicide ideators' (n = 207), 'suicide attempters' (n = 499), 'alcoholics' (n = 105), 'heroin addicts' (n = 211), 'single-episode Major Depression Disorders' (n = 72), 'recurrent-episode Major Depression Disorders' (n = 134), and 'Dysthymic Disorders' (n = 177). Durham (1982) reported KR-20 reliability estimates of 0.86 and 0.83 in general psychiatric inpatient and forensic psychiatric inpatient samples, respectively. Other studies involving clinical samples have reported coefficient alpha values of 0.92 in an outpatient sample (Dyce, 1996) and 0.87 in a sample of terminally ill inpatients (Abbey et al., 2006). Research involving non-clinical samples has reported mixed results regarding reliability. Alpha coefficients of 0.88 and 0.87 were found in a student sample (Steed, 2001) and in a random population sample (Haatainen et al., 2004), respectively. Durham (1982) found reliability estimates of 0.65 amongst college students. These findings have led some researchers to question the general utility of using the BHS with non-clinical populations (Young, Halper, Clark, Scheftner, & Fawcett, 1992; Durham, 1982). A Test-retest reliability coefficient of 0.69 is presented in the BHS manual, based on a sample of 21 outpatients completing the BHS twice with a one week interval.

Evidence supporting the concurrent validity of the BHS is presented by Beck et al. (1974). They found significant correlations between hopelessness scores and clinical ratings of hopelessness for both outpatient (r = 0.74, p < .001) and inpatient samples (r = 0.62, p < .005). Regarding construct validity, BHS scores have been shown to predict future scores on measures of depression (Alford et al., 1995). In addition, it has been reported that the association between hopelessness, as measured by the BHS, and suicidal intent is significantly greater than the association between depression and

suicidal intent (Dyer & Kreitman, 1984; Wetzel, Margulies, Davies, & Karam, 1980). Significantly elevated hopelessness has also been associated with eventual suicide in a sample of former psychiatric inpatients who expressed suicidal ideation (Beck, Steer, Kovacs, & Garrison, 1985). While Beck and Steer (1988) emphasise the clinical utility of the BHS as an indirect indicator of suicidal risk, they also stress the importance of considering other psychological factors when using this instrument and interpreting cut off scores.

10.3.1.4 Beck Anxiety Inventory (BAI)

The BAI (Beck & Steer, 1990) is a 21-item instrument for measuring the severity of self-reported anxiety symptoms in adults and adolescents. Individual items of the BAI were originally derived, and subsequently refined, from three instruments measuring various features of anxiety: the Anxiety Check List (ACL; Beck, Steer, & Brown, 1985; cited in Beck & Steer, 1990), the PDR Check List (PDR; Beck, 1978), and the Situational Anxiety Check List (SAC; Beck, 1982). Of the 86 symptoms initially identified, 21 were retained and included in the BAI as descriptive statements of anxiety symptoms.

The items measure: Numbness or tingling, Feeling hot, Wobbliness in legs, Unable to relax, Fear of the worst happening, Dizzy or lightheaded, Heart pounding or racing, Unsteady, Terrified, Nervous, Feelings of choking, Hands trembling, Shaky, Fear of losing control, Difficulty breathing, Fear of dying, Scared, Indigestion or discomfort in abdomen, Faint, Face flushed, and Sweating (not due to heat). Respondents indicate how much they have been bothered by each symptom in the past week by rating it on a four-point scale from 0 to 3. The ratings correspond as follows: "Not at all" (0 points); "Mildly; it did not bother me much" (1); "Moderately; it was very unpleasant, but I could stand it" (2); and "Severely; I could barely stand it" (3). The total score is calculated by summing the values for all 21 items. Scores range from 0 to 63, with higher scores reflecting greater severity of anxiety. The authors recommend that total scores ranging from 0-7 points indicate a minimal level of anxiety; scores from 8-15 reflect mild anxiety; scores from 16-25 are indicative of moderate anxiety; and scores from 26-63 suggest severe anxiety. While these cut-off scores represent a revision of the original diagnostic range descriptions, the BAI manual reports that an investigation of the sensitivity and specificity of these categories for discriminating clinical anxiety had not been conducted.

The development and psychometric properties of the BAI are reported on the basis of research involving three samples of psychiatric outpatients (n = 1,086) drawn from a cognitive therapy centre. The patients were primarily diagnosed as having mood and anxiety disorders, however various other disorders were also evident. Reliability and validity analyses were conducted with a sub-sample of 160 outpatients (Beck, Epstein, Brown, & Steer, 1988). The alpha coefficient is reported at 0.92. Test-retest reliability, calculated from 83 outpatients who completed the BAI on two occasions separated by a one-week interval, is reported at 0.75.

A recent meta-analysis assessed the reliability of BAI scores from 47 studies (De Ayala, Vonderharr-Carlson, & Doyoung Kim, 2005). The samples were diverse in terms of gender, sample size, ethnicity, and diagnostic classification. Coefficient alpha values were reported to range from 0.83 to 0.95, and test-retest reliability coefficients ranged from 0.35 to 0.83. De Ayala et al. (2005) suggest that the variability observed in the latter may be attributed to the wide range of time intervals between BAI administrations (between 7 – 112 days).

Convergent validity has been investigated in studies that report correlation coefficients between BAI scores and scores on other measures of anxiety. In their sample of 160 outpatients, Beck et al. (1988) observed a correlation of 0.51 (p < .001) between the BAI and the Hamilton Anxiety Rating Scale –Revised (Riskind, Beck, Brown, & Steer, 1987). Similarly significant correlations have been reported in a study comparing scores on the BAI with the Trait (r = 0.58, p < .001) and State (r = 0.47, p < .01) subscales of the State-Trait Anxiety Inventory (Spielberger, 1983). Research in which BAI total scores have been reported to differentiate types of anxiety disorder provides evidence for discriminant validity (Beck et al., 1988). In addition, while research has shown a positive linear relationship between the BAI and the Beck Depression Inventory (Beck & Steer, 1987) that is consistent with findings on the comorbidity between anxiety and depression (Carr & McNulty, 2006), items on the BAI and BDI have been reported to load on separate factors (Beck et al., 1988).

10.3.1.5 Demographic Questionnaire

A demographic questionnaire comprising 16 items was developed to obtain relevant information from participants pertaining to their current imprisonment status, and their educational and mental health histories (see Appendix 2).

10.4 Procedure

10.4.1 Ethical Approval and Permission to Conduct the Study

Prior to data collection, ethical approval to conduct this research was sought from the Irish Prison Service (IPS) and National University of Ireland, Galway (NUIG) Research Ethics Committees. Based on the initial submissions, both Committees requested addenda prior to granting approval. For example, the NUIG Committee requested that protocols be provided outlining the procedure for making mental health referrals, to ensure the physical safety of the researcher, and to ensure that potential participants would understand the materials provided and be able to provide informed consent. The IPS Committee requested that the appropriate medical and mental health professionals in participating prisons be informed of the study prior to data collection. Once ethical approval was granted, permission to collect data in the participating Prisons was sought from, and granted by the respective Prison Governors. The Psychology services operating in each participating prison agreed to accept referrals identified through the research.

10.4.2 Participant Selection Procedure

A list of eligible participants was generated for each of the Prisons through the Irish Prison Service database (PRIS). Potential participants were selected using a stratified random sampling method (e.g. Linehan et al., 2005). In Arbourhill, for example, PRIS identified approximately 150 individuals who were in custody at the time of sampling. Every third person on this list was sent a Participant Information Sheet (Appendix 3), thus creating a sample of 50 potential participants. A similar method was used to create a sample of 116 potential participants in Cork Prison, and 80 potential participants from the general prison population in the Midlands Prison. Each was afforded at least 24 hours to review the Participant Information Sheet and to consider taking part. In Limerick Prison, a convenience sample was recruited from the education unit. In this case, approximately 35 eligible participants were approached by the researcher and asked if they would like to consider taking part in a study about psychological well-being in prison. Those who expressed an interest were given a Participant Information Sheet and afforded time to consider taking part.

In total, 281 potential participants were identified and given a Participant Information Sheet. Due to time and resource constraints however, not all 281 were invited to take part. In addition, at the time of recruiting not all potential participants

were available or present. Of those who were invited and available, 38 of 48 agreed to take part in Cork Prison, 21 of 50 agreed to take part in Arbourhill Prison, 26 of 35 agreed to take part in Limerick Prison, and 16 of 23 agreed to take part in the Midlands Prison. This represents a 64.7 percent rate of acceptance. These figures appear largely consistent with previous prison studies in Ireland, in which approximately one third decline to participate (Duffy et al., 2006; Linehan et al., 2005).

10.4.3 Participation and Informed Consent

Potential participants were invited to meet with the researcher on an individual basis or in small groups with other potential participants. Those who agreed were escorted to and from a designated meeting/therapy room by a Prison Officer, and one or more Prison Officers remained present in the landing or area outside the room as a precaution to ensure safety.

During the meeting, the researcher read, and clarified where necessary, the information in the Participant Information Sheet and the Consent Form (Appendix 3)[5]. Potential participants were informed in clear and straightforward terms of the following:

- The general rationale and goals of the research.
- The nature and requirements of participation: participants were made aware that some of the questions might raise difficult thoughts, feelings, or memories for them because they ask about depression, anxiety, and hopelessness.
- The voluntary nature of taking part and the absence of explicit rewards for doing so.
- The right to withdraw at any time without adverse consequences.
- The limits to confidentiality[6].
- The procedure for seeking, and discussing options for referral to a mental health professional within the prison.
- Data storage, security, and anonymity.
- The dissemination of the research findings.

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[5] The Participant Information Sheet and Consent Form were developed with reference to resources such as: the Psychological Society of Ireland Code of Professional Ethics and the NUIG Research Ethics Committee Guidance Notes Version 3.0; and in consultation with the researcher's Clinical and Research Supervisors, and the NUIG and IPS Research Ethics Committees.

[6] The limits to confidentiality are documented in the Irish Prison Service Research Ethics Committee's Exception to Confidentiality.

The researcher also attended to the psychological measures and explained how to complete them. Potential participants had the opportunity to ask questions about the nature of their participation and about the information contained in these documents. Each was invited to decline to participate if he wanted no further involvement, if he was not satisfied with the information, or if he was not satisfied that he fully understood it. Those who agreed to voluntarily take part were required to sign the Consent Form and any concerns or questions raised were addressed prior to their participation.

10.4.4 Procedure for Completing the Measures

Participants were asked to complete four short standardised psychological measures: The Attributional Style Questionnaire (ASQ; Peterson et al., 1982), Beck Depression Inventory, Second Edition (BDI-II; Beck et al., 1996), Beck Anxiety Inventory (BAI; Beck & Steer, 1990), and Beck Hopelessness Scale (BHS; Beck et al., 1974). They were also asked to complete the demographic questionnaire. Participants completed the measures on an individual basis, or in small groups of up to four participants, in the presence of researcher. Some elected to complete the measures in their own time in the privacy of their prison cell and were permitted to do so. The researcher assisted individuals with literacy or other learning difficulties[7]. Participation time was approximately 40 minutes. While many required an hour to complete the measures, a significant proportion completed their participation within thirty minutes.

10.4.5 Debriefing

Participants were debriefed upon completing the measures. This involved an open-ended informal discussion on the theoretical nature and hypotheses of the study. In addition, participants were asked about their experience of taking part and invited to discuss any issues or concerns raised in completing the measures. While it was not feasible to provide personal feedback to each participant about the outcome of their

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[7] It has been well documented that adults in prison tend to have significantly poorer literacy levels than adults in the general population, both in the Irish context (Morgan & Kett, 2003) and internationally (Clark & Dugdale, 2008; Greenberg, Dunleavy, Kutner, White, 2007). In addition, the incidence and prevalence of intellectual disabilities and other learning difficulties is significantly higher in prison populations (Murphy, Harrold, Carey, & Mulrooney, 2000; Greenberg et al., 2007). The documents used in this study were designed and composed with this in mind. In addition, the psychological instruments selected have been designed for use with adolescents to adults.

scores, each was informed that the overall findings of the research would be made available to them via a poster presentation.

10.4.6 Referral Procedure

Participants who expressed an interest in availing of the support of the IPS Psychology Services were either advised on the procedure for seeking such a referral or, in the case of more vulnerable or distressed individuals, invited to discuss the nature of their concerns on an individual basis with the researcher so that a referral could be made on their behalf. Participants who reported significantly elevated levels of symptoms (e.g. Scores in the severe range on the BDI-II, BHS, or BAI), those who endorsed items relating to suicide, or those who appeared to be at risk were consulted with, where appropriate, and referred to IPS Psychology or mental health services.

10.4.7 Data Security

Participants were made aware of their anonymity in taking part in the present study. Although they were required to sign the Consent Form, they were not required to write their name on any other document. Each person was subsequently assigned an arbitrary unique number. This number was used to identify each participant's information in the data set. The data set was stored in encrypted electronic format and retained by the researcher for statistical analyses. The researcher retained the data for a period of time agreed with the National University of Ireland, Galway (NUIG).

Each questionnaire pack, containing the signed Consent Form and the completed measures, was sealed in an envelope. The sealed envelopes were stored in a locked cabinet in the IPS Psychology Service headquarters in Arbour Hill, Dublin 7.

Raw data could be released only if:

- A participant decided to withdraw and have his information omitted from the study.
- The researcher was legally obliged to release information under the request of an appropriate court of law.
- The Clinical Psychology Programme at NUIG requested the data for the purposes of examination.

- Future research endorsed by the Clinical Psychology Programme at NUIG sought to analyse the data to further contribute to the body of research on the well-being of the prison population in Ireland.

10.5 Sample Size Estimates

Prior to data collection it was necessary to establish the sample size required to test the regression model and associated hypotheses. Green (1991) offers two formulae for estimating sample size in regression analyses. For studies investigating the overall fit of the regression model, he suggests that the minimum acceptable sample should be $50 + 8m$, where m is the number of predictor variables. Studies investigating the individual predictors within a regression model should have a sample size of $104 + m$. The latter formula is also recommended for studies where both the overall fit of the model and the contribution of individual predictors are of interest. In the present study there are four predictor variables (i.e. the attributional dimensions of internality, stability, globality, and controllability). For the present study, a suggested sample size of 82 to assess the model fit and 108 to assess the predictors were calculated using this formula.

Field (2009) suggests that guidelines such as those proposed by Green (1991) provide an oversimplified calculation of sample size because they do not account for variations in significance level, statistical power, and effect size. Accounting for these relevant variables, Field (2009) provides an illustrated graph of sample size estimates based on the work of Miles and Shevlin (2001). Analysis of this graph indicated that a sample size of approximately 90 participants was appropriate for the present study. This approximation was subsequently compared with the sample size estimate produced by G*Power 3.1.

