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THE INFLUENCE OF NEUROPSYCHOLOGICAL PROCESSES ON CRIMINAL ACTIONS

by

DAVID FOLEY

A thesis submitted to the University of Huddersfield

in partial fulfilment of the requirements for

the degree of Doctor of Philosophy

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ABSTRACT

Introduction: The aim of this study was to consider the influence of neuropsychological processes on criminal actions. Utilising the Narrative Action System (NAS) the motivation for offending behaviour is seen as indicative of the criminal perception of self, identity, and role acted out in committing of their offence. The NAS categorises criminals into four action roles: Hero, Revenger, Victim, and Professional. Sensitivity to neurological responses to appetitive and adverse stimuli through activating or inhibiting behaviour within the criminal actions roles are examined using constructs of Reinforcement Sensitivity Theory (RST) behaviour inhibition system (BIS) and behaviour approach system (BAS).

Methodology: A sample of 256 Irish offenders completed a Reinforcement Sensitivity Theory BIS/BAS scale used to measure behaviour activation and inhibition response to appetitive and adverse stimuli. The sample also completed the Narrative Roles Questionnaire (NRQ) to determine their perceived offence action role.

Results: This study found that correlation between the neurological processes activated by adverse or appetitive stimuli and the criminal action roles was not significant and could not be relied upon to provide predictive or explanatory information on the motivated behaviour of the criminal roles.

Conclusion: The findings indicate that the NAS criminal action roles are dynamic, whereby the offender's behaviour is motivated by external stimuli and activated neurological processes during their offence. Criminal action was found to be episodic, with behaviour determined by neurological processes rather than the criminal's perceptions of self and role. Therefore, the criminal role, and motivated behaviour, is depended on external stimuli and will change when exposed to alternative stimuli.

Dedication

For my little man and my princess, who remind me every day about what's really important. And for Siobhán, you make everything possible.

I love you more than all the words in the world.

Acknowledgements

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Contents

Abstract 2
Acknowledgements 4
Contents Page 5
List of Tables 9
List of Figures 9
Abbreviations 10

Chapter One INTRODUCTION 12

Chapter Two LITERATURE REVIEW 18
Neuropsychological Theories 18
Eysenck's Biosocial Theory 21
Reinforcement Sensitivity Theory 26
Reinforcement Sensitivity Theory (Revised) 32
The Function and Structure of the Brain 33
Reinforcement Sensitivity Theory's Neurological Position 36
Neurological Functions and the Behaviour Inhibition and Behaviour Activation Systems 40
Reinforcement Sensitivity Theory's Neurophysiological Framework 43
The Relationship between the BIS and BAS and Neurophysiological and Neurocognitive Systems 45
Development of BIS/BAS Scales 48
Identity: An Overview 52
Theoretical Concepts of a Criminal Identity 54
Narratives and Narratology 57
Narrative Approaches to Identity 62
Dominant Narratives 64
The Theory of Mythoipage 69
The Narrative Action System (NAS) 72
Hero 77
Revenger 77
Victim 78
Professional 78
The Challenges in Defining Narrative Identity 79
The Challenges of Researching Prison

		Populations	85
		Ethical Considerations when Conducting Research in Prisons	89
		Background and Theoretical Context for the Research Study	91
		Rationale for this Research	93
		Research Aim and Objective of the Study	94
Chapter Three	METHODOLOGY		96
		Study design	96
		Ethical Approval	97
		Accessing the sample	98
		Overview of the Irish Prison Service	100
		Irish prison population	101
		Research Sites	103
		Mountjoy Prison	104
		Limerick Prison	104
		Midlands Prison	104
		Loughan House	105
		Shelton Abbey	105
		Irish Prisons: Operational Considerations	105
		Temporal Issues	107
		Entering Prison – Practical Procedures	108
		Psychological Services within the Irish Prison Service	109
		Sampling Approach and Selection	110
		Participants	111
		Overview of the Measures	112
		Summary of the BIS/BAS Scale	114
		Summary of Narrative Roles Questionnaire	114
		Pilot Test of Combined Questionnaire	116
Chapter Four	RESULTS		121
		Data Screening	123
		Reliability Analysis	124
		Inter-Scale Correlations	127
		Analysis of Narrative Roles Questionnaire	129
		Reliability Analysis	129
		Data Screening	132
		Analysis of the Combined BIS/BAS Scale and	

The Narrative Roles Questionnaire 133
Examination of Individual Selections On
BIS/BAS and NRQ Scales by the Participants 136
Comparing NRQ Role Findings with
Youngs and Canter (2012) 138
Exploration of Hybrid Narrative Roles 141
General Discussion 143

Chapter Five DISCUSSION AND CONCLUSIONS 148
Introduction 148
Uniqueness of The Study 149
Discussion on The Findings from the
Behaviour Inhibition System/Behaviour
Approach System Scales 150
Findings from The Narrative Roles Questionnaire 151
Conceptually Defining The 'Undefined' 152
Jung's Shadow 154
The Differentiation of Agency And
Communion 158
Situating the Shadow Within Frye's
Theory of Mythoi 162
The Conceptualised Traits of The
Criminal Narrative Role: The Shadow 166
Conclusion 171

Findings from the Integration of The Narrative
Roles Questionnaire and The Behaviour Inhibition
System/Behaviour Approach System Scales. 172
BIS Anxiety 174
BIS Fear 174
BAS Drive 174
BAS Fun Seeking 175
BAS Reward Responsiveness 175
Hero 175
Victim 176
Revenger 176
Professional 176
Application of the Conceptual Categorisations 177
Theoretical Implications of the Research 180
Comments on The Criminal Narrative

Experience (CNE) and the Current Findings 181
Practical Implications for the Narrative
Action System 183
Potential for Future Research 188
Conclusion 189

References 191
Appendices 221

List of Tables

Table 3.1	List of Prisons in the Irish Prison Service estate	100
Table 3.2	Nationality groups in custody under sentence in 2017	101
Table 3.3	Age profile of prisoners in custody under sentence in 2017	102
Table 3.4	Sentence duration of prison population in 2017	102
Table 3.5	Ethnicity of the sample	112
Table 3.6	Conviction history of sample.	113
Table 3.7	Recorded Crime Offences (%) by Type of Offence and Year and findings (%) of current study	113
Table 4.1	Results of principal components analysis with sample (n=256) using oblimin rotation	126
Table 4.2	BIS/BAS inter-scale correlations (Spearman's Rho)	127
Table 4.3	Internal consistency, means, modes, and standard deviations in the sample.	128
Table 4.4	Results of the principle components analysis with sample (n=256) using varimax rotation	130
Table 4.5	Outliers influence on Data mean and standard deviation	133
Table 4.6	BIS/BAS & NRQ correlations (Spearman's Rho)	134
Table 4.7	Correlation between Gray's (1984) original two factor BIS/BAS (Spearman's Rho)	135
Table 4.8	Correlation between Carver & White's (1994) model using Spearman's Rho	136
Table 4.9	Integration of BAS/BIS and NRQ roles as selected by participants	137
Table 4.10	Ioannou et al., (2017), Themes of emotions and narrative roles (narrative roles are in parentheses)	140
Table 4.11	NRQ inter-item correlations (Spearman's Rho)	141
Table 4.12	Classification of NRQ cases by percent	143
Table 5.1	Frye's Phases of Mythoi. With overlapping tragedy and romance phases highlighted.	163

List of figures

Fig. 2.1.	Conceptual diagram of BAS and BIS/FFFS and Eysenck's N, E, & P.	24
Fig 2.2	The Theory of Mythoi	72