G*Power is a computer programme used to analyse the power of many statistical tests typically used in social, behavioural, and bio-medical sciences (Faul, Erdfelder, Buchner, & Lang, 2009). An a priori analysis (Cohen, 1988) revealed that 85 participants was an appropriate sample size for the present study. This number was computed as a function of the required significance level ($\alpha = .05$), the desired statistical power ($1 - \beta = 0.8$), the estimated effect size in the population ($f^2 = 0.15$), and the number of predictors in the model ($m = 4$). Cohen (1988) recommended that a statistical power of .8 was appropriate, providing an 80 percent chance of detecting an effect that actually exists in the population. A medium effect size of $f^2 = 0.15$ was estimated on the

basis of previous research investigating the relationship between attributional style dimensions and depression. Sweeney et al. (1986) analysed effect size data of this relationship in up to 90 studies. Having statistically corrected for attenuation, they reported sample-weighted average effect sizes for negative events of r = 0.36 for internality, r = 0.34 for stability, r = 0.37 for globality, and r = 0.44 for total composite attributions. Based on Cohen's (1988, 1992) suggestions, these represent medium effect sizes. It was therefore estimated that a medium effect size would be likely in the present study.

10.6 Data Analysis

Raw data was coded and entered into Statistical Package for the Social Sciences, Version 15.0 (SPSS 15.0, 2006) for analysis. The data analysis process is subsequently described and the results are presented in the following chapter.

10.7 Chapter Summary

One hundred and one participants took part in this study. Participants were recruited from Cork, Limerick, Arbourhill, and the Midlands Prisons. It was estimated that the sample in the present study provided a reasonable representation of the total prison population. A cross sectional quasi-experimental design was employed. Ethical approval for the study was provided by the IPS and NUIG Research Ethics Committees. Prior to taking part, participants were required to read the Participant Information Sheet and sign the Consent Form. They subsequently completed the Attributional Style Questionnaire, the Beck Depression Inventory – Second Edition, the Beck Hopelessness Scale, the Beck Anxiety Inventory, and a demographic questionnaire. Participants were debriefed upon completing the measures and referrals were made to the IPS Psychology Service where appropriate. Sample size estimates indicated that the present study required 85 participants.

CHAPTER ELEVEN

Results

11.1 Chapter Overview

In this chapter the procedure for data analyses are described and the results are presented. Preliminary analyses in which the data were screened and assessed for normality of distribution are outlined. Internal consistencies for the scales were also calculated. The chapter subsequently presents descriptive statistics relating to the sample and instruments. Finally, the results from the multiple regression analyses in testing the hypotheses and building an attributional model of depression are interpreted.

11.2 Preliminary Analyses

11.2.1 Screening the Data

The data set was initially screened by analysing frequency values such as the mean and standard deviation, and the maximum and minimum values for each scale. This method was used to identify errors within the data that could invalidate or affect subsequent statistical analyses. No data errors or conspicuous extreme values were identified.

11.2.2 Analysis of the distribution of scores

A number of methods were used in the present study to evaluate the normality of the data distribution. Visual analysis of P-P plots and histograms indicated that the various dimensions of the Attributional Style Scale were normally distributed. The Beck Hopelessness, Anxiety, and Depression scales however did not appear to be normally distributed. There was a high frequency of low scores on each scale suggesting that their distributions were positively skewed. Skewness and kurtosis z-scores were calculated for each scale as recommended by Field (2009). The data was also subject to the Kolmogorov-Smirnov test. Summary findings from these analyses are presented in Table 11.1.

Table 11.1 Normality Test Results

| Scale | Kolmogorov-Smirnov | | | Skewness | Kurtosis |
	Statistic	df	Significance	z-score	z-score
BDI-II	.144	99	.000	4.148*	.751
BAI	.170	100	.000	5.473*	2.492
BHS	.192	100	.000	7.676*	6.851*

*z-score values above 2.58 are significant at p<.01 (Field, 2009, p.139)

Analysis of the transformed skewness and kurtosis values indicated that the three Beck scales were significantly positively skewed. In addition, significant positive kurtosis was evident in the Hopelessness Scale. The Kolmogorov-Smirnov test revealed that scores on the Beck Depression Inventory-II (BDI-II), D (99) = .14, p < .001, the Beck Anxiety Inventory (BAI), D(100) = .17, p < .001, and the Beck Hopelessness Scale (BHS), D(100) = .19, p < .001, were significantly non-normal. It may be important to note that with increasing sample sizes violations to the assumption of normality are common and may not bias the inferential analyses (Tabachnick & Fidell, 1996).

Analysis of boxplots revealed a number of outliers towards the upper end of the Beck scales. These outliers reflected a small number of participants who endorsed a higher frequency and severity of clinical symptoms and thus contributed to the deviation from the normal distribution.

Findings from the distribution analysis suggest that the sample as a whole tended not to endorse many depression, anxiety, and particularly hopelessness items. Given that the Beck scales are designed to elicit the presence of clinical symptoms that are typically present in a minority of individuals, it is not surprising that the present study observed a high frequency of low scores on these measures, and hence positive skewness values. According to Pallant (2001), many scales used in the social sciences produce skewed distributions. This does not necessarily indicate that the scale itself is problematic, but rather reflects the nature of the underlying construct being measured (p.59). Her observation appears to be relevant in this case, since epidemiological data suggest that depression, anxiety, and hopelessness are not normally distributed in many populations.

11.2.3 Reliability analyses

The reliability of the ASQ and Beck scales were assessed using Cronbach's alpha coefficient (α). This statistic evaluates a scale's internal consistency and the extent to which the comprising items measure the same underlying construct.

Cronbach's α for the BDI-II was .92. This exceeds the recommended level of .7 (Pallant, 2001) and suggests that the BDI-II can be considered reliable with the present sample. Interestingly, and unlike the other BDI-II items, item 6 (punishment feelings) and particularly item 21 (loss of interest in sex) did not correlate well with the total BDI-II score. This suggests that, for the present sample, these items were not tapping the same underlying construct (i.e. depression) as the other items.

The α values for the BAI and BHS were 0.95 and 0.91, respectively. Likewise, the BAI and BHS can be considered reliable with the present sample. BHS item 8 ("I happen to be particularly lucky, and I expect to get more of the good things in life than the average person") correlated least well with the BHS total score. While it still loaded moderately onto the underlying construct of hopelessness, it also appeared to be tapping another construct in the present sample.

It has been suggested that if a questionnaire comprises subscales, indicating the existence of a number of factors underlying a larger construct, α should be applied separately to each subscale (Cronbach, 1951; cited in Field, 2009). This method was applied to the ASQ. Thus, for negative events, the analysis yielded α values of 0.54 for internality, 0.54 for stability, 0.66 for globality, and 0.65 for uncontrollability. The composite score for negative events based on the summation of the original three dimensions was 0.74, and the composite including the new dimension of uncontrollability was 0.76. For positive events, the α values were 0.59 for internality, 0.47 for stability, 0.55 for globality, and 0.67 for uncontrollability. The composite score for positive events based on the summation of the original three dimensions was 0.70. To compute a composite score for positive events including the dimension of uncontrollability it was necessary to reverse the scoring of the uncontrollability scale for positive events. Uncontrollability, regardless of event valence (i.e. whether the event is negative or positive), has theoretical implications for a depressogenic attributional style. Thus, 'controllability' rather than uncontrollability would compliment internal, stable, and global attributions for positive events in an enhancing attributional style. This

reverse scoring method was therefore necessary to compute an alpha coefficient for the composite of positive events including the controllability dimension. The composite for positive events comprising all four dimensions was 0.73.

Although the composite α values attainted the recommended level for adequate internal consistency, the subscale α values did not. On this point, the present values appear consistent with dimensional and composite reliability estimates reported in numerous studies using the ASQ (Sweeney et al., 1986). In addition, lower Cronbach alpha values are frequently observed with scales comprising less than ten items (Pallant, 2001). Within the ASQ the dimensional subscales each has six items. Peterson and Villanova (1988) expanded the ASQ to include 24 negative hypothetical events. They reported considerable increases in internal consistencies, which fell within the .7 to .9 range. Thus, it appears that the reliability estimates observed in the present study are more a function of the low number of items in each subscale rather than a reflection of a poor measure or weak underlying attributional construct.

When a scale has few items, Briggs and Cheek (1986) recommend that inter-item correlations between .2 and .4 are indicative of adequate internal consistency. In this case, most dimensional items attainted reliabilities within this range. The ASQ may therefore be described as having modest but adequate reliability with the present sample.

11.3 Descriptive Statistics

Descriptive statistics for the continuous predictor and criterion variables are presented in Table 11.2.

Table 11.2 Descriptive Statistics for the Predictor and Criterion Variables

Scale	n	Mean	Standard Deviation	Possible Range	Minimum Score	Maximum Score
BDI-II	99	18.02	12.24	0-63	2	53
BAI	100	12.66	13.26	0-63	0	59
BHS	100	4.35	4.68	0-20	0	20
ASQ Internality for negative events	92	4.34	1.15	1-7	1	7
ASQ Stability for negative events	92	4.30	.97	1-7	1.33	6.67
ASQ Globality for negative events	92	4.03	1.25	1-7	1	6.67
ASQ Uncontrollability for negative events	92	4.11	1.30	1-7	1	6.83
ASQ Internality for positive events	92	5.44	.94	1-7	2.5	7
ASQ Stability for positive events	92	5.25	.83	1-7	3.33	7
ASQ Globality for positive events	92	4.90	1.03	1-7	2.67	7
ASQ Controllability for positive events	92	4.72	1.27	1-7	1.33	7

It is evident from Table 11.2 that not all participants completed all measures. A few provided incomplete or invalid questionnaires and, as a result, could not be included in the analyses. The Attributional Style Questionnaire had the highest frequency of incompletion and missing responses. This is reflected in the fact that 92 of 101 participants completed it adequately. For negative events on the ASQ, central tendency is apparent from the mean score on each attributional dimension. These scores showed little deviation from the middle value of 4. Causal attributions for positive events, on average, were apparently more inclined towards the higher end of the scales and hence towards an enhancing attributional style (e.g. the tendency to attribute the causes of positive events to internal, stable, global, and controllable factors). In and of

themselves these mean values may not be very meaningful. However, their significance (or insignificance) becomes more apparent when correlated with measures of psychopathology. These associations will be explored in the next section.

The average BDI-II score was 18.02 (SD = 12.24), which falls within the 'mild' range of depressive symptoms. Perhaps not surprisingly, the BDI-II item with the highest mean score, suggesting that participants endorsed it more often and more highly than other items, was that reflecting 'Punishment Feelings'. The item with the lowest mean score was that reflecting 'Suicidal Thoughts or Wishes'.

The average BAI score was 12.66 (SD = 13.66), and the average BHS score was 4.35 (SD = 4.68). Despite the quantitative discrepancies between the scores, all of the mean values for the Beck measures fall within their respective 'mild' ranges (Beck & Steer, 1990; Beck et al., 1996; Beck et al., 1974). In order to provide a better indication of the distribution of scores within each of the Beck measures, the scores were subdivided according to the ranges and associated qualitative categories specified in their respective manuals. The ranges and associated categories are presented in Table 11.3.

Table 11.3 Ranges and Qualitative Categories on the Beck Measures.

Measure	Minimal	Mild	Moderate	Severe
BDI-II	0 - 13	14 - 19	20 - 28	29 - 63
BAI	0 - 7	8 - 15	16 - 25	26 - 63
BHS	0 - 3	4 - 8	9 - 14	15 - 20

Table 11.4 illustrates the frequency distributions for these qualitative categories in the present sample.

Table 11.4 Frequency Distributions for the Qualitative Categories on the Beck Measures.

Measure	Minimal	Mild	Moderate	Severe
BDI-II	47 (46.5%)	14 (13.9%)	17 (16.8%)	21 (20.8%)
BAI	46 (45.5%)	24 (23.8%)	13 (12.9%)	17 (16.8%)
BHS	56 (55.4%)	31 (30.7%)	8 (7.9%)	5 (5%)

The distribution of scores within the categories indicates that the occurrence and intensity of depressive symptoms were more frequently endorsed than symptoms of anxiety or hopelessness. For example, 37.6 percent of the sample reported experiencing moderate to severe levels of depressive symptoms in comparison to 29.7 percent and 12.9 percent reporting moderate to severe levels of anxiety symptoms and hopelessness, respectively. This finding appears consistent with previous research that depression is the most common psychological problem among prisoners (Sirdifield et al., 2009; Falissard et al., 2006).

11.4 Correlation Analyses

Bivariate relationships between the predictor and criterion variables were examined in a correlation matrix using Kendall's tau[8] (τ), a non-parametric statistic for analysing the relationships between variables with non-normal distributions. The results of this analysis are presented in Table 11.5.

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[8] Spearman's correlation coefficient is the more frequently used non-parametric statistic, however, it has been argued that Kendall's tau provides a better estimate of the true relationship in the population (Howell, 1997; cited in Field, 2009).

Table 11.5 Correlation Matrix of the Predictor and Criterion Variables.

		BDI-II	BAI	BHS	Int Neg	St Neg	Glo Neg	Unctrl Neg	Int Pos	St Pos	Glo Pos	Ctrl Pos
BDI-II	Correlation	1.000										
	Sig 2-tailed											
BAI	Correlation	.550**	1.000									
	Sig 2-tailed	.000										
BHS	Correlation	.331**	.308**	1.000								
	Sig 2-tailed	.000	.000									
Internal Negative	Correlation	.227**	.218**	.180*	1.000							
	Sig 2-tailed	.002	.003	.017								
Stable Negative	Correlation	.060	.015	.173*	.165*	1.000						
	Sig 2-tailed	.421	.842	.023	.026							
Global Negative	Correlation	.236**	.180*	.083	.228**	.337**	1.000					
	Sig 2-tailed	.001	.015	.272	.002	.000						
Uncontrol Negative	Correlation	.077	.028	.123	-.083	.388**	.184*	1.000				
	Sig 2-tailed	.296	.700	.101	.258	.000	.012					
Internal Positive	Correlation	-.218**	-.145	-.088	.121	.054	-.170*	-.039	1.000			
	Sig 2-tailed	.003	.052	.246	.103	.466	.021	.597				
Stable Positive	Correlation	-.115	-.139	-.209**	.103	.066	-.056	.007	.297**	1.000		
	Sig 2-tailed	.124	.062	.006	.163	.372	.448	.927	.000			
Global Positive	Correlation	.082	.028	.014	.119	.028	.150*	-.098	.196**	.134	1.000	
	Sig 2-tailed	.269	.708	.815	.106	.707	.041	.179	.008	.069		
Control Positive	Correlation	-.150*	-.178*	-.131	.013	-.065	-.175*	-.207**	.210**	.192**	.070	1.000
	Sig 2-tailed	.042	.016	.082	.858	.379	.017	.005	.004	.009	.338	

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

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

The demographic variables of interest are not presented in Table 11.5, however, some of the observed relationships may be noteworthy. Firstly, there was a significant positive association between age and 'number of months since admission' (τ = .286, p < .01), and between age and 'number of months to remission' (τ = .213, p < .05). This statistic suggests that as prisoners get older, they are more likely to have been incarcerated for longer and to have longer terms to serve prior to release. Interestingly, there was a significant negative correlation between age and BAI scores (τ = -.211, p < .01), suggesting that as prisoners get older they are likely to be bothered by fewer anxiety symptoms. 'Number of months since admission' was also negatively correlated with anxiety (τ = -.153, p < .05). 'Number of months to remission' was not associated with depression, anxiety, or hopelessness. A significant negative association was evident between 'number of years in formal education' and BDI-II scores (τ = -.201, p < .01), and BAI scores (τ = -.265, p < .01). Thus, the less time a participant spent in

school the more likely he was to experience increasing symptoms of depression and anxiety at the time of data collection.

Table 11.5 illustrates a number of significant associations among the predictor and criterion variables. Significant positive relationships were evident between symptoms of depression, anxiety, and hopelessness. BDI-II depression scores showed significant positive correlations with internal (τ = .227, p < .01) and global (τ = .236, p < .01) attributions for negative events, and significant negative correlations with internal (τ = -.218, p < .01) and controllable (τ = -.150, p < .05) attributions for positive events. Similarly, BAI anxiety scores showed significant positive correlations with internal (τ = .218, p < .01) and global (τ = .180, p < .05) attributions for negative events, and a significant negative correlation with controllable (τ = -.178, p < .05) attributions for positive events. BHS hopelessness scores were positively associated with internal (τ = .180, p < .05) and stable (τ = .173, p < .05) attributions for negative events, and negatively associated with stable (τ = -.209, p < .01) attributions for positive events. The attributional dimensions for negative events evinced various inter-correlations, suggesting that they are associated with an underlying construct. Indeed, each of the internal (τ = .370, p < .01), stable (τ = .588, p < .01), global (τ = .578, p < .01), and uncontrollable (τ = .464, p < .01) attributional dimensions showed a significant positive association with the additive composite score derived from all four dimensions for negative events. Likewise, various inter-correlations were evident between the attributional dimensions for positive events. These analyses were used to inform the multiple regression procedure in the following section. Again, each of the internal (τ = .528, p < .01), stable (τ = .439, p < .01), global (τ = .415, p < .01), and controllable (τ = .532, p < .01) attributional dimensions showed a significant positive association with the additive composite score derived from all four dimensions for positive events.

11.5 Inferential Statistics

11.5.1 Multiple Regression

Multiple regression was considered the most appropriate inferential statistical technique for evaluating the hypotheses. It is generally used to explore the relationship between a number of independent predictor variables, in this case the attributional dimensions, and a continuous criterion variable, in this case depressive symptoms. It is based on correlational analyses, but provides a more complex approach to analysing

data. Statistically, multiple regression calculates a best-fit model for the observed data based on theoretical assumptions about the proportion of variance in an outcome variable being shared, or explained by a set of predictor variables. Thus, it indicates how well a set of variables is able to predict a particular outcome and it assesses the relative contribution of each variable to the outcome (Pallant, 2001). The goal is to find the most parsimonious linear combination of variables that correlate most highly with the outcome variable, such that including additional variables does not contribute to the predictive ability of the model over and above the variables already included in the model (Field, 2009).

11.5.2 Assumptions of Multiple Regression

Prior to interpreting the outcome of a multiple regression analysis it is important to investigate whether any of the assumptions associated with this statistical technique have been violated. It is important to meet these assumptions so that the regression model can be applied to the population of interest. These assumptions are subsequently outlined in relation to the present analyses.

11.5.2.1 Sample size

In conducting a multiple regression analysis, it is important to have a sufficient number of participants for the findings to be reliable. It was noted in the previous chapter that an a priori analysis using G*Power (Faul et al., 2009) revealed that 85 participants was an appropriate sample size for the present study. This number was computed as a function of the required significance level ($\alpha = .05$), the desired statistical power ($1 - \beta = 0.8$), the estimated effect size in the population ($f^2 = 0.15$), and the number of predictors in the model ($m = 4$).

11.5.2.2 Multicollinearity

Multicollinearity occurs when two or more predictor variables in a multiple regression are substantially correlated. This is problematic because, if two predictors are almost perfectly correlated, it is not possible to determine the unique contribution of each regression coefficient to the model. It is therefore assumed that collinearity does not exist between two or more predictor variables in computing the statistic. Tabachnick and Fidel (1996) warn against including variables with a bivariate correlation in excess of .7 because this is indicative of multicollinearity and suggests that the variables are

not distinct. In the present study, the correlation matrix produced by the regression statistic revealed no substantial associations among the predictor variables. The highest correlation occurred between uncontrollability and stability ($r = .512$, $p < .001$). In further testing this assumption other authors have recommended checking the tolerance level (Pallant, 2001) and VIF values (Field, 2009) for each predictor produced by the collinearity statistics. It has been argued that tolerance levels near zero (i.e. $< .2$) and VIF values greater than ten are problematic (Myers, 1990). In this case, tolerance levels did not fall below .616 and VIF values did not exceed 1.624. Taken together these finings indicate that the assumption of no multicollinearity was supported. It was therefore considered appropriate to retain all predictor variables in the model.

11.5.2.3 The distribution of scores

In multiple regression a number of assumptions are made about the distribution of scores and the nature of the relationships between the model variables. In testing these assumptions it is helpful to examine the residual statistics. Residuals represent the differences between the obtained and predicted values on the criterion variable.

Firstly, inspection of the Durbin-Watson statistic (1.931) supported the assumption that the residuals in the model were independent. Normality was subsequently assessed by analysing the distribution of residual values around the predicted criterion scores in the standardised residual scatter plot. An approximate rectangular distribution of scores on the scatter plot was consistent with the normality assumption. This distribution also showed that relatively equal variance was evident in the residual values for each score observed on the criterion variable. The assumption of homoscedasticity was therefore supported. Analysis of the histogram revealed a reasonably normal bell-shaped distribution and no marked deviation was apparent from the normal probability plot. These findings also supported the assumption of normality.

In a normal distribution it is expected that 95 percent of scores have standardised residuals of ±2 (Field, 2009). In the present study 99 participants completed the criterion measure (i.e. the BDI-II), therefore, we would expect approximately five cases to have standardised residuals outside ±2. Analysis of the casewise diagnostics revealed four such participants and none of these exceeded a residual value of 2.5. This suggests that the sample conforms to what would be expected for the model to be accurate.

Extreme scores can bias the multiple regression output. The standardised residual scatter plot for the dependent variable illustrated that no outlying values above

3.3 or below -3.3 were evident in the distribution of scores (see Tabachnick & Fidell, 1996). Potentially extreme scores were also assessed by inspecting the Mahalanobis distances in relation to the critical values supplied by Tabachnick and Fidell (1996). In the present study, none of the Mahalanobis distances exceeded the recommended critical value of 18.47. This finding suggested that no significant outliers were present, thus supporting the assumption.

Overall, none of the important assumptions were violated. The model appears, for the most part, to be accurate for the present sample and could generalise to the population from which the sample was drawn.

11.6 Hypothesis Testing

11.6.1 Hypothesis 1

According to the reformulated learned helplessness model of depression, increasingly depressogenic attributions for negative events predict greater levels of depression. Stated as a hypothesis, it was predicted that the model comprising the three original attributional dimensions would account for significant variance in depressive symptom scores on the BDI-II. At the dimensional level, it was predicted that:

1.1   Internal attributions for negative events on the ASQ would make a unique contribution to explaining the variance in depressive symptoms.

1.2   Stable attributions for negative events on the ASQ would make a unique contribution to explaining the variance in depressive symptoms.

1.3   Global attributions for negative events on the ASQ would make a unique contribution to explaining the variance in depressive symptoms.

Standard multiple regression was used to test these hypotheses. It is a forced entry method in which all of the predictor variables are entered into the model simultaneously. This approach requires a sound theoretical justification for the inclusion of the particular predictors and is therefore an appropriate method for theory testing.

The R^2 value indicates how well the model fits the data. In this case $R^2 = .193$. When expressed as a percentage, this means the model explains 19.3 percent of the variance in depressive symptoms. The adjusted R^2 value provides an indication of how much variability in the outcome would be explained by the predictors if the model was applied to the population. Thus, it provides an estimate of how well the model generalises. In this case the adjusted R^2 (.165) suggests that 16.5 percent of the variance

in the criterion variable would be explained by the model in the population. The R^2 model predicted a statistically significant amount of variance in the outcome measure [F (3, 86) = 6.887, $p < .001$]. The preliminary hypothesis is therefore tenable.

Analysis of the standardised Beta coefficients revealed that 'globality' made the strongest unique contribution to explaining the variance in depressive symptoms, when the variance explained by all other variables in the model was controlled ($\beta = .320$, $p < .01$). A slightly smaller Beta value was evident for 'internality' ($\beta = .220$, $p < .05$) indicating that it contributed less, albeit significantly to predicting the criterion variable. 'Stability' did not make a statistically significant unique contribution ($\beta = -.045$, $p = .679$). Hypotheses 1.1 and 1.3 were therefore retained, however, 1.2 was not.

11.6.2 Hypothesis 2

It was expected that the attributional model for negative events would account for a significant amount of variance in depressive symptoms after controlling for, or partialing out, the variance explained by anxiety. Hierarchical multiple regression was used to test this hypothesis. Total BAI scores were entered in the first block, to control for anxiety, and the attributional dimensions were entered in the second. The first stage of the hierarchy showed that anxiety made a significant contribution to explaining variance in the criterion [$R^2 = .501$, F (1, 88) = 88.487, $p < .01$]. Analysis of the R^2 change statistic indicated that the addition of the attributional variables corresponded with a non-significant increase in the R^2 value (R^2 change = .037, $p = .089$). None of the attributional variables made a significant unique contribution to explaining variance in the outcome above the variance already predicted by anxiety. In addition, and similar to their relationship with depression, both the internal ($\tau = .218$, $p < .01$) and global ($\tau = .180$, $p < .01$) attributional dimensions for negative events correlated significantly with anxiety. The null hypothesis, that the attributional model is not specific to depression, was retained on this occasion.

11.6.3 Hypothesis 3

It was hypothesised that perceptions of uncontrollability would moderate the impact of: 3.1 internal, 3.2 stable, and 3.3 global attributions for negative events on depression. According to Baron and Kenny (1986) moderator effects are indicated in a linear regression equation by the significant interaction of the predictor and moderator

variables, while the main effect of each is controlled. Alternatively, in testing interaction effects it is possible to dichotomise the independent variables, by dividing the sample into high and low scoring groups for example. Dichotomising the variables in this way allows for group comparisons and facilitates the statistical analysis of interaction effects on the outcome variable. In the present study, this would involve dividing participants into high and low scoring groups on each of the moderator and independent variables. The hypothesis could hence be tested using logistic regression or two-way repeated measures ANOVA. The practice of dichotomising variables in this way has, however, been criticised on statistical grounds (MacCallum, Zhang, Preacher, & Rucker, 2002). For example, it has been argued that the use of standard deviations to define high and low scoring groups typically results in the omission of a large proportion of data of central tendency responders. In this case, such an omission could reduce the statistical power of the test because fewer participants would be included in the analysis. For this reason, the variables in the present analysis were not dichotomised, but analysed in their continuous format.

Hierarchical multiple regression was used to test this hypothesis. The interaction effect between the moderator and predictor was tested for each attributional dimension in a separate regression equation. Prior to analysis the independent variables were centred in order to preserve the assumption of multicollinearity. Depression (i.e. total BDI-II scores) was entered as the criterion variable. In the first hierarchy, the moderator and predictor were entered into the equation to control for the variance each contributed to the criterion. In the second, the interaction or product-term of the moderator and predictor was entered. The interaction was calculated by multiplying the centred values of the moderator by the centred values of the predictor.

The results showed that the interaction effect of uncontrollability×internality (β = .113, p = .256) did not make a significant contribution to predicting additional variance in depression beyond that already explained by the unique effect of each variable in the first hierarchy. The interaction effect of uncontrollability×stability was similarly non-significant (β = .195, p = .064). A statistically significant interaction was however evident between uncontrollability and globality (β = .228, $p < .05$). These findings indicate that uncontrollability did not moderate the impact of internality or stability on depression. Hypotheses 3.1 and 3.2 were therefore rejected. A significant

moderation effect was evident between uncontrollability×globality and depression, so hypothesis 3.3 was retained.

11.6.4 Hypothesis 4

It was predicted that the model would support the hopelessness theory's mediation hypothesis. Previously described, the theory considers hopelessness to be a proximal sufficient cause of hopelessness depression, a symptom specific subtype of depression. Depressogenic attributional style, as a distal contributing factor, predisposes hopelessness in the context of a negative life event. Thus, it was hypothesised that the attributional dimensions for negative events would predict significant variance in hopelessness depressive symptoms via the mediation pathway of hopelessness.

In order to test this hypothesis, three multiple regression equations were conducted (Baron & Kenny, 1986). The first equation examined whether the predictor variables affected the mediator. The findings indicated that the attributional dimensions made a significant contribution $[R^2 = .160, F (4, 87) = 4.152, p < .01]$, explaining 16% of the variance in hopelessness. The second equation sought to establish whether the predictors impacted on the dependent variable. The dependent variable in this case represented the subtype hopelessness depression. In order to create this subtype variable, the BDI-II items corresponding to hopelessness depression symptoms[9] were extrapolated and summed. The regression output revealed that a significant proportion of variance in the hopelessness depression criterion was predicted by the attributional dimensions $[R^2 = .149, F (4, 85) = 3.714, p < .01]$. The third equation regressed the mediator on the criterion and predictors using a hierarchical multiple regression model. In this case, hopelessness was entered in block one to examine its contribution to the criterion and control for the shared variance in subsequent blocks. As expected, hopelessness made a significant contribution $[R^2 = .404, F (1, 88) = 59.704, p < .01]$. In the second block the attributional dimensions were entered to investigate whether they could predict a significant proportion of variance in the criterion, above and beyond that already explained by hopelessness. Analysis of the R^2 change statistic indicated that the

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[9] Joiner and colleagues (2001) used structural equation modelling to examine the symptom cluster component of the hopelessness depression theory. They analysed BDI data from large clinical and non-clinical samples, focusing on items corresponding to sadness, hopelessness, suicidality, difficulty making decisions, trouble getting started/work difficulty, sleep disturbance, and tiredness. The results suggested that the hopelessness depression cluster was a reasonably cohesive syndrome that was statistically distinct from closely related depressive symptoms. In the present study, the item 'loss of energy' was used instead of 'trouble getting started/work difficulty' since this substitution was made in the BDI-II.

addition of the attributional variables contributed to a non-significant increase in the overall model R^2 value (R^2 change = .046, p = .082). Thus, consistent with Barron and Kenny's (1986) description, the effect of the predictors on the criterion was non-significant and less in the third equation than in the second equation. These findings are consistent with the hopelessness theory's hypothesis that the relationship between attributional style and depression is mediated by hopelessness.

It is noteworthy that the mediation model also held when uncontrollability was removed from the predictors. In this case the R^2 change in the third hierarchical equation was significant (R^2 change = .053, p < .05), suggesting that the attributional model did explain unique variance in depression after controlling for hopelessness, however, this unique variance was substantially less than that predicted in the second equation when the mediator was absent [R^2 = .127, F (3, 86) = 4.166, p < .01]. The hopelessness mediation hypothesis was retained for both models. These findings suggest that uncontrollability may be superfluous as a predictor in the present model.

A potentially important caveat was present in investigating this hypothesis. Heteroscedasticity was evident in the standardised residual scatter plot for hopelessness. This was likely due to the previously mentioned non-normal distribution. The newly created hopelessness depression variable arguably made similar violations to the regression assumption. While this does not affect the validity of the model, per se, it has implications for how well the model generalises to the population. The findings should be interpreted with this in mind.