List of abbreviations

ACC	Anterior Cingulate Cortex
ADHD	Attention Deficit Hyperactivity Disorder
BAS	Behaviour Approach System
BAS Drv	BAS Drive
BAS FS	BAS Fun Seeking
BAS RR	BAS Rewards responsiveness
BIS	Behaviour Inhibition System
BIS Anx	BIS Anxiety
CNE	Criminal Narrative Experience
CNS	Central Nervous System
DI	Dysfunctional Impulsivity
EEG	Electroencephalograph
EFPA	European Federation of Psychologists Associations
FFFS	Fight/Flight/Freeze System
FFS	Fight/Flight System
FI	Functional Impulsivity
IPS	Irish Prison Service
MRI	Magnetic Resonance Imaging
NAS	Narrative Action System
NRQ	Narratives Role Questionnaire
PBREBC	Prisoner Based Research Ethics Board Committee
PET	Positron-Emission Tomography
PFC	Prefrontal Cortex
PSRG	Probation Services Research Group
RAP	Research Advisory Panel
RST	Reinforcement Sensitivity Theory
rRST	Revised Reinforcement Sensitivity Theory
RST	Reinforcement Sensitivity Theory
SREP	School Research Ethics Panel
VTA	Ventral Tegmental Area

Chapter One

INTRODUCTION

Intrinsic and extrinsic motivational stimuli can be seen as appetitive and aversive stimuli which activates behaviours within the person to either approach or avoid reward or punishment. Behavioural psychology suggests that rewards can increase behaviour which is activated to achieve positive outcomes for the person; or to avoid expected punishment or adverse outcomes. In contrast, the person will seek to avoid punishment and engage in behaviours which are protective and activated to evade negative outcomes. Frustrative non-reward is also considered punishment and is experienced by the person through the unavailability or unattainability of expected rewards. Appetitive stimuli can be seen as stimuli that activates approach behaviours towards goals or away from punishment; while aversive stimuli are those that triggers behaviours to avoid punishment or hinder progress towards a goal. The approach/avoidance behaviours evoked by appetitive and aversive stimuli have also been associated with activating related emotions. Where the individual can move towards attaining their goal, emotions, reactions of hope, optimism, and confidence can be present; while relief and alleviation can be felt when punishment is avoided. Alternatively, when punishment stimuli are present the individual may feel fearful or apprehensive; while the removal of potential reward or hindrance towards goals can lead to anger, frustration, and feelings of victimisation.

Eysenck's personality theory (1965) proposed a relationship between a person's response to environmental stimuli and neurological functioning. He attempted to explain maladaptive behaviours, including criminal behaviours, through understanding the person susceptibility to the adverse consequences of Pavlovian conditioning. Eysenck's theories were the foundations of Gray's Reinforcement Sensitivity Theory (RST) which proposed the existence of two motivation/emotional instigators of behaviour and examined the influence of approach – avoidance processes on behaviour and personality traits

Gray (1970) identified these instigators as the behaviour inhibition system (BIS) and behaviour approach system (BIS); and he concluded these processes characterised functions of neuropsychological activity and motivational states, which in turn evoke associated physiological and psychological states for the person. He further proposed that within these neuropsychological processes, personality traits are developed and maintained, and can be predictive of the person's behavioural and emotional response to appetitive and adverse stimuli (DeYoung, 2010). Gray's Reinforcement Sensitivity Theory (RST) continues to be one of the most influential neuropsychological models of personality used within current research in the area (Segarra, Poy, López and Moltó, 2014).

Support for the integration of biological and sociological theories to assist in explaining human behaviour and functioning has been increasing; and in the field of criminology extensive research has been conducted looking at the relevance of

biosocial influences on criminal behaviour. However, where biosocial theories have been integrated into criminology, it has predominately been done when considering precursors to criminal behaviour; such as, cognitive functioning or addiction.

Nevertheless, criminology and neuroscience research has advanced substantially over recent decades, and these advances have allowed for a more significant, and ethical, investigation incorporating biosocial theories and behaviour. The dual consideration of neuropsychological and sociological influences on the person has the potential to provide a deeper understanding of the offender and their criminal actions

Research on neurological functioning is a vibrant field with increasingly more medical and technological advancements, (see Finnema et al., 2016) assisting researchers explore the brain and understand its complex processes. According to Cicchetti (2010) the benefits of this understanding can not only lead to better interventions to prevent crime; but neuropsychological and neurophysiological research can aid criminologists in comprehending criminal behaviour from an 'organic' (Small, 1966) or biological perspective (Gao et al., 2012)

Within criminology, neuropsychological research provides an opportunity to gather data using inexpensive, non-invasive and easily administered methodologies (Gao et al., 2012; Portnoy, Chen, & Raine, 2013) such as self-report questionnaires assessing executive functioning (Broomhall, 2005); or more medically orientated methodologies, but still non-invasive procedures, such as Positron-emission

tomography (PET), electroencephalograph (EEG), magnetic resonance imaging (MRI) or single-photon emission computed tomography (Bufkin & Luttrell, 2016). Information from neuroimaging sources may be available where comorbidity exists, such as concerns regarding criminal behaviour and genetic disorders, cognitive functioning, substance misuse, and head injury. Where comorbid conditions are not thought to exist, MRI scans have also been completed to understand behavioural disorders and psychopathic traits (Bellani, Garzitto, & Brambilla, 2012; Pu et al., 2017). With regard to structure and functioning of the brain, significant research has been completed using neuroimaging to examine differences between neurological processes in criminal and non-criminal populations (Wilson & Scarpa, 2012).

The current study examines the roles criminals perceive of themselves during criminal actions, through their narrative expression and understanding of their identity and life story (McAdam, 1985). The characteristics of the criminal narrative roles, as proposed by Youngs and Canter, (2012), is examined for susceptibility to the motivational neuropsychological influences identified through the Reinforcement Sensitivity Theory. This study combines the Narrative Action System and Reinforcement Sensitivity Theory to gain a better understanding of the motivation of different criminal role types, from a combined psychological and neuropsychological viewpoint.

According to McAdams and McLean (2013) narrative identity is an internalised life story which is constructed and reconstructed through the person's abilities for

psychological adaptation and development. The researchers suggested that narrative identity formation begins in adolescence, when the person can provide a reasoned story; through incorporating thematic coherence of their life experiences. McAdams (1985) found that narrative identity was necessary to allow the person to develop their life story. However, it is proposed that the development of a narrative identity in itself, whereby the person internalises perceptions of the self, and the world within which the live, can activate or inhibit appetitive or avoidance behaviours and therefore, influence neuropsychological functioning and neurochemical processes.

Canter, Kouri and Ioannou (2003) incorporated the concept of narrative identity into an investigative psychological framework of research to examine the relationship between the criminal's concept of self and their criminal actions. They considered narratives as an integral part of a person identity; and examined how the expression of narratives, the communicating of their story, can provide insight into the person. The Narrative Action System identified four dominant narratives provided by criminals in recounting the roles activated during their criminal behaviours. These roles are; *Professional*, *Revenger*, *Hero*, and *Victim*. Canter, et al., (2003) structured the thematic structure of the Narrative Action System, and the four roles, on the linguistic framework narrative archetypes identified by Frye (1957).

The current study investigates the relationship between the Reinforcement Sensitivity Theory (RST), and criminal roles as defined by the Narratives Action System (NAS). The theoretical frameworks provided by the RST and NAS allows for

exploration into correlations between criminal roles, identified by the NAS and neurological processes of behavioural inhibition and activation outlined in Reinforcement Sensitivity Theory. The rationale for exploring identity formation and the concept of self in this context is evident throughout the study as demonstrated by the intertwining models of narrative identity, life stories, and criminal narratives, which are being considered.

Chapter Two

LITERATURE REVIEW

Neuropsychological Theories

The study of criminal behaviour continues to be intriguing and challenging for multiple disciplines, and this has led to a wealth of theories offering explanations on the criminal, their behaviour, their motivation, and crime prevention (to name a few) However, criminologists continue to place emphasis on environmental factors when explaining criminal behaviours rather than looking at the personality traits of the individual; and this is evident even in criminological theories containing personality trait considerations such as impulsivity and self-control (Nedelec & Beaver, 2014).

Biosocial criminologist theorists adopt a dual view of the instigation of criminal action, whereby they consider environmental and biological influences. They propose that individuals are shaped by their experiences, and in turn, they go on to be shaped by their neurological reaction to environmental stimuli related to those experiences. Biosocial research has predominately placed emphasis on evaluating risk factors for criminal behaviour, leading Raine (2002) to suggest that biosocial criminologists are in a unique position to identify biological and social components which could act as protective, or perhaps even predictive, factors in crime prevention.

The biosocial perspective adopts the research methodology, concepts, and findings of biological sciences and applies them to relevant criminological areas of interest.

Rowe (1987) described such an approach as interdisciplinary communications, and he argued that biosocial criminology does not discard environmental factors; instead, it incorporates environmental, sociological, and biological variables into its research. Emphasising the relationship between environmental and biological influences, Walsh and Ellis (2004, p. 9) stated, "any trait, characteristic, or behaviour of any living thing is always the result of biological factors interacting with environmental factors".

Portnoy, Chen, & Raine, (2013) suggest that data collection using neuropsychological methods to assess brain processes can be implemented easily and are non-invasive. Neuropsychological measurements can assess verbal skills, executive functions, intelligence, and working memory (Beaver, Vaughn, DeLisi, & Higgins, 2010).

The integration of biosocial considerations into criminology is the recognition that a holistic approach to understanding criminal action should incorporate assessing the impact of biological and environmental factors on the offender. As yet, there is no integrative model within investigative psychology, which incorporates environmental or sociological dynamics with psychological and biological factors. Historically, criminology has considered how a multitude of variables contributes, or attempt, to explain criminal behaviour. Disproportionate emphasis has consistently been placed on social factors to the detriment of all others (Wilson & Scarpa, 2012).

Risk factors activated by environmental or psychological conditions may be exaggerated by genetic predispositions towards that behaviour (Wilson & Scarpa, 2012). The relationship between social and biological risk factors may be reciprocal, with either having an activation or inhibition effect on the other. Questions about neurological functioning on behaviour, motivation, and personality, have been asked in multiple fields of research; particularly neuropsychology and neurophysiology. Neuropsychological research has found significant correlations between neural activities and cognitive functioning such as self-control, decision making, moral reasoning and sense of self (Vaske, Galyean, & Cullen, 2011). Research into predictors of criminal behaviour across the lifespan highlights the correlation between cognitive deficits in childhood and criminal behaviour in later life. Deficits in executive functioning such as planning, moral reasoning, and behaviour regulation have been identified as contributing factors of antisocial behaviours (Portnoy, Chen, & Raine, 2013). Research indicates that cognitive deficits can be attributed to specific parts of the brain such as the frontal lobe (Beaver, Vaughn, DeLisi, & Higgins, 2010).

Farrington (2007) found that criminologists tend to view impulsivity as a personality trait; whereas neuropsychologists have found it has correlations with some neural functioning. Extensive research indicates that there are correlations between disruption or deficits in specific brain areas related to impulsivity, decision making, and moral reasoning (Wilson & Scarpa, 2012). The dorsal and ventral regions of the prefrontal cortex have been found to have degrees of impairment or deficits in criminals. Bufkin and Luttrell (2016) found that there were deficits in the prefrontal

or frontal areas of the brain in a sample of offenders. In their study Glenn, Raine and Schug (2009) found that there was a measurable disruption in the amygdala area of the brain among individuals with psychopathic tendencies.

Eysenck's biosocial theory

Eysenck's personality theory (Eysenck, 1967; Eysenck & Eysenck, 1987) was the first theory since the early 20th century to re-examine biological influences on criminal behaviour (Rafter, 2006). The theory is biosocial in nature insofar as it attempts to consider biological and sociological factors to explain criminal behaviour, and in doing so attempts to combine multiple psychological and biological perspectives into one theory. The premise of the theory is the link between personality and criminality, and provide a more comprehensive analysis of the characteristics of the offender. Eysenck suggested that human personality can fall within three dimensions, psychoticism (P), extroversion (E), and neuroticism (N). It should be noted, that Eysenck's theory is conceptual, and attempts to explain criminal behaviour by considering Pavlovian conditioning and the presumed biological influence such conditioning has on neurological processes. He believed that during early childhood socialisation, inappropriate or undesired behaviour is corrected, and this constitutes punishment, and an unconditioned stimulus; where the conditioned stimulus is the behaviour or contemplation of the behaviour. The adverse consequences experienced by the child, obtained through the unconditioned stimulus will transfer to the conditioned stimulus, and be associated with that behaviour. It is presumed, that the individual, not wanting the consequence associated with the conditioned stimulus, will not engage in the

behaviour further. Eysenck proposed that the strength of the conditioning, and time it took to form, would establish the relationship between personality and criminality (Eysenck, 1994).

A cornerstone of Eysenck's theory is what he viewed as the difference in susceptibility of introverts and extroverts to conditioning. He suggested that introverts form conditioned responses quicker and stronger than extroverts, and therefore he proposed there was a positive correlation between extraversion and criminality (Eysenck, 1980). For example, the theory presumes that introverts who engage in antisocial behaviour will receive unwanted punishment from their behaviour, and will be conditioned quicker to avoid the behaviour and the subsequent adverse consequences. In contrast, the extrovert will be slower to be conditioned and therefore would not have a similar motivation to avoid the antisocial behaviour. Eysenck placed emphasis on the individual differences of criminals and considered that offenders were slower to be conditioned and therefore slower to develop a conscience regarding the implications, or disapproval, associated with their criminal action (Adler, Mueller, & Laufer, 2007).

Eysenck (1973) found an association between criminal behaviour and neuroticism; and he incorporated this by proposing neuroticism (anxiety, worry, fear, anger) would increase as repeated antisocial behaviour became a routine for the individual. In those circumstances, Eysenck believed that the criminal behaviour would become habit, while the associated anxiety would act as a drive.

The final component of Eysenck's theory of personality is psychoticism. In a further refinement of the theory, Eysenck and Eysenck (1987) referred to research which they believe drew an unquestionable link between criminal behaviour and psychosis; and identified personality traits conducive to antisocial behaviours. Using the Eysenck Personality Questionnaire (EPQ), Eysenck (1980) found that criminals scored higher on the three identified dimensions than non-criminals.

Eysenck proposed that all aspects of personality can be situated within the three dimensions; "social interactions (extraversion-introversion); emotional reactions and anxiety (neuroticism) and aggressiveness (psychoticism)" (Eysenck, 2013, p. 107). The three dimensions have personality traits, with the characteristics of the personality being applied to those who are assessed to score highly on the dimensions;

Extraversion (E) – assertive, creative, dominant, active and attention seeking.

Neuroticism (N) – anxious, depressed, emotional, low self-esteem, moody, and shy.

Psychoticism (P) – aggressive, anti-social, egocentric, impulsive, and lacking empathy.

(Newburn, 2016, p. 162)

Graphical interpretations of Eysenck's theory has presented the personality dimensions as linear (Hollin, 2006), with the positioning of the individual's degree of that characteristic at a point on the line.