11.7 Building a Parsimonious Attributional Model of Depression

In building a predictive model, Field (2009) recommends conducting a preliminary regression analysis in which all theoretically derived predictor variables are entered into the model to investigate which contribute substantially to the model's ability to predict the outcome. In the present study, the eight attributional dimensions for positive and negative events were entered as the predictors and depression (i.e. total BDI-II scores) was entered as the criterion in an exploratory model. This model made a significant contribution to the outcome [R^2 = .365, F (8, 81) = 5.831, p < .01]. Individual predictors making a significant unique contribution or close to a significant contribution were retained for the parsimonious predictive model. Four variables were included in this regard; internality and uncontrollability for negative events, and internality and globality for positive events. The regression was rerun using these

variables as predictors. Again the model significantly predicted the outcome, accounting for 35 percent of the variance [R^2 = .350, $F_{(4, 85)}$ = 11.423, $p < .001$]. Additionally, each of the predictors made a significant unique contribution to explaining variance in the outcome. Internality for positive events made the strongest unique contribution (β = -.442, $p < .001$), followed by internality for negative events (β = .338, $p < .001$), uncontrollability for negative events (β = .242, $p < .01$), and globality for positive events (β = .231, $p < .05$), in order of strength. A subsequent hierarchical multiple regression equation was conducted to investigate whether the model could account for variance specific to depression over and above that shared with anxiety and 'number of years in formal education'[10]. The findings of this equation are presented in Table 11.6

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[10] Recall that a significant negative association was evident between 'number of years in formal education' and BDI-II scores (τ = -.201, $p < .01$). It was therefore important to control for this variance in order to establish the unique contribution of the attributional model to the outcome. No other demographic variables were significantly associated with depression, and therefore did not warrant inclusion.

Table 11.6 Results of the Hierarchical Regression Attributional Model of Depression

	B	St. Error B	β	Sig	R²
Step 1					
Constant	27.335	4.659			
Years in Education	-.840	.402	-.230	.040	.053
Step 2					
Constant	9.527	4.019			
Years in Education	.018	.311	.005	.955	
Anxiety	.655	.079	.710	.000	.501
Step 3					
Constant	6.733	8.011			
Years Education	-.048	.287	-.013	.869	
Anxiety	.513	.079	.555	.000	
Internality Positive	-3.544	1.052	-.272	.001	
Internality Negative	2.318	.835	.218	.007	
Uncontrollability Negative	1.575	.717	.167	.031	
Globality Positive	1.644	.942	.138	.085	.607

As illustrated in Table 11.6, 'number of years in formal education' was entered in block 1 of the hierarchy to control for potentially shared variance with the attributional predictor variables. In this first stage a significant amount of variance in the criterion was predicted [$R^2 = .053$, $F (1, 78) = 4.358$, $p < .05$]. The entry of anxiety in block 2 significantly added to the variance already explained by the education variable [R^2 change $= .448$, $F (2, 77) = 38.716$, $p < .001$]. In the third and final stage, the attributional variables were added. The result indicated that, after controlling for anxiety and years in education, the attributional variables made a significant contribution to the model [R^2 change $= .106$, $F (6, 73) = 18.817$, $p < .001$]. On this occasion, internality for positive events ($\beta = -.272$, $p < .01$), internality for negative events ($\beta = .218$, $p < .01$), and uncontrollability for negative events ($\beta = .167$, $p < .05$) each made a significant

unique contribution. Globality for positive events did not make a significant contribution ($\beta = .138$, $p = .085$).

11.8 Chapter Summary

Preliminary data analyses suggested that the scales had adequate internal consistencies. Non-parametric correlations were used because the Beck scales were not normally distributed. Inferential statistics suggested that the statistical model was reliable with the present sample and none of the assumptions had been violated. The initial regression model predicted a significant amount of variance in depression and revealed that internal and global attributions for negative events made a unique contribution to the outcome. The model was not significant after controlling for anxiety. Uncontrollability significantly moderated the relationship between globality and depression, however no such moderating effect was evident between internality and depression, or stability and depression. A subsequent regression analysis supported the hopelessness theory's mediation hypothesis that the attributional dimensions for negative events would predict significant variance in the subtype hopelessness depression via the mediation pathway of hopelessness. Finally, a parsimonious regression model was constructed comprising internality and uncontrollability for negative events, and internality and globality for positive events. These variables significantly predicted depression, accounting for 35 percent of the variance. In addition, the model held while controlling for the variance explained by anxiety.

CHAPTER TWELVE

Discussion

12.1 Chapter Overview

This chapter presents an overview of the findings from the statistical analyses. These findings are interpreted in the context of previous research. The psychopathological symptoms in the present sample are reviewed in relation to other prison studies and normative samples. The results from the hypothesis are subsequently appraised and explanations are suggested for particular outcomes in the data. The theoretical, clinical, and crime relevant implications of the findings are also considered. Prior to concluding, the chapter addresses the strengths and limitations of the study and suggests areas for future research.

12.2 Overview of the Findings

This study sought to investigate the nature of the relationship between attributional style and depressive symptoms in a male prison sample. Prior to hypothesis testing, the relationships between the variables were examined using non-parametric statistics. Depression, anxiety, and hopelessness were all significantly and positively correlated. Depression and anxiety were inversely related to 'number of years in formal education'. This suggests that the less time participants spent in school the more likely they were to experience increasing symptoms of depression and anxiety at the time of data collection. This does not imply that a causal relationship exists between time spent in school and later depression and anxiety. The likelihood is that there are a number of underlying biopsychosocial factors that predispose both early school leaving and psychological difficulties in adulthood.

Correlational analyses suggested that participants with a depressogenic attributional style on particular dimensions for negative events were more likely to experience higher levels of depression, anxiety, and hopelessness symptoms. On the other hand, participants with an enhancing attributional style on particular dimensions for positive events tended to report lower levels of symptoms.

The first hypothesis predicted that a model comprising the original three attributional dimensions for negative events would account for significant variance in depressive symptom scores. The results of a standard multiple regression indicated that

the model predicted a significant amount of variance (19.3%) in the outcome, thus supporting the initial hypothesis. The globality and internality attributional dimensions each made a significant unique contribution to the outcome, however, stability did not. The first and third parts of the hypothesis were therefore retained, but the second was not.

The second hypothesis predicted that the model comprising the three attributional dimensions for negative events would predict a significant amount of variance in depressive symptoms after controlling for anxiety. The results showed that anxiety accounted for a significant amount of variance in the outcome. The addition of the attributional variables however corresponded with a non-significant increase in explained variance. The null hypothesis, that the attributional model is not specific to depression, was consequently retained.

The third hypothesis was concerned with the moderating effects of uncontrollability on the relationship between attributional style for negative events and depression. The results indicated that neither the internality×uncontrollability interaction, nor the stability×uncontrollability interaction explained additional variance in the criterion. A significant interaction was evident between globality and uncontrollability in predicting depression. The null hypothesis was therefore retained for the first two parts of this hypothesis, but not for the third.

The fourth hypothesis predicted that the attributional dimensions for negative events would predict significant variance in the subtype hopelessness depression via the mediation pathway of hopelessness. Each equation fulfilled the criteria for mediation thus supporting the fourth hypothesis.

The final phase of the statistical analyses sought to build the most parsimonious attributional model of depression in the present sample. A preliminary regression analysis indicated that internality and uncontrollability for negative events, and internality and globality for positive events comprised the best predictor variables. This model significantly predicted the outcome, accounting for 35 percent of the variance. Additionally each predictor made a significant unique contribution to the outcome. The strongest predictor was internality for positive events, followed by internality for negative events, uncontrollability for negative events, and globality for positive events. A subsequent hierarchical multiple regression revealed that the model made a significant contribution, explaining an additional 10.6 percent of the variance in

depression while controlling for anxiety. On this occasion, bar globality for positive events, each predictor made a significant unique contribution to the outcome.

12.3 Findings in the Context of the Literature

12.3.1 Psychopathological symptoms among prisoners

The results supported the finding that psychological distress and affective difficulties are not universal among prisoners. Nonetheless, moderate to severe levels of depression and anxiety were highly prevalent in the present sample. The mean BDI-II score for participants in this study was 18.02 (SD = 12.24), corresponding to a mild level of depression. This is comparable to the mean BDI-II values reported for other prison samples. For example, NiEidhin, Sheehy, O'Sullivan, and McLeavey (2002) reported mean BDI-II scores of 16.31 (SD = 11.44) for a control sample of incarcerated offenders in Ireland. Mean scores of 19.14 (SD = 5.7) were reported for their total sample including offenders with a history of parasuicide and offenders with current suicidal ideation. Similarly, Palmer and Connolly (2005) reported mean BDI-II scores of 15.13 (SD = 13.99) for a control sample of incarcerated males in the UK and mean scores of 21.28 (SD = 13.27) for the total sample including vulnerable prisoners with a history of self harm. In another UK prison study, Palmer and Binks (2008) investigated the psychometric properties of the BDI-II with a sample of incarcerated young adult males and reported mean scores of 17.41 (SD = 11.18). Finally, Shinkfield and colleagues (2009) cited somewhat lower mean scores in a sample of pre-release prisoners in Australia (M = 13.35, SD = 9.32). In terms of the qualitative range of scores, the sample in the present study again appeared more comparable to the UK sample described by Palmer and Binks (2008) than to Shinkfield et al.'s (2009) Australian sample.

When the average BDI-II scores for incarcerated samples are compared to those of community samples, particularly college students, the former appear to be consistently higher (Shinkfield, et al., 2009). For example, the mean values for male college students have been reported to range from 9.11 (SD = 7.75, Dozois, Dobson, & Ahnberg, 1998) to 11.79 (SD = 9.23, Carmody, 2005). Indeed, incarcerated samples appear to better resemble psychiatric outpatients than 'normative' samples in terms of their depressive symptom profile. This is evident from Beck et al.'s (1996) study of 183 male outpatients (M = 20.44, SD = 13.28) and 53 male college students (M = 10.04, SD = 8.23).

The average level of hopelessness, as measured by the BHS, in the present study (M = 4.35, SD = 4.68) was comparable to the prison sample means reported by NiEidhin et al. (2002; M = 4.45, SD = 3.09) and Palmer and Connelly (2005; M = 6.29, SD = 4.49). The present levels of hopelessness also appear similar to those cited by Beck and Steer (1988) among samples comprising alcohol (M = 4.86, SD = 4.83) and substance misusers (M = 3.89, SD = 3.52). The mean BHS scores reported herein are on average higher, although not substantially so, than normative samples. This is evident from Dozois, Covin, and Brinker's (2003) review of 25 studies, in which BHS scores ranged from 1.70 to 4.45, with a mean of 3.06 (SD = 3.11).

In terms of anxiety, the mean BAI score in this study was 12.66 (SD = 13.66). Surprisingly few studies have reported using the BAI with prison samples, and the mean scores cited in Shinkfield et al.'s (2009) prison study (M = 6.29, SD = 7.71) appear considerably lower than the present sample. While the present sample did not appear to endorse as severe levels of anxiety on the BAI as male samples with various clinical diagnoses (M = 15.72, SD = 12.50: Hewitt & Norton, 1993) and male samples with anxiety disorders (M = 20.53, SD = 11.86: Beck & Steer, 1990), they did report on average higher levels of anxiety than community norms (M = 6.6, SD = 8.1: Gillis, Haaga, & Ford, 1995).

Findings from the present study are consistent with the literature and indicate that the prevalence and severity of psychological problems are more common among prison populations than 'normative' community populations. The present findings are also supportive of research suggesting that depression represents the most significant mental health problem facing prisoners (Sirdifield et al., 2009; Falissard et al., 2006).

12.3.2 Attributional Style for negative events and depression

The initial regression model showed that both internality and globality for negative events each made a significant unique contribution to explaining the variance in depressive symptoms. Stability made a non-significant contribution. While this non-significant finding is not entirely consistent with the literature, it has been reported elsewhere (Anderson & Arnoult, 1985b; Navarra, 1981: cited in Peterson & Seligman, 1984). In the present study, it is not immediately apparent why stability did not predict depression. One possible explanation may lie in the association between stability and hopelessness (τ = .173, p < .05). Of all the clinical measures, the distribution of hopelessness in the present sample appeared most positively skewed. This suggests that

the sample, as a whole, endorsed considerably lower levels of hopelessness than depression or anxiety. This is corroborated by the descriptive statistic that 86 percent scored in the minimal to mild range of hopelessness, versus 69 percent for anxiety, and 60 percent for depression. That the sample showed less hopelessness, a measure of negative attitudes about the future, may also have been evident in the tendency to attribute the causes of negative events to transient factors, rather than factors that will be present in the future. This hypothesis is further supported by the inverse correlation evident between stability for positive events and hopelessness ($\tau = -.209$, $p < .01$). Thus, decreasing levels of hopelessness are associated with an increasing tendency to attribute the causes of positive events to factors that are stable over time or likely to be present in the future. It is possible that maintaining hope and believing that the causes of negative events are not going to persist into the future is a vital part of adapting to prison life for many individuals who are incarcerated.

12.3.3 Attributional style and anxiety

Numerous studies have found that depressogenic attributional style for negative events is a non-specific diathesis for both depression and anxiety (Heimberg et al., 1989; Fresco et al., 2006; Luten et al., 1997; Reardon & Williams, 2007). This is hardly surprising given the high comorbity rates often observed between depression and anxiety (Alonso, 2004b). The hypothesis that attributional style for negative events would uniquely contribute to depression beyond the variance shared with anxiety was tested on the basis of the specificity of the reformulated learned helplessness model to depression. The finding that attributional style for negative events did not make a unique contribution in this case appeared contrary to the theory, but consistent with the aforementioned research. In a subsequent regression a more parsimonious attributional model comprising dimensions for both positive and negative events explained unique variance in depression while controlling for the contribution of anxiety. This finding suggests that attributional style, while perhaps representing a diathesis to the shared variance of different psychopathologies, namely anxiety and depression, in part has a unique association with depression when considered in the context of both negative and positive events. This highlights the importance of considering attributional style for positive events.

12.3.4 Uncontrollability attributions

The learned helplessness model and its reformulation regarded the perception and expectation of response-outcome independence (i.e. uncontrollability) as fundamental to the development of deficits associated with helplessness and depression. Many researchers have since argued for the inclusion of a measure of controllability when assessing attributional style in depression (Anderson et al., 1988; Brewin, 1991; Deuser & Anderson, 1995; Tennen & Affleck, 1991; Weiner, 1991). For example, Brown and Siegel (1988), and Sanjuan and Magallares (2009) have reported that the perception of uncontrollability is a crucial component of the association between attributional style and depression. At face value, the model of attributional style for negative events in the present study is not uniformly congruent with these findings. Analysis of the moderating effects of uncontrollability revealed non-significant contributions to the criterion of the cross product-terms of uncontrollability×internality and uncontrollability×stability. Significant moderation was evident for uncontrollability×globality, suggesting that the strength of relationship between globality and depression increased as perceptions of uncontrollability increased. Interestingly, both Brown and Siegel (1988), and Sanjuan and Magallares (2009) report their findings on the basis of the uncontrollability×composite interaction. Use of this additive composite has already been criticised in this thesis, and had therefore not been included in statistical analyses. For the purpose of comparison however, a post hoc analysis of the interaction between uncontrollability and the composite for negative events, comprising the sum of internality, stability, and globality for negative events, in predicting depression was conducted. Consistent with previous findings, the product-term of uncontrollability×composite added significantly to the variance in depression already explained by both variables in the first hierarchy (R^2 change = .042, β = .746, p < .05). Had the composite been employed in the initial statistical analyses this author may have concluded that the findings were consistent with previous research. This highlights the point that although Brown and Siegel (1988), and Sanjuan and Magallares (2009) reported that the uncontrollability×composite interaction supported the moderation hypothesis, it is unclear from their studies what, if any, interaction effect was evident at the individual dimensional level. Analysis of the individual dimensions in the present study revealed that uncontrollability did not appear to affect the relationship between internality and depression, and between stability and depression.