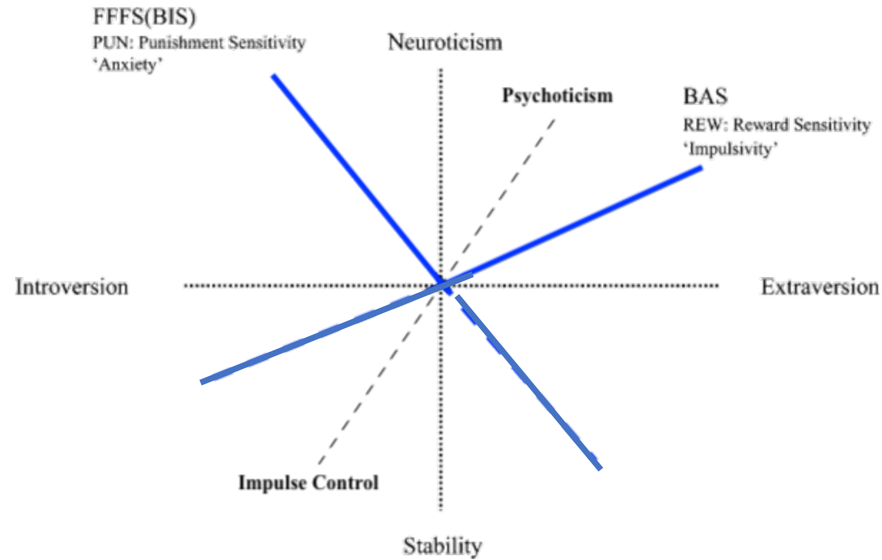

Fig. 2.1. Conceptual diagram of BAS and BIS/FFFS and Eysenck's N, E, & P.

Eysenck's theory of personality (Eysenck, 1967; Eysenck & Eysenck, 1987) proposed that the dimensions of the personality theory were situated within two neurological processes– the reticulo-cortical and reticulo-limbic circuits. He argued that the reticulo – cortical circuit regulates cortical arousal in response to stimuli; and the reticulo – limbic circuit controls the response to emotion-evoking stimuli. Eysenck's extraversion – introversion (E) domain is activated through arousal of the reticulo-cortical circuit, and the level of arousal will trigger the individual's linear positioning along the domain. Therefore, the individual's susceptibility to conditioning depended on physiological factors, particularly cortical arousal. The cerebral cortex is responsible for intellectual functioning, moral reasoning, and decision making; and Eysenck found that individuals with a high level of cortical arousal were easily

conditioned and were conscious of their behaviour and implications. He suggested that those with a higher level of cortical arousal did not need external sources of stimulation. In contrast, individuals, whom Eysenck believe were predisposed to criminal behaviours, had lower levels of cortical arousal so instead sought external sources of stimulation (Adler et al., 2007). Eysenck believed that his ‘theory linking Arousal with the E dimension is relatively novel, whereas that linking N and the limbic system has a long history” (Eysenck, 1999, p. 249).

The neuroticism domain is influenced by the arousal of the reticulo-limbic circuit. Again, the neuroticism (N) domain is portrayed as linear with ‘stable’ being the opposite end of the personality trait. The theory suggests that individuals with neurotic personality traits will become more aroused by emotional stimuli than those of a ‘stable’ disposition. According to Matthews and Gilliland (1999) Eysenck’s third dimension, psychoticism (P) has not been located within a neurological process, although Eysenck (1994) suggested the psychoticism was influenced by dopamine levels. Hammond (1994) concluded that there were valid correlations between extraversion and neuroticism, and neurophysiological processes.

Eysenck’s theory of personality is seen as having made an important contribution to the field of biosocial research, and there is substantial support arguing the validity of the theory (Brebner, 1983; Brebner & Cooper, 1974; Stelmack & Plouffe, 1983). The theory is also recognised as reigniting research into biological factors of criminal behaviour and presenting a coherent, and more importantly, an ethically mindful

argument for considering biosocial influences in criminology (Rafter, 2006). However, further efforts have been made to integrate several levels of theorising, such as biological, sociological, and environmental perspectives, into one approach which would provide a more indebt understanding of personality (Howitt, 2011).

The Reinforcement Sensitivity Theory

Gray's (1982, 1987, 1981, 1985) Reinforcement Sensitivity Theory (RST) is recognised as an alternative to Eysenck's theory. In contrast to Eysenck, Gray proposes two dimensions, impulsivity and anxiety, which are situated at a different orientation to the E, N, and P. According to Corr and McNaughton (2008) a visual representation of the positioning of the BIS (Anxiety) and the BAS (Impulsivity) compared to Eysenck's dimensions can be demonstrated (Fig. 2.1). Gray and McNaughton (2000) incorporated the Flight/Fight/Freeze System (FFFS) into the RST which explained a freeze or paralysing response in the individual when there was unresolved conflict between (BAS) approach and (BIS) avoidance motivations.

Matthews and Gilliland (1999) suggest that Gray's theory provides for a realignment of personality dimensions, and this positions the BIS and BAS within corresponding neurological processes. Gray argues that anxiety is associated with neuroticism; and impulsivity associated with extraversion. Anxiety is also related to traits of introversion and minor traits of psychoticism; Gray (1987) suggested this correlation to facilitate psychopathy personality traits and behaviour.

According to Hammond (1994), Gray's theory correlates with the neurological interaction between the motor and sensory processes in the brain and is, therefore, closer to associating personality and neurological functioning. Gray (1987) also draws a distinction between the theories in this regard; "A number of arguments suggest that the axes labelled 'Anxiety', and 'Impulsivity' have a better claim to biologically real lines of causation than any other including the original rotation used by Eysenck" (p. 352). The association of personality characteristics or traits and the neurological process is understandably important to both theories. The association between neurological process and Gray's positioning of personality characteristics within the dimensions of anxiety and impulsivity is supported by Reiman et.al. (1986) who found, using Positron Emission Tomography (PET) scans in patients experiencing panic attacks, related neural activity in the septo-hippocampal system, and the hippocampus regions of the brain, where the BIS is located. Given that panic attack, like phobias, are found in individuals with high extraversion/high neuroticism (Gray, 1987) they fall on Gray's horizontal axis of impulsivity. The proposal is that conflict exists, following arousal of the septohippocampal system which triggered the BIS; and the person's attempt to attain their goal (activating the BAS). Where the FFFS cannot resolve the conflict, the individual's behaviour is panic-freeze (panic attack). Hammond (1994) believes Reiman's findings are evidence of the validity of Gray's theory.

Gray (1985; 1982, 1987; 1972) reinforcement sensitivity theory is situated within the field of neuropsychology, and proposed the existence of three dimensions of personality, the behavioural approach system (BAS), the behavioural inhibition system

(BAS), and the fight/flight system – which was later revised to the flight/fight/freeze system (Gray & McNaughton, 2000). These dimensions are related to the differences in sensitivity of neurological systems within the central nervous system which regulates behaviour. The behavioural approach system (BAS) motivates behaviour towards goals; or as Gray describes, appetitive motivation (Gray, 1981). He proposes that the BAS is sensitive to stimuli which signal potential reward, escape from punishment, or non-punishment. Gray (1990; 1981) suggested that BAS activation was attributable to positive feelings experienced by the individual as they are exposed to potential rewards. However, the dominant personality trait associated with BAS is impulsivity and a motivation for action.

Gray argued that individuals who have a higher sensitivity to BAS activation were more likely to engage in purposeful efforts to attain goals. Gray (1990) believed that this determination, activated by the BAS, was a personality trait which triggered hope and elation as the person anticipated reward. As the theory suggests, individuals who are susceptible to high BAS will instigate behaviour, in response to stimuli indicating potential reward outcomes. This will likely take the form of a move towards attaining the goal. The responding behaviour to the potential reward, and the related anticipation of reward, presents the individual with positive and hopeful emotions.

In contrast to the BAS, the behavioural inhibition system (BIS) is sensitive to stimuli which indicate the potential for punishment or non-reward. Activation of the BIS inhibits the organism's approach towards the goal; therefore inhibiting behaviour

that might lead to adverse consequences for the organism (Gray & McNaughton, 2000). Gray (1990; 1981; 1987) found that activation of the BIS exposed the individual to negative emotions such as fear and anxiety. He argued that the dominant emotion associated with the behaviour inhibition system was anxiety, and those who are susceptible to high levels of BIS activation and influence will experience high levels of anxiety when exposed to stimuli of potential punishment or non-reward. The anxiety felt by the person will influence their behaviour and deter them from approaching the goal, while the threat of punishment exists.

A significant number of studies have been completed looking at the influence of BIS and BAS on the individual (Balconi, Falbo, & Brambilla, 2009; Berkman, Lieberman, & Gable, 2009; Gomez, Gomez, & Cooper, 2005) and the implications for the person of overactive or underactive BAS and BIS personality dimensions . Quay (1988, 1993) looked at childhood disorders and found that a high sensitivity to stimuli which activated BAS behaviours and intense emotions attributable to the anticipation of reward was associated with conduct disordered children. He also found that an underactive BIS, which did not prevent behaviours when the person is faced with punishment, is correlated with a diagnosis of attention deficit hyperactivity disorder (ADHD). In contrast, an overactive BIS and heightened sensitivity to stimuli of potential punishment can lead to childhood anxiety disorders.

In conjunction with the three personality dimensions of BAS, BIS, and FFFS, are three subscales or interrelated scales of the BAS. These are BAS-Fun Seeking (BAS

Fun) assesses the desire for new rewards; BAS-Drive (BAS DR) the measure of persistence employed to pursue goals, and BAS-Rewards responsiveness (BAS RR) assesses the desire for new rewards (Carver & White, 1994). The theory proposes that BAS Drive and BAS Reward play a more significant role in responding to stimuli indicating potential rewards attributable to behaviour. BAS Fun is believed to relate to the degree the stimuli, which indicated potential reward, induces approach behaviours. The BAS is associated with approach behaviours towards goals, which are motivated by degrees of impulsivity; arguably unless activated through the cautious conflict resolution of the BIS. While the BAS is subject to a degree of anxiety, research has found that all of the BAS dimensions are correlated with positive emotions (Jorm et al., 1998). However, positive emotions do not mean positive behaviours. Voigt et al. (2009) found that BAS-fun has been positively associated with risky health behaviours, such as sexual behaviours, alcohol and drug use. They also found that these "activities that are done socially, rather than individually, and that are rebellious or illegal. This may be driven by the positive associations documented between Fun Seeking and such traits as impulsivity in the context of sensation seeking (as distinct from Reward Responsiveness)" (p. 92)

Leone and Russo (2009) considered the significant role of impulsivity on the behaviour approach system and its dimensions. They referred to research conducted into the concept of impulsivity (Dickman, 1990) and expressed the view that impulsivity should be viewed as functional or dysfunctional. Functional impulsivity (FI) represents a positive consequence for the individual, and the impulsive behaviour

does not hinder tasks or goal completion. In contrast, dysfunctional impulsivity (DI) brings about negative consequences for the person and hinders or prevents their attempts to attain their goal. Concerning the BAS dimensions, Smillie & Jackson, 2006) found that BAS Drive operates within functioning impulsivity and utilises problem-solving and decision making processes to respond to conflicting demands – the worthwhileness of continuing the pursuit of the goal, and the effort to reward ratio. They also found the BAS Fun engaged dysfunctional impulsivity; and activation of the dimension was an immediate reaction to stimuli, which lacked direction other than instant want. The research indicated the BAS reward responsiveness could not be defined by either dysfunctional or functional impulsivity. Leone and Russo (2009, p. 1104) concluded, "reward responsiveness focuses on emotional reactions to reward clues and reward-attainment. Such emotional reactions precede goal-pursuit and are a consequence of goal-attainment, but are not so crucial in more behavioural stages of goal-pursuit, such as behavioural maintenance (Drive), or when the incentive needs to be seized, and prompt action is required (Fun). Rather, the emotions linked to RR signal that the incentive is already attained, making pointless any impulsive goal-directed action".

As suggested by Gray (1970) the BIS sensitive to anxiety, and for the individual who is susceptible to BIS activity this may increase their potential for emotional regulation difficulties (Markarian, Pickett, Deveson, & Kanona, 2013). The necessary increases in emotional response from the individual due to BIS anxiety may lead them to compensate using maladaptive behaviours to try to regain emotional equilibrium.

However, as the individual attempts to regulate their heightened emotional response, they increase their risk of psychopathology (Markarian et al., 2013).

Pickett, Lodis, Parkhill, & Orcutt, (2012) highlighted a positive correlation between BIS sensitivity and emotional regulation dysfunction. Research indicates that individuals predisposed to emotional regulation dysfunction will be adversely effective when faced with stimuli that activates BAS impulsivity, particularly BAS reward responsiveness (Tull, Gratz, Latzman, Kimbrel, & Lejuez, 2010). and substance abuse and addiction (Smith, Mattick, Jamadar, & Iredale, 2014).

Reinforcement Sensitivity Theory (Revised)

In 2000, Gray and McNaughton revised and updated the RST to incorporate neurophysiological data available through animal research of anxiety, and RST research on humans. While the original theory considered how BAS and BIS reconciled conditioned stimuli, the revised RST continued BAS as negotiating responses to appetitive cues, but now included unconditioned stimuli. The BAS was also found to reflect extraversion, reward orientation and impulsiveness (Segarra et al., 2014). In another revision, Gray and McNaughton (2000) found that the FFFS mediated responses to conditioned and unconditioned stimuli and significantly was now related to fear and not anxiety. Fear sensitivity and its role on motivation for behaviour was expanded to a Flight/Fight/Freeze System (FFFS). The final major revision of the theory centred on the BIS, which was proposed as a conflict detection system. The BIS was charged with resolving goal action conflicts between reward

and/or punishment possibilities. Gray and McNaughton (2000) found that this conflict resolution caused anxiety for the individual.

The revised RST was not a significant revision of the original model developed by Gray; with the relevant adaptation surrounding the positioning of fear sensitivity within the FFFS and not necessarily associated with the BIS activation. In the revised RST, BIS activation occurs when the person receives input from adverse (Fight/Flight/Fear) and appetitive (BAS) stimuli at the same time, and at approximately the same strength of influence. Activations of the BIS causes the person to suspend behaviour, assess, and try resolve the internal conflict between fear and potential reward. The person's perception of the risk/reward opportunity can be resolved quickly (fight or flight); or can debilitate the person (freeze) for longer.

The function and structure of the brain

The brain is an organism's supercomputer and acts as the control centre for all functions within the body. Along with the spinal cord, the brain is part of the central nervous system (CNS) which processes the organism's sensory information. The brain is divided into three major sections; the forebrain (prosencephalon), midbrain (mesencephalon) and the hindbrain (rhombencephalon).

The forebrain predominately consists of the cerebrum which is divided into two hemispheres, and makes up the majority of the brain. Each hemispheres of the brain

is divided into four lobes; frontal, parietal, occipital, and temporal. While the lobes have integrated functions, each lobe is thought to be responsible for specific processes; i.e Frontal lobe (decision making, emotions, problem-solving, language, self-awareness); Temporal lobe (aggressive behaviour, memory, sequencing, hearing, language comprehension); Occipital lobe (visual perception and processing, interprets movement); and Parietal lobe (bodily awareness, hand – eye coordination, sensory perception (hearing and visual). The outer layer of the cerebrum, the cerebral cortex, is responsible for conducting the higher-level cognitive functioning and information processing, such as decision making. The forebrain also includes the *thalamus* and the *hypothalamus* which are situated near the centre of the brain and are part of the limbic system. The thalamus and hypothalamus, along with the cerebral cortex, controls physiological functioning within the body, such as metabolism, hormonal activity, and sensory processing.