Thus, it appears that the condition of perceived uncontrollability may contribute to particular causal attributions, such as globality, predicting depression, but it is not a prerequisite to the attributional style depression relationship. This finding highlights the importance of considering the individual dimensions of attributional style over the composite.

The unique contribution of uncontrollability to predicting depression in an attributional model comprising all four dimensions for negative events was also analysed post hoc. The finding that uncontrollability failed to make a significant unique contribution (β = .205, p = .078) was again inconsistent with previous findings (Anderson & Arnoult, 1985b; Forsyth & McMillan, 1981: cited in Deuser & Anderson, 1995). It also appears ill-fitting with the finding that inmates with greater perceptions and expectations of control experience less distress and adjust better to imprisonment (MacKenzie, Goodstein, & Blouin, 1987). Prior to making conclusions about the apparent irrelevance of uncontrollability in predicting depression in the present sample, a point raised by Anderson and Deuser (1991) warrants consideration. They have argued that the uncontrollability dimension has been confounded by the other ASQ dimensions in studies of attributional style. Indeed, the parsimonious regression model described in this study revealed that perceived uncontrollability for negative events was actually important in predicting depression, when some of the less relevant dimensions were omitted. In building this model, a hierarchical regression equation was used to analyse the main effect of each predictor variable. This statistical approach, and the inclusion of four continuous predictor variables, did not facilitate analysis of the cross product term or interaction effect between these variables. Analysis of these interaction terms may have further elucidated the nature and role of uncontrollability, and may also have contributed further to the unexplained variance in depression. While the present model cannot clarify whether uncontrollability represents an underlying construct that subsumes any of the existing attributional dimensions, its contribution in the parsimonious model may be relevant to Anderson and Deuser's (1991) hypothesis. A factor analytic study would be required to test this. Nonetheless, it seems that perceptions of uncontrollability are relevant to a predictive model of depression in the context of attributions for negative and positive events.

12.3.5 Attributional style and hopelessness depression

This study sought to test the hopelessness theory's mediation hypothesis that the attributional dimensions for negative events, including the additional uncontrollability dimension, would predict significant variance in hopelessness depressive symptoms via the mediation pathway of hopelessness. The outcome of a sequence of regression equations supported the mediation hypothesis. In addition, the model held when the uncontrollability dimension was omitted. There is little evidence in the literature of any attempt to test this hypothesis using a measure of hopelessness and a specific symptom cluster from the BDI. The findings from the present study await corroboration or indeed disputation from future research.

12.4 Theoretical Implications

12.4.1 Internality attributions and hopelessness depression

In their original paper describing the hopelessness depression theory, Abramson et al. (1989) deemphasised internality, postulating that attributing negative life events to internal causes was not necessarily maladaptive or central to the development of depression. Since then, numerous studies have omitted the internality dimension to focus on a 'generality' composite composed of the stability and globality dimensions for negative events (Alloy et al., 2000; Haeffel et al., 2008; Moore & Fresco, 2007; Sturman, Mongrain, & Kohn, 2006). The generality composite has been adopted by the Cognitive Style Questionnaire (CSQ), a modified version of the original ASQ which parallels the hopelessness theory in considering the causes and consequences of events and implications for the self. However, the internality dimension does not feature in the attributional composite produced by the CSQ.

Contrary to the hopelessness theory, in the present study internality made a significant unique contribution to hopelessness ($\beta = .365$, $p < .01$), however stability and globality did not. In addition, internality was most impacted by the mediation pathway of hopelessness in predicting hopelessness depression. With respect to the present sample, the overall findings appear to reemphasise the importance of the internality dimension, for both positive and negative events, in predicting hopelessness and depression. For example, internality made the strongest significant contribution to the attributional models of depression above and beyond stability and globality. These findings are not exceptional in the literature. Seligman et al. (1979) found that, of the six attributional dimensions for positive and negative events, internality correlated most

significantly with the BDI (r = .41, p < .001). Similarly, Peterson, Bettes, & Seligman (1982) reported that the largest effect size for the attributional dimensions was evident between internality and depression. More recently, a factor analytic study has supported the construct of internality as a distinct attributional dimension, alongside stability and globality (Hewitt, Foxcroft, & MacDonald, 2004). These findings may have implications from a theoretical point of view, and suggest that internal attributions could yet have something to offer the hopelessness depression theory. Clearly, the present results require further support and clarification to have an impact. One potentially fruitful avenue for research is subsequently proposed.

12.4.2 The role of attributional style for positive events

The results from this study indicate that attributional style for positive events is related to depression, and indeed other aspects of psychopathology, such as hopelessness and anxiety. In attempting to build a parsimonious model of depression comprising attributional dimensions for both positive and negative events, a regression equation identified four significant predictors: internality and uncontrollability for negative events, and internality and globality for positive events. This combined four-dimensional model explained 35 percent of the variance in depression, compared to just 22 percent explained by the four attributional dimensions for negative events. In addition, the former made a significant and specific contribution to predicting variance in depression when the contribution of anxiety was controlled.

These findings have implications for the reformulation and hopelessness theories of depression, which have neglected, to some degree, the role of attributional style in the context of positive events, and how it relates to, and interacts with attributional style for negative events. For example, the consideration of attributional style for both positive and negative events may have theoretical implications for understanding a specific component of depression, not related to other psychopathologies, such as anxiety. This concept is supported by studies showing that attributional style can be a specific diathesis to depression when considering both positive and negative events (Alloy et al., 2000; Craighead & Kennedy, 1984).

Findings from the present study suggest that attributional style for positive events is not simply inversely related to attributional style for negative events, and likewise that depressogenic attributional style is not simply the inverse of enhancing attributional style. If they were measuring an identical underlying construct, such a

direct relationship would scarcely yield significant combined effects in predicting depression (Fresco et al., 2006). It seems that the nature of the association and interaction between attributional style for positive and negative events, although potentially quite relevant to our understanding of an attributional model of depression, has not been clearly elucidated. Evidence from the literature and the present study suggest that pursuing further this line of research could prove progressive from a theoretical point of view. The same might also be said for the dimension of uncontrollability.

12.5 Clinical Implications

Findings from the present study have a number of potentially relevant clinical implications. Firstly, depressogenic attributional style for negative events, specifically relating to internality and globality, contributes to depressive symptoms. It is also predictive of hopelessness depression via the mediation pathway of hopelessness. When attributional style is considered in the context of both positive and negative events, it makes a substantially increased contribution to depression and explains additional variance in depression beyond that already shared with anxiety. The dimension of uncontrollability also appears more relevant to depression in this context.

The hopelessness theory postulates that modifying a depressogenic attributional style could be an effective therapeutic strategy to restoring hopefulness and increasing resilience. Several studies have since reported that attributing positive events to internal, stable, and global causes is associated with recovery from depression and lower risk for relapse (Edelman, Ahrens, & Haaga, 1994; Needles & Abramson, 1990; Voelz, Haeffel, Joiner, & Wagner, 2003). In relation to the present sample, these findings suggest that providing a skill-set that facilitates individuals in modifying their depressogenic attributions for negative events, specifically internal, global, and uncontrollable attributions, could foster therapeutic gain. The particular relevance of the latter to the present sample is supported by evidence suggesting that increasing the perceived controllability of the environment in individuals who are incarcerated is associated with better adjustment and decreased levels of distress (Osgood et al., 1985; MacKenzie et al., 1987; McEwan, 1978). Additionally, promoting an enhancing attributional style for positive events, specifically relating to internal and global attributions, could facilitate similar gain.

'Self-Administered Optimism Training' represents a promising and potentially cost-efficient approach reducing the cognitive vulnerability of depressogenic attributional style (Fresco et al., 2009). The authors described a minimally supervised training programme in which participants, in this case university students, self-monitored daily positive and negative events. Participants were asked to list the best and worst event for each day over a four week period, assign a cause to each event, and subsequently rate each cause according to the attributional dimensions of internality, stability, and globality. Participants were subsequently instructed to provide a revised cause and make more adaptive attributions for each event. The results indicated that the training group, versus the control group, showed greater decreases in depressogenic attributional style, and this was associated with decreases in depression. The authors concluded that, although depression scores did not differ significantly between the groups, the cognitive diathesis vulnerability factor to depression was successfully altered. Since the impact of the diathesis (i.e. depressogenic attributional style) on depression is moderated by a stressful or negative event, according to the reformulation, and no such event was operationalised during this study, it is not surprising that depression scores were not significantly different. Importantly, and unlike the gain associated with many psychotherapeutic approaches, the gains evident in this study were independent of the positive contribution of the therapeutic relationship.

The Irish Prison Service has a moral and ethical responsibility to ensure that the mental health needs of prisoners are met. As economic pressures increase on State run institutions, it seems that hidden populations, such as prisoners, become increasingly vulnerable to service cuts. In this context, self-administered optimism training could provide a cost effective, albeit incomprehensive, method for the IPS Psychology Service to help low priority prisoners presenting with cognitive vulnerabilities to depression, while devoting greater time to prisoners presenting with more concerning psychological problems. It seems there may be potential clinical benefits to pursuing low cost, time efficient, self managed attributional based interventions.

12.6 Crime Relevant Implications

The reformulated model of learned helplessness and the hopelessness depression theory, to a lesser extent, imply that attributing negative events to external causes is adaptive to psychological well-being. Tennen and Affleck (1991) argue that the association between casual attributions and well-being may be too complex to conclude

that "externalising responsibility for bad events is universally adaptive" (p. 41). They elaborate by exemplifying the potential interpersonal costs of attributing the cause of negative events to external, transient, and specific factors in the case of a man who continues to commit serious and violent crimes. It appears that an 'enhancing attributional style' in these circumstances has negative implications for society since "no event has an internal, stable, global cause that would allow him to realise that he has a chronic problem that affects many areas of his life". Their argument seems quite relevant in the context of attributional style in the present sample.

It has been reported that making sense of one's criminal history is associated with successful desistance from crime in former offenders (Maruna, 2001; cited in Maruna, 2004). In offenders, attributing the causes of criminality to stable and intentional factors has been associated with psychological distress, whereas attributions that engender expectations of change for the better and attributions that deemphasise global personality deficits have been associated with enhancing self-esteem and pro-social behaviour (Braithwaite & Braithwaite, 2001). Maruna (2004) content-analysed the verbatim explanations (CAVE) offered by active and former offenders for the positive and negative events in their lives. A depressogenic attributional style for negative events was negatively associated with desistance from criminal behaviour, and an enhancing attributional style for positive events was positively associated with reform. These findings appear counterintuitive to the concerns expressed by Tennen and Affleck (1991). It may be that controllability attributions play a role in desistance. For example, attributing negative life events to internal, stable, and global characteristics that are essentially uncontrollable (e.g. "That's just the type of person I am", Maruna, 2004. p. 187) versus controllable (e.g. behavioural tendencies), may not engender expectations of change in active offenders. This may have important implications for the role of attributional reframing in the process of change for offenders. It is apparent that common sociological antecedents and risk factors, such as poverty, history of abuse, lower socioeconomic status, and lower levels of education, predispose criminal behaviour and depression. Maruna postulates that the process of desistance from crime, like recovery from depression, might involve the adaptation of depressogenic attributional thinking patterns.

12.7 Strengths and Limitations of the Present Study

12.7.1 Strengths

There were two noteworthy areas of strength in the present study. The first relates to the methodological scope and the theory driven hypotheses. A number of contentious issues have been raised throughout the evolution of the learned helplessness reformulation and the hopelessness depression theory. The present study sought to address a number of these issues that have largely been neglected by the literature. For example, perceptions of uncontrollability were central to the theory's understanding of helplessness deficits associated with depression, yet this important dimension has been overlooked by the majority of studies. Evidence from the present study suggests that uncontrollability may be relevant to an attributional model of depression in the prison population. This study also sought to avoid the methodological confounds of calculating an additive composite by considering individual attributional dimensions and their ability to make a distinct contribution to depression. Measures of anxiety and hopelessness were included to assess the specificity of an attributional model to predicting depression and to test the hopelessness theory's mediation hypothesis, respectively. The findings from the study have a number of potentially important implications for theory and practice.

The second noteworthy strength of this study is the context of the research and the clinically relevant population from which the sample was drawn. The majority of studies investigating the relationship between attributional style and depression, and indeed many of the seminal papers from which the theory has developed, have involved student samples. The continued use of such a specific population subset undoubtedly circumscribes the extent to which findings can be generalised to more clinically relevant samples. The association between attributional style and depression has rarely been investigated in prison samples. This is surprising, given the uncontrollable and aversive nature of the environment in which they are detained and the findings that individual differences are important in determining psychological well-being in prisoners. The results from this study suggest that attributional styles may be important to understanding some of the individual differences in, and vulnerabilities to depression in prison populations.

12.7.2 Limitations

There were a number of methodological limitations in the present study. Firstly, the employment of a cross-sectional design limited the theory testing abilities of the study. In testing the diathesis-stress interaction proposed by the reformulation and hopelessness theory, a number of studies referenced in this thesis have employed a longitudinal design. They follow a typical format in which attributional styles and depression are measured at time 1. Depression is usually measured again at time 2 following an operationalised or naturally occurring negative event. The results tend to show that, when controlling for depression scores at time 1, the cognitive diathesis (i.e. depressogenic attributional style) interacts with the stress (i.e. negative event) to predict changes in depression. A cross-sectional design does not facilitate the assessment of the diathesis-stress interaction. In addition, a negative event was neither operationalised nor measured in the present study.

The Attributional Style Questionnaire was developed in an attempt to standardise and quantify the measurement of people's habitual tendency to make particular types of attributions in explaining events. In the present study, it was apparent that a large proportion of participants experienced difficulty with the format and content of the ASQ. For example, many had trouble generating 'the one major cause' of the hypothetical events presented in the ASQ. However, when facilitated in 'explaining why' the event happened or instructed to follow each event with the word 'because' in coming up with a cause, most individuals were able to complete it. In addition many participants required instructions on how to use the likert scales in the ASQ since the instructions did not appear to adequately inform them how to do so. It appears that the ASQ could benefit from a revision to facilitate use with culturally and educationally diverse populations.