The hindbrain is situated at the back of the brain and consists of the majority of the brainstem and the *cerebellum*. The role of the brainstem within the CNS is to connect the brain to the spinal cord. The cerebellum is responsible for gross motor control and processes information from muscles to coordinate movement and fine motor coordination.

The midbrain is the connection between the forebrain and the hindbrain; and the midbrain and the hindbrain form the brainstem. The functions of the midbrain relate to automatic physiological responses and neurological signals from the cerebral cortex

to the CNS. Within the midbrain are the *cerebral peduncles* which produce dopamine which is related to impulse control disorders and has been described as the 'body's natural reward system' (Nedelec & Beaver, 2014, p. 56); and the *tegmentum* which is involved in pain suppression, and therefore the organism's perception adverse or reward stimuli. Researchers have considered the effects of neurotransmitters, including dopamine and serotonin, on behaviour (Sadeh et al., 2010); and found that neurotransmitters can facilitate neurological processes which lead to antisocial behaviours (Raine, 2002). Neural imaging of the prefrontal cortex, temporal cortex, insula, amygdala, hippocampus and the cingulate gyrus, examining structure and neurochemical functioning found deficits in neural structure and function in criminal samples (Yang and Raine, 2009).

Further research suggests there appears to be correlation between violent and criminal behaviour, and malfunctions in the limbic system (Burke, 2014). Despite this, French and DeOca (2001) described the limbic system as the primitive or emotional brain and is often overlooked by criminologists. The Limbic system contains the hippocampus, amygdala, thalamus, and hypothalamus which are considered relevant to emotional regulation, sensory interpretation, and appetite behaviours (movement towards needs, such as food). Burke argues that the limbic system is particularly relevant in understanding psychopathy. Psychopathy is defined by antisocial behaviour, which is associated with activity and deficits in the prefrontal areas of the brain, and with problems with inhibitions. The second condition of psychopathy is the

individual's disassociation from emotions, which is associated with the amygdala and the limbic system (Hare, 2003; Jones, 2013).

Reinforcement Sensitivity Theory's Neurological Position

A central question in neuropsychology is the correlation between neurological processes and a person's behaviour. Gray (1981) proposed that there are three major brain systems that motivate behavioural differences within an individual, based on their exposure to environmental stimuli. These systems were physiological, or biological, mechanisms that controlled appetitive motivation (BAS) and adverse motivation (BIS). Gray (1987) concluded that the BIS and BAS correspond to influences of anxiety and impulsivity on cognitive processes, which are personality traits and respond to conditioned or learned responses. The BAS mediates sensitivity to appetitive stimuli; and activates behaviours which attempts to obtain the perceived rewards. In contrast, the BIS is sensitive to conditioned adverse stimuli which indicate the potential for punishment, or the withdrawal of reward (frustrative non-reward). The BIS is also activated by the person's innate fear, or experience of evolutionary dangers; which the person may have no experience of, and therefore, no conditioned or unconditioned response, but they have an awareness of a potential threat (finding a dead body; experiencing an earthquake for the first time). When the BIS is activated, the person experiences a higher level of arousal and initiates a disruption in behaviour to escape potential punishment or frustrative reward. Gray (1981) argued that BIS activation may cause an inhibition of action towards goals, and therefore may be responsible for feelings of fear, anxiety, frustration and sadness (Gray, 1990; Gray,

1972).

Gray placed emphasis on the BIS/BAS and underdeveloped the third concept in his motivational model; the Fight/Fight System. According to Gray the Fight/Flight System was activated by unconditioned adverse inducement and results in escape or aggressive behaviour related to rage or panic (Segarra et al., 2014).

Gary (1981) suggested through developed responses to stimuli, the biological and neurological processes of BAS and BIS has implications on the individual's personality; and interaction between the systems can activate a physiological, emotional, and behavioural reaction for the person (Scholten, Honk, Aleman, & Kahn, 2006; Tapper, Baker, Jiga-Boy, Haddock, & Maio, 2015; Vermeersch, T'Sjoen, Kaufman, & Houtte, 2013). Differences in BIS and BAS can be attributable to variations in behaviour, including depression, addiction and substance misuse, attention deficit hyperactivity disorder, and conduct disorder (Franken, Muris, & Rassin, 2005; Gray, 1985; Johnson, Rhodes, Jeffrey, Garland Jr, & Mitchell, 2003).

A significant number of studies have been completed looking at the influence of BIS and BAS on the individual (Balconi, Falbo, & Brambilla, 2009; Berkman, Lieberman, & Gable, 2009; Gomez, Gomez, & Cooper, 2005) and the implications for the person of overactive or underactive BAS and BIS personality dimensions . Quay (1988, 1993) looked at childhood disorders and found that a high sensitivity to stimuli which activated BAS behaviours and intense emotions attributable to the anticipation

of reward was associated with conduct disordered children. Individuals who have a higher sensitivity to BAS activation are more likely to engage in purposeful efforts to attain goals. Gray (1990) believed that this motivation, activated by the BAS, was a personality trait which triggered hope and elation as the person anticipated reward. Individuals who are susceptible to high BAS will instigate behaviour to move towards the attainment of goals, in response to stimuli indicating potential reward outcomes. The responding behaviour to the potential reward, and the related anticipation of reward, presents the individual with positive and hopeful emotions.

Leone and Russo (2009) considered the significant role of impulsivity on the behaviour approach system and its dimensions. They referred to research conducted into the concept of impulsivity (Dickman, 1990) and expressed the view that impulsivity should be viewed as functional or dysfunctional. Functional impulsivity (FI) represents a positive consequence for the individual, and the impulsive behaviour does not hinder tasks or goal completion. In contrast, dysfunctional impulsivity (DI) brings about negative consequences for the person and hinders or prevents their attempts to attain their goal. Concerning the BAS dimensions, Smillie & Jackson (2006) found that BAS Drive operates within functioning impulsivity and utilises problem-solving and decision making processes to respond to conflicting demands – the worthwhileness of continuing the pursuit of the goal, and the effort to reward ratio. They also found the BAS Fun engaged dysfunctional impulsivity; and activation of the dimension was an immediate reaction to stimuli, which lacked direction other than instant want. The research indicated the BAS reward responsiveness could not be

defined by either dysfunctional or functional impulsivity. Leone and Russo (2009, p. 1104) concluded, "reward responsiveness focuses on emotional reactions to reward clues and reward-attainment. Such emotional reactions precede goal-pursuit and are a consequence of goal-attainment, but are not so crucial in more behavioural stages of goal-pursuit, such as behavioural maintenance (Drive), or when the incentive needs to be seized, and prompt action is required (Fun). Rather, the emotions linked to RR signal that the incentive is already attained, making pointless any impulsive goal-directed action".

In contrast to the BAS, the behavioural inhibition system (BIS) is sensitive to stimuli which indicate the potential for punishment or frustrative reward. Activation of the BIS inhibits the person's approach towards the goal, where punishment is more likely; therefore inhibiting behaviour that might lead to adverse consequences for the person (Gray & McNaughton, 2000). Gray (1987) found that activation of the BIS exposed the individual to negative emotions such as fear and anxiety.

An underactive behavioural inhibition system, which did not inhibit behaviours when the person is faced with punishment or non-reward, is correlated with a diagnosis of attention deficit hyperactivity disorder (ADHD). In contrast, an overactive BIS, manifested in heightened sensitivity to stimuli of potential punishment, can lead to anxiety disorders; whereby the person is debilitated from moving towards goals. The BIS sensitive to anxiety, and for the individual who is susceptible to BIS activity this may increase their potential for emotional regulation difficulties (Markarian et al.,

2013). The necessary increases in emotional response from the individual due to BIS anxiety may lead them to compensate using maladaptive behaviours to try to regain emotional equilibrium. However, as the individual attempts to regulate their heightened emotional response, they increase their risk of psychopathology (Markarian et al., 2013).

Neurological functions and the Behaviour Inhibition and Behaviour Activation Systems

It is worth remembering that Gary's reinforcement sensitivity theory placed emphasis on anxiety (BIS) and impulsivity (BAS) as inhibiting or motivating factors in behaviour. Albrecht et al., (2014), considered impulsivity as an indicator among some groups as a risk factor for psychopathology; and concluded that an individual's inability to inhibit impulsive behaviour would increase the level of risk of negative behaviours or adverse consequences for the person. In their research Albrecht and his colleagues highlight a direct link between behaviour inhibition, or response, and neurological processes.

While Albrecht et al., (2014) refer to response inhibition, they are similar to Gary in proposing that impulsivity is the instigator of potential behaviour activation. Amodio (2008) also proposed a link between behaviour activation (BAS) and dopamine. He suggests that the relationship between the functions of dopamine and the BAS, motivates goal orientated behaviours primarily in the prefrontal cortex (PFC) regions of the brain. Research conducted in the area found a correlation between

activity in the PFC and decision making or behaviours based on reward/punishment, approach/avoidance (Amodio, Shah, Sigelman, Brazy, & Harmon-Jones, 2004; Harmon-Jones & Allen, 1998; Pizzagalli, Sherwood, Henriques, & Davidson, 2005).

The BAS is proposed to be situated within the mesolimbic dopaminergic pathways (Pickering & Gray, 2001). The role of dopamine within this system is thought to stimulate the organism to move towards appetitive stimuli (Schultz, 2007) and increase their motivation to seek positive outcomes. Gray proposed that the BIS is situated in the septo-hippocampal-system (Gray, 1982) and suggested that when individuals are influenced by BIS they will experience anxiety when facing a potentially adverse stimuli, and they will attempt to engage in avoidant behaviours to escape punishment.

According to Reuter (2015) the BIS is strongly related to anxiety but is also responsible for the resolution of conflict created by opposing stimuli. In essence the BIS is triggered when processes in the septo-hippocampal-system and the amygdala are activated at the same time (Gray & McNaughton, 2000). The revised Reinforcement Sensitivity Theory (rRST) proposes that the BAS is activated by all stimuli perceived to offer reward or non-punishment. However, BIS is activated when there is a conflict in potential outcomes; for example, an opportunity for reward or punishment in equal measure. This creates conflict that the organism attempts to resolve using other neurological processes, such as sensory perception and processing, reasoning, and problem solving. This gathering of additional information will

subsequently trigger a dominant reaction; either the BAS to try attain the reward, or the FFFS which will trigger avoidant behaviours.

The function of the BIS and BIS within neurological process has been identified by Corr, DeYoung and McNaughton (2013). They suggest that the BIS triggers hierarchical activities in a number of brain regions, depending on the strength of the adverse stimuli and the immediacy in which a response is required. These include the prefrontal dorsal system, (activated when the organism feels complex anxiety); posterior cingulate (obsessional anxiety), septo-hippo-campal system (activated by general anxiety and recognition of aversion), amygdala (activated by anxiety and having an arousal/startle effect), medial hypothalamus (triggered by anxiety and evokes an assessment of risk), periaqueductal grey (triggered by anxiety and leads the organism to engage in defensive inactivity). This process leads the organism to not engage with the adverse stimulus, therefore inhibiting behaviour. However, when there is a goal conflict during environments or stimuli whereby there is the potential for reward and punishment, then the BIS is triggered and the organism engages in cautious risk assessment and interpretation of the circumstances. This cautious consideration initiates the FFFS, and it too interprets sensory information and cognitive information, such as memory, emotion, and conditioned responses to influence behaviour.

As with the BIS, the FFFS neurological processes are situated within a number of brain regions; such as prefrontal ventral system (triggered by complex fear), anterior

cingulate (minor obsession), amygdala (triggered by arousal and want to avoid adverse stimuli), medial hypothalamus (escape action), periaqueductal (engage action of fight, flight, freeze). This relationship between the BIS, FFFS, and activity within structures of the brain has received support through neuroscience research (Rutter, 2012). Positive correlations have been found between the amygdala and the hippocampus using BIS/BAS self report questionnaire (Barrós-Loscertales et al., 2006; Cherbuin et al., 2008). As already mentioned, in times of goal conflict – where there is the potential of reward *and* punishment – a relational system can operate in parallel to the BIS. The FFFS interprets information from the BIS cautious approach during goal conflicts, and will trigger a dominant behaviour

Reinforcement Sensitivity Theory's neurophysiological framework

According to Amodio et al., (2008) the Reinforcement Sensitivity Theory has added to the understanding of neurological influence and behaviour. Correlations have been identified between the BIS/BAS theoretical concept and neurocognitive responses which trigger behaviours associated with approach-avoidance motivations (Amodio, 2008). The BIS and BAS were proposed as a neuropsychological framework for understanding how neural processes responsible for behavioural regulation are influenced by personality (Amodio, Master, Yee, & Taylor, 2008). Neurophysiological differences between the Behaviour Inhibition System and the Behaviour Approach System have been recognised and situated within distinctive neural processes. Gray and McNaughan (2000) proposed that BAS functions are activated by the dopaminergic neurotransmitter system. This system is attributed to

positive reward, and the reinforcement of goal attaining or punishment avoidant behaviours. The dopaminergic neurons involved in the dopaminergic system are located in the substantia nigra and ventral tegmental areas (VTA) of the midbrain. The production of dopamine and its release activates anticipatory or rewarding reactions in the brain; and through reinforcement can trigger 'approach' behaviours to bring about repetition of the reward. The mesocortical pathway is a dopaminergic pathway incorporating the VTA and the prefrontal cortex. This system is considered to be central in motivational response and emotional control.

Variances in neurotransmitter processes along the dopaminergic pathway, which cause dopamine levels to be asymmetrical in the prefrontal cortex (PFC) has been found to be related to disorders which reflect difficulties in activating and sustaining reward attaining or punishment avoiding behaviours, such as depression and attention deficit hyperactivity disorder (ADHD). Aron and Poldrack (2005) proposed strong correlations between BAS with PFC activities in neurobiological and neurological sciences.

Exploration of the relationship between asymmetrical dopamine levels in the left and right side of the PFC and approach and avoidance dispositions have been conducted using electroencephalogram (EEG). Amodio et al., (2007) found there is general acceptance within neurophysiology that activity in the left side of the PFC coincided with approach towards appetitive stimuli and avoidance of aversive stimuli (BAS); related to temporary motivations (state) and trait levels.

The relationship between the BIS and BAS and neurophysiological and neurocognitive systems

Neurological processes in the PFC, measured using electroencephalography (EEG) (Pizzagalli, Sherwood, Henriques, & Davidson, 2005), are more specifically being associated with cognitive and behavioural approach versus avoidance motivational orientation (Harmon-Jones & Allen, 1998).

The neuroscience research relating to BIS is not as definitive. However, the anterior cingulate cortex (ACC) is believed to be responsible for conflict monitoring between cognitions and action tendencies (Botvinick et al. 2001). According to Amodio et al. (2007), the ACC has been associated with neurocognitive activity such as mediating between competing behavioural tendencies, and sensitivity to unexpected stimuli. Botvinick et al., (2004) suggests the ACC provides a conceptually similar role to the RST BIS. Amodio et al. (2007) found substantial research to indicate that the BIS should be associated with the neurological functioning of the ACC, which in turn is associated with the interruption of behaviour.