The reformulated learned helplessness model gave rise to the development of the ASQ and it has since been used in a variety of clinical, social, and attainment relevant contexts. While corresponding to the reformulation, the ASQ provides an incomprehensive measure of inferential styles postulated by the hopelessness theory. The hopelessness theory states that attributional style alone does not determine the type of attributions made in any given situation, but that social context, situational and interpersonal cues, and information based on the reality of the situation also influence these attributions. The concept of inferential style offers a broader perspective on the cognitive diathesis. The present study did not attempt to measure factors beyond

attributional style. In addition, the hopelessness depression theory hypothesises that attributions about the consequences and inferences about the self are relevant to predicting hopelessness depression. The aforementioned CSQ attempts to measure attributions about the causes, expectations about the consequences, and self-implications in response to negative events. The ASQ simply measures attributions about causes. On this point it may be important to note that the focus of the present study was attributional styles, rather than inferential styles. As such, this study may be less relevant to the hopelessness theory than to the reformulation. Nonetheless, the findings from the present study support the relevance of attributional style alone to the hopelessness theory.

The significance of attributional style to depression should not be overstated. It is a circumscribed, but nonetheless valuable, cognitive model. Depression itself is a heterogeneous disorder that interacts in a causal and dynamic way with biological states, psychological functioning, and social relationships (Akiskal & McKinney, 1975). Thus, it follows that an aetiological understanding of depression should incorporate biopsychosocial factors and offer explanations of interacting processes and functions. Findings from the present study suggest that attributional style may be an important cognitive variable associated with depressive symptoms in prisoners, and hence, that attributional change may be of value in managing these symptoms. This does not imply that an attributional model offers a sufficient or comprehensive explanation of depression in prisoners.

The prevalence and intensity of depressive symptoms is broad in the present sample. While attributional style accounts for a significant amount of variance in depression, there are undoubtedly other, unmeasured factors in this sample that make significant contributions. It is likely that alternative hypotheses about the development of depression in prisoners are relevant in this respect. Consider, for example, the potential roles of attachment, interpersonal style, and social rank. As noted in Chapter 8, an insecure attachment relationship in infancy can foster internal representations in which other people are seen as uncaring, inconsistent, unavailable, abusive, unpredictable, and so on. With few emotionally validating experiences, this person is likely to lack a sense of self-efficacy and feel unable, and even helpless, to manage emotional distress. He may seek validation from others, and in a prison environment, emotionally supportive relationships may not be frequently available. Prison is often a hostile and tense environment in which many prisoners feel the need to present a tough

and assured facade in order to avoid being exploited or oppressed, and to maintain position or rank in the social hierarchy. Prisoners with low social status are vulnerable to bullying (Ireland, 1999). From a social rank perspective, being bullied is plausibly a form of competitive loss, which is likely to trigger a prisoner's Involuntary Defeat Strategy (IDS). Repetitive and intensive activation of the IDS in response to threat and defeat could predispose symptoms of helplessness, which in turn could precipitate depressogenic attributions about negative events. The purpose of this example, while speculative, is to highlight the limitations inherent in considering, in isolation, a unidimensional perspective on the aetiology and maintenance of depression. The focus of the present study was a cognitive attributional model of depression. This should not necessarily be incongruent with other theoretical models. On the contrary, it seems progressive to attempt to integrate multidimensional perspectives in building an increasingly comprehensive understanding of the aetiological and maintaining mechanisms of depression in prisoners.

12.8 Future Research

The findings from the present study have generated a number of potentially important research questions. A number of studies are subsequently proposed to address these issues.

Firstly, the attributional dimension of internality is reemphasised by the present findings. The hopelessness theory hypothesises that negative inferences about self-worth in the context of a negative event are more important than internal attributions, per se, in predicting low self-worth and depression. The present study did not measure both internal attributions about the causes of negative events and negative inferences about the self, and was therefore unable to evaluate the significance of each in predicting depression. This theoretical issue could be further elucidated by future studies that employ hierarchical regression equations to establish whether one makes a significant contribution above the other, whether they share considerable variance, or whether they are each distinct constructs making unique contributions to depression and hopelessness depression. If this approach nullifies the unique contribution made by internality for negative events then there may be justification for its omission. The present findings suggest that internality is still relevant to attributional models of depression. It may also be useful to investigate whether uncontrollability consistently

contributes to depression across different samples and whether it merits inclusion in future revisions of the ASQ.

With regard to prison populations, there are two potentially valuable lines of research that may build on the findings from the present study. The first concerns a test of the diathesis-stress interaction in a longitudinal design with remand prisoners awaiting trial or sentencing. There is a large remand prison population in Ireland and the research indicates that they are particularly vulnerable to psychological and mental health problems, most notably depressive disorders (Linehan et al., 2005). The study should follow the format of the longitudinal designs above. Thus, a measure of general attributional style, a measure of casual attributions specific to their current circumstances, and a measure of depression are taken at time 1, before trial. In addition, participants' expectations about the potential consequences of the potentially negative event should be assessed. At time 2, following trial, participants that return to prison would be asked to again complete a measure of depression and a measure of their perceptions of the 'negative event'. The results should be analysed using hierarchical multiple regression to evaluate the diathesis-stress interaction and whether it contributes significantly to depression scores at time 2, when controlling for depression scores at time 1. This study could clarify whether attributional style plays a role in accounting for the increasing levels of depression and psychopathology evident in remand prisoners by including a control sample of sentenced prisoners.

Another potentially valuable study in relation to the prison population could operationalise a self-administered optimism training programme, as described by Fresco et al. (2009). This would be low-cost time-efficient endeavour that a student or trainee psychologist could pursue as a research project. It could yield important findings and have positive implications for managing the psychological well being of lower priority prisoners.

12.9 Conclusion

The aim of the present study was to examine the relationship between attributional style and depressive symptoms in a male prison sample. The findings suggest that an attributional model of depression may be relevant to this population and could provide a valid insight into the development and treatment of depressive symptoms in prisoners.

A number of clinical and theoretical implications were discussed in relation to the present findings. The internality dimension represented the strongest predictor in the attributional models of depression. This is incongruent with the hopelessness theory, which deemphasises internal attributions to consider negative inferences about the self. Future research is proposed to extrapolate the distinct contribution of each of these self-relevant variables in predicting depression and hopelessness depression. It may be that internal attributions are particularly relevant to prisoners, more so than university students and other normative samples. As such, this attributional dimension warrants further investigation within prison populations.

Uncontrollability, which was central to the original helplessness theory, has been overlooked by the research. The present findings suggest that it is relevant to future measures of attributional style. The potential importance of considering attributional style for positive events is evident in this study. In this regard, elucidating the association and interaction between attributional style for positive and negative events in predicting depression and understanding potential recovery pathways represents a promising avenue for future research.

The literature suggests that an enhancing attributional style may be important to recovery from depression and resilience in responding to negative life events. In addition, it has also been associated with desistance from crime in former offenders. It seems that many of the factors which predispose criminality are also relevant to our understanding of depression in the prison population. In this respect, improving our understanding of depressogenic and enhancing attributional styles becomes relevant not only for understanding and treating depression but also for understanding and facilitating change in cognitions that maintain criminality. These findings have positive implications for the use of attributional training and reframing with prisoners. To this end, self-administered optimism training represents a promising and cost-effective strategy to promoting an enhancing attributional style and reducing this cognitive vulnerability to depression.

The prevalence of mental disorder diagnoses and severity of associated symptoms in prisoners is indicative of the extent of the difficulties faced by this vulnerable population. In general, the mental health needs of this population are not well understood and have arguably not been sufficiently met. With increasing committals to Irish prisons over the past number of years, and with the associated increasing pressure on the system to accommodate these individuals, it is pertinent that

the issue of psychological well-being not be neglected. The IPS has committed to providing conditions and services appropriate to the well-being and personal development of prisoners and to minimising the detrimental effects of imprisonment. Group programmes, such as "Building Better Lives", exemplifies this commitment and emphasises the importance of having theory driven interventions and models to improve our understanding of the nature of psychological difficulties among prisoners. Findings from the present study indicate that further investigation into the role of attributional styles in depression, and examination of the potential benefits of attributional reframing may offer innovative strategies as part of the ongoing rehabilitative process.

REFERENCES

Abbey, J. G., Rosenfeld, B., Pessin, H., & Breitbart, W. (2006). Hopelessness at the end of life: The utility of the hopelessness scale with terminally ill cancer patients. *British Journal of Health Psychology, 11,* 173-183.

Abela, J. R. Z., Parkinson, C., Stolow, D., & Starrs, C. (2009). A test of the integration of the hopelessness and response styles theories of depression in middle adolescence. *Journal of Clinical Child and Adolescent Psychology, 38,* 354-364.

Abramson, L. Y., Dykman, B. M., & Needles, D. J. (1991). Attributional style and theory: Let no one tear them asunder. *Psychological Inquiry, 2*(1), 11-13.

Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. Psychological Review, 96, 358-372.

Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49-74.

Alford, B. A., Lester, J. M., Patel, R. J., Buchanan, J. P., & Giunta, L. C. (1995). Hopelessness predicts future depressive symptoms: A prospective analysis of cognitive vulnerability and cognitive content specificity. *Journal of Clinical Psychology, 51*(3), 331-339.

Alloy, L. B., & Clements, C. M. (1998). Hopelessness theory of depression: Tests of the symptom component. *Cognitive Therapy and Research*, *22*, 303–335.

Alloy, L. B., et al. (2000). The Temple-Wisconsin cognitive vulnerability to depression project: Lifetime history of Axis I psychopathology in individuals at high and low cognitive risk for depression. *Journal of Abnormal Psychology, 109,* 403-418.

Alloy, L. B., et al. (2001). Developmental origins of cognitive vulnerability to depression: Parenting, cognitive, and inferential feedback styles of the parents of individuals at high and low cognitive risk for depression. *Cognitive Therapy and Research, 25,* 397-423.

Alloy, L. B., Just, N., & Panzarella, C. (1997). Attributional style, daily life events, and hopelessness depression: subtype validation by prospective

variability and specificity of symptoms. *Cognitive Therapy and Research, 21*(3), 321-344.

Alloy, L. B., Peterson, C., Abramson, L. Y., & Seligman, M. E. P. (1984). Attributional style and the generality of learned helplessness. *Journal of Personality and Social Psychology, 46,* 681-687.

Alonso, J., et al. (2004a). Prevalence of mental disorders in Europe: results from the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatrica Scandanavica, 109*, 21-27.

Alonso, J., et al. (2004b). 12-Month comorbidity patterns and associated factors in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatrica Scandanavica, 109*, 28-37.

American Psychiatric Association (APA) (1994). *Diagnostic and statistical manual of mental disorders (Fourth Edition; DSM-IV.* Washington, DC: APA.

American Psychiatric Association (APA) (2000). *Diagnostic and statistical manual of mental disorders (Fourth Edition-Text Revision) DSM-IV-TR.* Washington, DC: APA.

Anderson, C. A. & Arnoult, L. H. (1985a). Attributional models of depression, loneliness, and shyness. In J. Harvey & G. Weary (Eds.), *Attribution: Basic Issues and Applications.* New York: Academic Press.

Anderson, C. A. & Arnoult, L. H. (1985b). Attributional style and everyday problems in living: Depression, loneliness, and shyness. *Social Cognition, 3*(1), 16-35.

Anderson, C. A. & Deuser, W. E. (1991). Science and the reformulated learned-helplessness model of depression. *Psychological Inquiry, 2*(1), 14-19.

Anderson, C. A., Jennings, D. L., & Arnoult, L. H. (1988). Validity and utility of the attributional style construct at a moderate level of specificity. *Journal of Personality and Social Psychology, 55,* 979-990.

Araya, R., Rojas, G., & Lewis, G. H. (1998). Common mental disorders, depression and mental health. *Revista Medica de Chile, 126,* 582-589.

Asner-Self, K. K., & Schreiber, J. B. (2004). A factor analytic study of the Attributional Style Questionnaire. *Measurement and Evaluation in Counseling and Development, 37*, 144-153.

Ayuso-Mateos, J. L., et al. (2001). Depressive disorders in Europe: prevalence figures from the ODIN study. *British Journal of Psychiatry, 179,* 308-316.

Barnett, P. A. & Gotlib, I. H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin, 104,* 97-126.

Baron, R. B. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Beautrais, A. L. (2000). Risk factors for suicide and attempted suicide among young people. *Australian and New Zealand Journal of Psychiatry, 34,* 420-436.

Beck, A. T, Riskind, J. H., Brown, G., & Steer, R. A. (1988). Levels of hopelessness in DSM-III disorders: A partial test of content-specificity in depression. *Cognitive Therapy and Research, 12,* 459-469.

Beck, A. T. (1967). *Depression: Causes and treatment.* Philadelphia: University of Pennsylvania Press.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders.* New York: International Universities Press.

Beck, A. T. (1978). *PDR Checklist.* University of Pennsylvania, Centre for Cognitive Therapy, Philadelphia.

Beck, A. T. (1982). *Situational Anxiety Checklist.* University of Pennsylvania, Centre for Cognitive Therapy, Philadelphia.

Beck, A. T., & Steer, R. A. (1987). *Manual for the revised Beck Depression Inventory.* San Antonio, TX: Psychological Corporation.

Beck, A. T., & Steer, R. A. (1988). *Beck Hopelessness Scale manual.* San Antonio, TX: The Psychological Corporation.

Beck, A. T., & Steer, R. A. (1990). *Manual for the Beck Anxiety Inventory.* San Antonio, TX: Psychological Corporation.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*(6), 893-897.

Beck, A. T., Steer, R. A., & Brown, G. (1996). *Manual for the Beck Depression Inventory-II.* San Antonio, TX: The Psychological Corporation.

Beck, A. T., Steer, R. A., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *American Journal of Psychiatry, 142*(5), 559-563.

Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The hopelessness scale. *Journal of Consulting and Clinical Psychology, 42*(6), 861-865.

Bernert, S., Matschinger, H., Alonso, J., Haro, J. M., Brugha, T. S., & Angermeyer, M. C. (2009). Is it always the same? Variability of depressive symptoms across six European countries. *Psychiatric Research, 168*, 137-144.

Blaney, P. H. (1977). Contemporary theories of depression: Critique and comparison. *Journal of Abnormal Psychology, 86,* 203-223.

Bonta, J. & Gendreau, P. (1990). Reexamining the cruel and unusual punishment of prison life. *Law and Human Behaviour, 14,* 347-372.

Braithwaite, J. & Braithwaite, V. (2001). Part four. In E. Ahmed, N. Harris, J. Braithwaite, & V. Braithwaite (Eds.), *Shame management through reintegration.* New York: Cambridge University Press.

Brewin, C. R. (1991). The social context of explanatory style. *Psychological Inquiry, 2*(1), 19-21.

Briggs, S. R. & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality,54,* 106-148.

Brown, G. W, & Harris, T. (1978). *Social origins of depression.* New York: Free Press.

Brown, J. D., & Siegel, J. M. (1988). Attributions for negative life events and depression: The role of perceived control. *Journal of Personality and Social Psychology, 54*(2), 316-322.

Bukstel, L. H. & Kilmann, P. R. (1980). Psychological effects of imprisonment on confined individuals. *Psychological Bulletin, 88,* 469-493.

Burgess, A., Davidoff, I., & Goff, V. (1999). *Investing in workplace productivity: Innovation in managing indirect mental health costs.* Washington Business Group on Health, National Institute of Mental Health, National Worksite Program.

Burhans, K. K., & Dweck, C. S. (1995). Helplessness in early childhood: The role of contingent worth. *Child Development, 66,* 1719-1738.

Calvete, E., Villardon, L., & Estevez, A. (2008). Attributional style and depressive symptoms in adolescents: An examination of the role of various indicators of cognitive vulnerability. *Behaviour Research and Therapy, 46,* 944-953.

Carmody, D. P. (2005). Psychometric characteristics of the Beck Depression Inventory-II with college students of diverse ethnicity. *International Journal of Psychiatry in Clinical Practice, 9,* 22-28.

Carr, A. & McNulty, M. (2006). *The handbook of adult clinical psychology: An evidence-based practice approach.* London: Routledge.

Carver, C. S. & Scheier, M. F. (1991). Unresolved issues regarding the meaning and measurement of explanatory style. *Psychological Inquiry, 2*(1), 21-24.

Carver, C. S. (1989). How should multifaceted personality constructs be tested? Issues illustrated by self-monitoring, attributional style, and hardiness. *Journal of Personality and Social Psychology, 56,* 577-585.

Carver, C. S., & Gaines, J. G. (1987). Optimism, pessimism, and postpartum depression. *Cognitive Therapy and Research, 11,* 449-462.

Cashin, A., Potter, E., & Butler, T. (2008). The relationship between exercise and hopelessness in prison. *Journal of Psychiatric and Mental Health Nursing, 15,* 66-71.

Clark, C., & Dugdale, G. (2008). *Literacy changes lives: The role of literacy in offending behaviour – a discussion piece.* London: National Literacy Trust.

Cochrane Review (2000). A national contract on mental health. *The Cochrane Library, 1,* 1-31. Oxford: Update Software.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). New York: Academic Press.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159.

Cohen, S., & Taylor, L. (1972). *Psychological survival.* Harmondworth: Penguin.

Cole, C. S., & Coyne, J. C. (1977). Situational specificity of laboratory induced learned helplessness. *Journal of Abnormal Psychology, 86,* 615-623.

Cole, D. A., et al. (2007). Early predictors of helpless thoughts and behaviours in children: Developmental precursors to depressive cognitions. *Clinical Child Psychology and Psychiatry, 12*(2), 295-312.

Cole, D. A., et al. (2008). Emergence of attributional style and its relation to depressive symptoms. *Journal of Abnormal Psychology, 117*(1)*,* 16-31.

Conti, D. J. & Burton, W. H. (1994). The economic impact of depression in a workplace. *Journal of Occupational Medicine, 36*, 983-988

Corr, P. J., & Gray, J. A. (1996). Structure and validity of the Attributional Style Questionnaire: A cross-sample comparison. *Journal of Psychology, 130*(6), 645-657.

Coyne, J. C. (1976). Toward an interactional description of depression. *Psychiatry, 39,* 28-40.

Coyne, J. C., & Gotlib, I. H. (1983). The role of cognition in depression: A critical appraisal. *Psychological Bulletin, 94,* 472-505.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16,* 297-334.

Curtin, K., Monks, S., Wright, B., Duffy, D., Linehan, S., & Kennedy, H. G. (2009). Psychiatric morbidity in male remanded and sentenced committals to Irish prisons. *Irish Journal of Psychiatric Medicine, 26*(4), 11-15.

De Ayala, R. J., Vonderharr-Carlson, D. J., & Doyoung Kim. (2005). Assessing the reliability of the Beck Anxiety Inventory scores. *Educational and Psychological Measurement, 65*(5), 742-756.

Departments of Public Health (2001). Suicide in Ireland: A national study. *Departments of Public Health.* Ireland.

Deuser, W. E. & Anderson, C. A. (1995). Controllability attributions and learned helplessness: Some methodological and conceptual problems. *Basic and Applied Social Psychology, 16,* 297-318.

Dozois, D. J. A., Covin, R., & Brinker, J. K. (2003). Normative data on cognitive measures of depression. *Journal of Consulting and Clinical Psychology, 71,* 71-80.

Dozois, D. J. A., Dobson, K. S., & Ahnberg, J. L. (1998). A Psychometric evaluation of the Beck Depression Inventory-II. *Psychological Assessment, 10,* 83-89.

Duffy, D., Linehan, S., & Kennedy, H. G. (2006). Psychiatric morbidity in the male sentenced Irish prison population. *Irish Journal of Psychological Medicine*, 23(2), 54-62.

Dumais, A., et al. (2005). Risk factors for suicide completion in major depression: A case-control study of impulsive and aggressive behaviours in men. *American Journal of Psychiatry, 162,* 2116-2124.

Durham, T. W. (1982). Norms, reliability, and item analysis of the hopelessness scale in general psychiatric, forensic psychiatric, and college populations. *Journal of Clinical Psychology, 38*(3), 597-600.

Dyce, J. A. (1996). Factor structure of the Beck Hopelessness Scale. *Journal of Clinical Psychology, 52*(5), 555-558.

Dyer, J. A. T. & Kreitman, N. (1984). Hopelessness, depression, and suicidal intent in parasuicide. *British Journal of Psychiatry, 143,* 609-617.

Dykman, B. M. (1998). Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach. *Journal of Personality and Social Psychology, 74,* 139-158.

Eaves, G., & Rush, A. J. (1984). Cognitive patterns in symptomatic and remitted unipolar major depression. *Journal of Abnormal Psychology, 93,* 31-40.

European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) (2006). *Report to the Government of Ireland on the visit to Ireland carried out by the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment.* Strasbourg: Council of Europe.

Evans, M. D., et al. (1992). Differential relapse following cognitive therapy and pharmacotherapy for depression. *Archives of General Psychiatry, 49,* 802-808.

Falissard, B., et al. (2006). Prevalence of mental disorders in French prisons for men. *BioMed Central Psychiatry, 33,* 1-6.

Farrokhi, H., Guilani, B., Zamani, R., Akbar Haddadi, A. (2006). Relation of coping style and attributional style with depression. *Psychological Research, 9,* 11-26.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analysis using G*Power 3.1: Tests for correlation and regression analyses. *Behaviour Research Methods, 41*(4), 1149-1160.

Fazel, S. & Danesh, J. (2002). Serious mental disorders in 23000 prisoners: A systematic review of 62 surveys. *The Lancet, 359,* 545-550.

Fazel, S., Bains, P., & Doll, H. (2006). Substance abuse and dependence in prisoners: A systematic review. *Addiction, 101,* 181-191.

Fennell, M. J. V. (1989) Depression. In K. Hawton, P. M. Salkovskis, J. Kirk, and D. M. Clark (Eds.), *Cognitive behaviour therapy for psychiatric problems: A practical guide.* Oxford: Oxford University Press.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: SAGE.

Fresco, D. M., Alloy, L. B., & Reilly-Harrington, N. (2006). *Journal of Social and Clinical Psychology, 25*(10), 1140-1159.

Fresco, D. M., Moore, M. T., Walt, L., & Craighead, L. W. (2009). Self-administered optimism training: Mechanisms of change in a minimally supervised psychoeducational internvention. *Journal of Cognitive Psychotherapy: An International Quarterly, 23,* 350-367.

Garber, J., & Flynn, C. (2001). Predictors of depressive cognitions in young adolescents. *Cognitive Therapy and Research, 25,* 353-376.

Gelder, M., Mayou, R., & Geddes, J. (2005). *Psychiatry (3rd Ed).* Oxford: Oxford University Press.

Gibb, B. E., Abramson, L. Y., & Alloy, L. B. (2004). Emotional maltreatment from parents, verbal peer victimisation, and cognitive vulnerability to depression. *Cognitive Therapy and Research, 28,* 1-21.

Gilbert, P., & Miles, J. N. V. (2000). Sensitivity to social put-down: It's relationship to perceptions of social rank, shame, social anxiety, depression, anger and self-other blame. *Personality and Individual Differences, 29,* 757-774.

Gillis, M. M., Haaga, D. A., & Ford, G. T. (1995). Normative values for the Beck Anxiety Inventory, Fear Questionnaire, Penn State Worry Questionnaire, and Social Phobia and Anxiety Inventory. *Psychological Assessment, 7,* 450-455.

Glass, D. C., & Singer, J. E. (1972). *Urban stress: Experiments on noise and social stressors.* New York: Academic Press.

Golin, S., Sweeney, P. D., & Shaeffer, D. E. (1981). The causality of causal attributions in depression: A cross-lagged panel correlational analysis. *Journal of Abnormal Psychology, 90*(1), 14-22.

Golin, S., Sweeney, P. D., & Shaeffer, D. E. (1981). The causality of causal attributions in depression: A crosslagged panel correlational analysis. *Journal of Abnormal Psychology, 90,* 14-22.

Goodstein, L. I., MacKenzie, D. L., & Shotland, R. L. (1984). Personal control and inmate adjustment to prison. *Criminology, 22,* 343-369.

Gotlib, I. H. (1991). Explanatory style: A question of balance. *Psychological Inquiry, 2*(1), 27-30.

Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioural Research, 26,* 499-510.

Greenberg, E., Dunleavy, E., Kutner, M., & White, S. (2007). *Literacy behind bars: Results from the 2003 National Assessment of Adult Literacy Prison Survey* (NCES 2007-473). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Gullone, E., Jones, T., & Cummins, R. (2000). Coping styles and prison experience as predictors of psychological well-being in male prisoners. *Psychiatry, Psychology, and Law, 7,* 170-181.

Haatainen, K., Tanskanen, A., Kylma, J., Honkalampi, K., Koivumaa-Honkanen, H., Hintikka, J., & Viinamaki, H. (2004). Factors associated with hopelessness: A population study. *International Journal of Social Psychiatry, 50*(2), 142-152.

Haeffel, G. J., et al. (2008). Measuring cognitive vulnerability to depression: Development and validation of the cognitive style questionnaire. *Clinical Psychology Review, 28,* 824-836.

Hall, R. C. W., Platt, D. E., & Hall, R. C. W. (1999). Suicide risk assessment: A review of risk factors for suicide in 100 patients who made severe suicide attempts. *Psychosomatics, 40,* 18-27.

Hamilton, E. W., & Abramson, L. Y. (1983). Cognitive patterns in major depressive disorder A longitudinal study in a hospital setting. *Journal of Abnormal Psychology, 92,* 173-184.

Hammen, C. (1991). Viewing the journey of explanatory style: A bystander's report. *Psychological Inquiry, 2*(1), 30-32.

Hammen, C. (1992). Cognitive, life stress, and interpersonal approaches to a developmental psychopathology model of depression. *Development and Psychopathology, 4,* 189-206.

Hammen, C. L., & Krantz, S. (1976). Effect of success and failure on depressive .cognitions. *Journal of Abnormal Psychology, 85,* 577-586.

Haslam, N., & Beck, A. T. (1994). Subtyping major depression: A taxometric analysis. *Journal of Abnormal Psychology*, *103*, 686–692.

Heimberg, R. G., Klosko, J. C., Dodge, C. S., Becker, R. E., & Barlow, D. H. (1989). Anxiety disorders, depression, and attributional style: A further test of he specificity of depressive attributions. *Cognitive Therapy and Research, 13,* 21-26.

Hewitt, A. K., Foxcroft, D. R., & MacDonald, J. (2004). Multitrait-multimethod confirmatory factor analysis of the attributional style questionnaire. *Personality and Individual Differences, 37,* 1483-1491.

Hewitt, P. L. & Norton, P. R. (1993). The Beck Anxiety Inventory: A psychometric analysis. *Psychological Assessment, 5,* 408-412.

Hiroto, D. S. (1974). Locus of control and learned helplessness. *Journal of Experimental Psychology, 102,* 187-193.

Hiroto, D. S., & Seligman, M. E. P. (1975). Generality of learned helplessness in man. *Journal of Personality and Social Psychology, 31*, 311-327.

International Centre for Prison Studies (2004). *Prison brief for Ireland.* London, International Centre for Prison Studies (http://www.prisonstudies.org)

Ireland, J. L. (1999). Bullying among prisoners: A review of research. *Aggression and Violent Behaviour, 5,* 201-215.

Irish Prison Service (2008). *Annual Report.* Longford: Department of Justice, Quality, and Law Reform. Downloaded from www.irishprisons.ie

James, D. J. & Glaze, L. E. (2006). *Mental health problems of prison and jail inmates.* Bureau of Justice Statistics Special Report, U.S. Department of Justice.

Jenkins, R. (1993). Mental health at work: Why is it so under-researched? *Occupational Medicine*, 65-67.

Johnson, J. G., Crofton, A., & Feinstein, S. B. (1996). Enhancing attributional style and positive life events predict increased hopefulness among depressed psychiatric inpatients. *Motivation and Emotion, 20,* 285-297.

Johnson, J. H., & McCutcheon, S. (1981). Correlates of adolescent pessimism: A study of the Beck Hopelessness Scale. *Journal of Youth and Adolescence, 10*(2), 169-172.

Joiner, T. E. (2001). Negative attributional style, hopelessness depression and endogenous depression. *Behaviour Research and Therapy, 39*, 139-149.

Joiner, T. E., Steer, R. A., Abramson, L. Y., Alloy, L. B., Metalsky, G. I., & Schmidt, M. B. (2001). Hopelessness depression as a distinct dimension of depressive symptoms among clinical and non-clinical samples. *Behaviour Research and Therapy, 39,* 523-536.

Kessler, R. C., Berglund, P., Demler, O., et al. (2003). The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). *Journal of the American Medical Association, 289,* 3095-3105.

Kistner, J. A., Ziegert, D. I., & Castro, R. (2001). Helplessness in early childhood: Prediction of symptoms associated with depression and negative self-worth. *Merrill-Palmer Quarterly, 47*(3), 336-354.

Klein, D. C., & Seligman, M. E. P. (1976). Reversal of performance deficits in learned helplessness and depression. *Journal of Abnormal Psychology, 85,* 11-26.

Kruijshaar, M. E., Barendregt, J., Vos, T., de Graaf, R., Spijker, J., & Andrews, G. (2004). Lifetime prevalence estimates of major depression: An indirect estimation method and quantification of recall bias. *European Journal of Epidemiology, 20*, 103-111.

Lakdawalla, Z., & Hankin, B. L. (2008). Personality as a prospective vulnerability to dysphoric symptoms among college students: Proposed mechanisms. *Journal of Psychopathology and Behavioural Assessment, 30,* 121-131.

Lau, J. Y. F., & Eley, T. C. (2008). Attributional style as a risk marker of genetic effects for adolescent depressive symptoms. *Journal of Abnormal Psychology, 117,* 849-859.

Leahy, R. L. & Holland, S. J. (2000). *Treatment plans and interventions for depression and anxiety disorders.* New York: Guilford Press.

Linehan, S. A., Duffy, D., Wright, B., Curtin, K., Monks, S., & Kennedy, H. G. (2005). Psychiatric morbidity in a cross-sectional sample of male remanded prisoners. *Irish Journal Psychological Medicine, 22*(4), 128-132.

Luten, A. G., Ralph, J. A., & Mineka, S. (1997). Pessimistic attributional style: Is it specific to depression versus anxiety versus negative affect? *Behaviour Research and Therapy, 35,* 703-719.

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomisation of quantitative variables. *Psychological Methods, 7,* 19-40.

MacKenzie, D. L., Goodstein, L. I., & Blouin, D. C. (1987). Personal control and prisoner adjustment: An empirical test of a proposed model. *Journal of Research in Crime and Delinquency, 24,* 49-68.

Maier, S. F., & Seligman, M. E. P. (1976). Learned helplessness: Theory and evidence. Journal of Experimental Psychology: General, 105, 3-46.

Maier, S. F., Peterson, C., & Schwartz, B. (2000). From helplessness to hope: The seminal career of Martin Seligman. In J. E. Gillham (Ed.), *The science of optimism and hope: Research essays in honour of Martin E. P. Seligman.* Wisconsin: Earlbaum.

Maier, S. F., Seligman, M. E. P., & Solomon, R. (1969). Pavlovian fear conditioning and learned helplessness. New York: Appleton-Century-Crofts.

Maruna, S. (2004). Desistance from crime and explanatory style: A new direction in the psychology of reform. *Journal of Contemporary Criminal Justice, 20,* 184-200.

Mason, D., Birmingham, L., & Grubin, D. (1997). Substance use in remand prisoners: a consecutive case study. *British Medical Journal, 3,* 18-21.

Metalsky, G. I., Abramson, L. Y, Seligman, M. E. P., Semmel, A., & Peterson, C. (1982). Attributional styles and life events in the classroom: Vulnerability and invulnerability to depressive mood reactions. *Journal of Personality and Social Psychology, 43,* 612-617.

Metalsky, G. I., Halberstadt, L. J., & Abramson, L. Y. (1987). Vulnerability to depressive mood reactions: Toward a more powerful test of the diathesis-stress and causal mediation components of the reformulated theory of depression. *Journal of Personality and Social Psychology, 52,* 386-393.

Mezulis, A. H., Hyde, J. S., & Abramson, L. Y. (2006). The developmental origins of cognitive vulnerability to depression: Temperament, parenting, and negative life events in childhood as contributors to negative cognitive style. *Developmental Psychology, 42,* 1012-1025.

Miles, J. N. V. & Shevlin, M. (2001). *Applying regression and correlation: a guide for students and researchers.* London: Sage.

Miller, W. R., *&* Seligman, M. E. P. (1975). Depression and learned helplessness in man. *Journal of Abnormal Psychology, 84,* 228-238.

Mills, J. F. & Kroner, D. G. (2005). Screening for suicide risk factors in prison inmates: Evaluating the efficiency of the Depression, Hopelessness, and Suicide screening form (DHS). *Legal and Criminological Psychology, 10,* 1-12.

Mohino, S., Kirchner, T., & Forns, M. (2004). Coping strategies in young male prisoners. *Journal of Youth and Adolescence, 33,* 41-49.

Morgan, M., & Kett, M. (2003). *The prison adult literacy survey: Results and implications*. Dublin: The Irish Prison Service.

Munton, A. G. (1985). Learned helplessness, attribution theory, and the nature of cognitions: A critical evaluation. *Current Psychology, 4,* 331-348.

Murphy, M., Harrold, M., Carey, S., & Mulrooney, M. (2000). *A survey of the level of learning disability among the prison population in Ireland.* Department of Justice Equality and Law Reform, Ireland.

Myers, R. (1990). *Classical and modern regression with applications* (2nd ed.). Boston, MA: Duxbury.

Needles, D. J. & Abramson, L. Y. (1990). Positive life events, attributional style, and hopefulness: Testing a model of recovery from depression. *Journal of Abnormal Psychology, 99,* 156-165.

Nezu, A. M., Nezu, C. M., & Nezu, V. A. (1986). Depression, general distress, and causal attributions among university students. *Journal of Abnormal Psychology, 95*(2), 184-186.

NiEidhin, M., Sheehy, N., O'Sullivan, M., & McLeavey, B. (2002). Perceptions of the environment, suicidal ideation, and problem-solving deficits in an offender population. *Legal and Criminological Psychology, 7, 187-201.*

Office of the Inspector of Prisons (2008). *Annual Report.* Downloaded from www.irishprisons.ie

Olinger, L. J., Kuiper, N. A., & Shaw, B. F. (1987). Dysfunctional attitudes and stressful life events: An interactive model of depression. *Cognitive Therapy and Research, 11,*25-40.

Osgood, D., Gruber, W.E., Archer, M. A., & Newcomb, T. M. (1985). Autonomy for inmates: counterculture or cooptation. *Criminal Justice and Behaviour, 12,* 71-89.

Overmier, J. B. (1968). Interference with avoidance behavior: Failure to avoid traumatic shock. Journal of Experimental Psychology, 78, 340-343.

Overmier, J. B. (2002). On learned helplessness. *Integrative Physiological and Behavioural Science, 37,* 4-8.

Overmier, J. B., & Leaf, R. C. (1965). Effects of discriminative Pavlovian fear conditioning upon previously or subsequently acquired avoidance responding. Journal of Comparative and Physiological Psychology, 60, 213-217.

Overmier, J. B., & Seligman, M. E. P. (1967). Effects of inescapable shock on subsequent escape and avoidance behavior. Journal of Comparative Physiology and Psychology, 63, 23-33.

Pallant, J. (2001). *SPSS survival manual: A step by step guide to data analysis using SPSS for Windows (Version 10).* Philadelphia: Open University Press.

Palmer, E. J. & Connolly, R. (2005). Depression, hopelessness and suicide ideation among vulnerable prisoners. *Criminal Behaviour and Mental Health, 15,* 164-170.

Palmer, E. J., & Binks, C. (2008). Psychometric properties of the Beck Depression Inventory-II with incarcerated male offenders aged 18-21 years. *Criminal Behaviour and Mental Health, 18,* 232-242.

Patel, V. (2007). Mental health in low- to middle-income countries. *British Medical Bulletin, 81,* 81-96.

Peterson, C. & Villanova (P. (1988). An Expanded Attributional Style Questionnaire. *Journal of Abnormal Psychology, 97,* 87-89.

Peterson, C. (1991). Meaning and measurement of explanatory style. *Psychological Inquiry, 2*(1), 1-10.

Peterson, C., & Seligman, M. E. P. (1981). Helplessness and attributional style in depression. *Tiddsskrift for Norsk Psykologforening, 18,* 53-59.

Peterson, C., & Seligman, M. E. P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review, 91*(3). 347-374.

Peterson, C., Semmel, A., von Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The Attributional Style Questionnaire. *Cognitive Therapy and Research, 6,* 287-300.

Price, J. S. (1967). Hypothesis: the dominance hierarchy and the evolution of mental illness. *Lancet, 2,* 243-246.

Ralph, J. A. & Mineka, S. (1998). Attributioanl style and self-esteem: The prediction of emotional distress following a midterm exam. *Journal of Abnormal Psychology, 107,* 203-215.

Reardon, J. M. & Williams, N. L. (2007). The specificity of cognitive vulnerabilities to emotional disorders: Anxiety sensitivity, looming vulnerability and explanatory style. *Journal of Anxiety Disorders, 21,* 625-643.

Rholes, W. S., Riskind, J. H., & Neville, B. (1985). The relationship of cognitions and hopelessness to depression and anxiety. *Social Cognition, 3,* 36-50.

Riskind, J., Beck, A. T., Brown, G., & Steer, R. A. (1987). Taking the measure of anxiety and depression: Validity of the reconstructed Hamilton scales. *Journal of Nervous and Mental Disease, 175, 474-479.*

Rizley, R. (1978). Depression and distortion in the attribution of causality. *Journal of Abnormal Psychology, 87,* 32-48.

Rodin, J. (1976). Density, perceived choice, and response to controllable and uncontrollable outcomes. *Journal of Experimental Social Psychology, 12,* 564-578.

Roth, S., & Kubal, L. (1975). Effects of noncontingent reinforcement on tasks of differing importance: Facilitation and learned helplessness. *Journal of Personality and Social Psychology, 32,* 680-691.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, *81*(1), Whole No. 609.

Sanjuán, P., & Magallares, A. (2009). A longitudinal study of the negative explanatory style and attributions of uncontrollability as predictors of depressive symptoms. *Personality and Individual Differences, 46,* 714-718.

Sanjuán, P., Pérez García, A., Ruiz, M. A., & Rueda, B. (2008). Interactive effects of attributional styles for positive and negative events on psychological distress. Personality and Individual Differences, 45, 187–190.

Schill, R. A. & Marcus, D. K. (1998). Incarceration and learned helplessness. *International Journal of Offender Therapy and Comparative Criminology, 42,* 224-232.

Schulman, P., Castellon, C., & Seligman, M. E. P. (1989). Assessing explanatory style: The content analysis of verbatim explanations and the attributional style questionnaire. *Behaviour Research and Therapy, 27,* 505-512.

Seligman, M E. (1972). Learned helplessness. *Annual Review of Medicine*, 1972, 207–412.

Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death.* San Francisco: Freeman.

Seligman, M. E. P., & Maier, S. F. (1967). Failure to escape traumatic shock. Journal of Experimental Psychology, 74, 1-9.

Seligman, M. E. P., Abramson, L. Y., Semmel, A., & von Baeyer, C. (1979). Depressive attributional style. *Journal of Abnormal Psychology, 88,* 242-247.

Shaw, B. J. (1977). Comparison of cognitive therapy and behavior therapy in the treatment of depression. *Journal of Consulting and Clinical Psychology, 45,*543-551.

Shinkfield, A.J., Graffam, J., & Meneilly, S. (2009). Co-morbidity of conditions among prisoners. *Journal of Offender Rehabilitation, 48,* 350-365.

Silver, R. L., Wortman, C. B., & Klos, D. S. (1982). Cognitions, affect, and behavior following uncontrollable outcomes: A response to current human helplessness research. *Journal of Personality, 50,* 480-514.

Singleton, N., Meltzer, H., & Gatward, R. (1997). *Psychiatric morbidity among prisoners: Summary report.* UK Department of Health: Government Statistical Service.

Sirdifield, C., Gojkovic, D., Brooker, C., & Ferriter, M. (2009). A systematic review of research on the epidemiology of mental health disorders in prison populations: A summary of findings. *Journal of Forensic Psychiatry and Psychology, 20,* 78-101.

Sloman, L. (2008). A new comprehensive evolutionary model of depression and anxiety. *Journal of Affective Disorders, 106,* 219-228.

Sloman, L., Gilbert, P., & Hasey, G. (2003). Evolved mechanisms in depression: The role and interaction of attachment and social rank in depression. *Journal of Affective Disorders, 74,* 107-121.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Sprinkle, S. D., Lurie, D., Insko, S. L., Atkinson, G., Jones, G. L., Logan, A. R., & Bissada, N. N. (2002). Criterion validity, severity cut scores, and test-retest reliability of the Beck Depression Inventory-II in a University Counseling Centre Sample. *Journal of Counseling Psychology, 49*(3), 381-385.

SPSS Inc. (2006). *SPSS Base 15.0 for Windows User's Guide*. SPSS Inc., Chicago IL.

Sroufe, L. A. (1991). Considering normal and the abnormal together: The essence of developmental psychology. *Developmental Psychopathology, 2,* 335-347.

Steed, L. (2001). Further validity and reliability evidence for Beck Hopelessness Scale scores in a nonclinical sample. *Educational and Psychological Measurement, 61*(2), 303–316.

Steer, R. A., & Clark, D. A. (1997). Psychometric characteristics of the Beck Depression Inventory-II with college students. *Measurement and Evaluation in Counseling and Development, 30,* 128–136.

Steer, R. A., Rismiller, D. J., & Beck, A. T. (2000). Use of the Beck Depression Inventory-II with depressed geriatric inpatients. *Behavior Research and Therapy, 38,* 311–318.

Stotland, E. (1969). *The psychology of hope.* San Fransisco, CA: Jossey-Bass.

Sturman, E. D., Mongrain, M., & Kohn, P. M. (2006). Attributional style as a predictor of hopelessness depression. *Journal of Cognitive Psychotherapy: An International Quarterly, 20,* 447-458.

Sweeney, P. D., Anderson, K., & Bailey, S. (1986). Attributional style in depression: A meta-analytic review. *Journal of Personality and Social Psychology, 50,* 974-991.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics (3rd ed.).* New York: Harper Collins.

Taylor, A. J. W. (1961). Social isolation and imprisonment. *Psychiatry*, *24,* 373-376.

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin, 103,* 193-210.

Tennen, H. & Affleck, G. (1991). The meaning and measurement of explanatory style: Unresolved issues. *Psychological Inquiry, 2*(1), 39-43.

Voelz, Z. R., Haeffel, G. J., Joiner, T. E., & Wagner, K. D. (2003). Reducing hopelessness: The interation of enhancing and depressogenic attributional styles for positive and negative life events among youth psychiatric inpatients. *Behaviour Research and Therapy, 41,* 1183-1198.

Watson, D. A., Clarke, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97,* 346-353.

Weiner, B. (1974). *Achievement motivation and attributional theory*. Morristown, NJ: General Learning Press.

Weiner, B. (1991). An attributional look at explanatory style. *Psychological Inquiry, 2*(1), 43-44.

Wetzel, R. D., Margulies, T., Davies, R., & Karam, E. (1980). Hopelessness, depression, and suicide intent. *Journal of Clinical Psychiatry, 41,* 159-160.

Whisman, M. A. & Pinto, A. (1997). Hopelessness depression in depressed inpatient adolescents. *Cognitive Therapy and Research*, *21*, 345–358.

Wilson, K. A., de Beurs, E., & Chambless, D. L. (2004). The Beck Anxiety Inventory. In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment: Vol. 2. Instrumentation for adults and future directions*. (3rd ed, pp. 399-420). Mahwah, NJ: Lawrence Erlbaum Associates.

World Health Organisation (WHO) (1992). *The ICD-10 classification of mental and behavioural disorders*. Geneva: WHO.

World Health Organisation (WHO) (2000). *Mental health and work: Impact, issues, and good practices*. Geneva: WHO.

World Health Organisation (WHO) (2004). *Highlights on health in Ireland*. Geneva: WHO.

World Health Organisation (WHO) (2005a). *Mental health atlas*. Geneva: WHO.

World Health Organisation (WHO) (2005b). *The economics of mental health in Europe.* WHO European Ministerial Conference on Mental Health. Helsinki: WHO.

World Health Organisation (WHO) (2009). *The European health report: Health and health systems*. Geneva: WHO.

Wright, K. N. (1991). A study of individual, environmental, and interactive effects in explaining adjustment to prison. *Justice Quarterly, 8,* 217-242.

Young, M. A., Halper, I. S., Clark, D. C., Scheftner, W., & Fawcett, J. (1992). An item-response theory evaluation of the Beck Hopelessness Scale. *Cognitive Therapy and Research, 16*(5), 579-587.

Zuckerman, M., & Lubin, B. (1965). *Manual for the Multiple Affect Adjective Check List.* San Diego, CA: Educational and Industrial Testing Service.

Zullow, H. M. (1991). Explanations and expectations: Understanding the "doing" side of optimism. *Psychological Inquiry, 2*(1), 45-49.