RST proposes that there are underlying neurophysiological biochemical elements, with particular association in prefrontal cortex activity, that facilitates or implements BAS and BIS motivated behaviours. (Harmon-Jones, et al., 2004; Amodio, Shah, Sigelman, Brazy, & Harmon-Jones, 2004; Davidson, 1992).

As stated earlier, Albrecht et. al., (2014) considered BAS impulsivity as an

indicator among some groups as a risk factor for psychopathology; and concluded that an individual's inability to inhibit impulsive behaviour would increase the level of risk of negative behaviours or adverse consequences for the person. They identified studies (Chambers, Garavan, & Bellgrove, 2009; Congdon et al., 2010) which examined the relationship between behaviour inhibition and activity within structures of the brain; and found that dopamine levels regulated activities in the inferior frontal cortex, anterior insula, anterior cingulate cortex, presupplementary motor area, subthalamic nucleus, globus pallidas and putamen.

To investigate the physiological construct of BAS and BIS within the brain, research was conducted using an electroencephalogram (EEG) to examine neurological functions and processes during approach/avoidance tests (Harmon-Jones & Allen, 1998; Hewig, Hagemann, Seifert, Naumann, & Bartussek, 2006). The results indicated a correlation between BAS and prefrontal cortex activity; and Amodio et al (2004) believes this indicates the BAS relationship with neurological processes responsible for decision making and judgement relating to approach/avoidance behaviours. Neurological processes relating to the BIS have been harder to locate. However, according to Amondo and Frith (2006) the anterior cingulate cortex (ACC) is responsible for conflict resolution between stimuli and behaviour; and between competing responses, similar to the BIS. A correlation between the BIS and the conflict monitoring role attributed to the ACC has been explored, and led Botvinick, Cohen, & Carter, 2004; Kerns et al., (2004) to conclude 'functional MRI research has dissociated the conflict – monitoring function linked to the ACC from a separate but

coordinated PFC related mechanism for engaging regulatory control in response to conflict. This dissociation between the ACC and the PFC mechanisms for self-regulation is consistent with the theoretical distinctions between the BIS and BAS' (p.3).

The function of the BIS and BAS within neurological process and the activity within that neural structure has been identified by Corr, DeYoung and McNaughton (2013). They suggest that the BIS triggers hierarchical activities in a number of brain regions, depending of the strength of the adverse stimuli and the immediacy in which a response is required. These include the prefrontal dorsal system, (activated when the organism feels complex anxiety); posterior cingulate (obsessional anxiety), septo-hippo-campal system (activated by general anxiety and recognition of aversion), amygdala (activated by anxiety and having an arousal/startle effect), medial hypothalamus (triggered by anxiety and evokes an assessment of risk), periaqueductal grey (triggered by anxiety and leads the organism to engage in defensive inactivity). This process leads the organism to not engage with the adverse stimulus, therefore inhibiting behaviour. However, when there is a goal conflict during environments or stimuli whereby there is the potential for reward and punishment, then the BIS is triggered and the organism engages in cautious risk assessment and interpretation of the circumstances. This 'cautious consideration' initiates the Flight/Fight/Freeze System, and it too interprets sensory information and cognitive information, such as memory, emotion, and conditioned responses to influence behaviour. As with the BIS, the FFFS neurological processes are situated within a number of brain regions; such as prefrontal ventral

system (triggered by complex fear), anterior cingulate (minor obsession), amygdala (triggered by arousal and want to avoid adverse stimuli), medial hypothalamus (escape action), periaqueductal (engage action of fight, flight, freeze). This relationship between the BIS, FFFS, and activity within structures of the brain has received support through neuroscience research (Rutter, 2012). Positive correlations have been found between the amygdala and the hippocampus using BIS/BAS self-report questionnaire (Barrós-Loscertales et al., 2006; Cherbuin et al., 2008).

Development of BIS/BAS scales

Initial steps to develop a Reinforcement Sensitivity Theory (RST) measurement produced the Gray Wilson Personality Questionnaire (Wilson, Barrett, & Graty, 1989). The instrument attempted to measure the BAS – approach towards appetitive stimuli or avoidance of potential punishment; the BIS – avoidance of adverse stimuli or frustrative non-reward; and the FFS – aggressive behaviour in response to threat (fight) or withdrawal (flight) from potential punishment. The instrument consisted of six measurements incorporating BIS/BAS/FFS; (with the 'Freeze' component not added until the RST revision in 2000). However, factor analysis of the six components found inadequate consistency among the items for each subscale, and therefore poor structure within the questionnaire as a whole (Corr, 2016).

Subsequently, Carver and White (1994) developed their version of RST scales incorporating four subscales; one scale to measure the Behavioural Inhibition System (BIS) and three scales to measure the Behaviour Avoidance System (BAS) motivations

of Drive (statements indicative of persistence to attain desired goals or rewards), Reward responsiveness (statements suggesting motivation to seek and activate approach behaviours towards possible rewards or positive experiences); and Fun Seeking (items indicative of positive action or cognitions related to anticipatory reward). The model was designed to measure the BIS/BAS components but did not consider the Fight/Flight/Freeze System (FFFS) identified in the revised version of RST.

The revised version of the RST (rRST) was completed by Gray and McNaughton (2000) and proposed the division of the BIS into separate factors measuring FFFS-Fear and BIS Anxiety. Gray and McNaughton found that BIS could be separated into two independent components with different motivational and functional influence. They concluded that the FFFS Fear and BIS anxiety had distinct neuropsychological and neuropsychopharmacological structures (Corr & McNaughton, 2012). This was a significant divergence from Gray's original 2 factor theory; and presented the rRST as identifying three neuropsychological systems; the behavioural approach system which is activated by appetitive stimuli; the Flight/Fight/Freeze System activated by aversive stimuli; and the behavioural inhibition system which is activated by goal conflict between the BAS and FFFS – when equal motivation is experienced to move towards a goal and to avoid punishment which might be a consequence of approach behaviours towards that goal.

In their adaptation of the BIS/BAS scales in 2008, Corr and McNaughton (2008), maintained two independent components, anxiety and fear, within the BIS and proposed the recategorisation of the BIS scale items to measure BIS-anxiety and FFFS-fear. Through exploratory factor analysis, Johnson, Turner, and Iwata (2003) had previously identified two items that loaded onto separate BIS factors, these were; '*Even if something bad is about to happen to me, I rarely experience fear or nervousness*' (item 2) and '*I have few fears compared to my friends'* (item 22); and they suggested that these statements could be attributed to the FFFS (BIS Fear). However, concern existed regarding the proposed subscale of BIS-Fear having only two factors, and the weight that could be attributed to findings from the subscale. Heym, Ferguson, and Lawrence (2008) found the evidence for the inclusion of the item '*If I think something unpleasant is going to happen I usually get pretty worked up*' (item 16)

The number of refinements to the BIS subscale is in contrast to the BAS component of the scale which has been accepted, with very little change made to the subscale or conceptual motivations it is reported to measure (Beck, Smits, Claes, Vandereychen, & Bijttebier, 2009; Poythress et al., 2008). To examine the validity of the BIS structure within the rRST Heym et al (2008) conducted analysis of the three proposed structures of the subscale; Carver and White's (1994) BIS model with seven BIS items on a single BIS component; a two factor BIS model with two BIS Fear items as proposed by Johnson et al., (2003); and a two factor BIS component with 3 BIS Fear items. Disappointingly, the results were inconclusive, with different findings found depending on whether the sample was clinical or non-clinical.

Therefore, it has been proposed the behaviours and neuropsychological processes explained by Reinforcement Sensitivity Theory, and the revised RST, can be measured using a number of different versions of the BIS/BAS scale. This includes Gray's (1982) original (BIS/BAS) two dimensional model; Carver and White's (1994) two dimensional model with four subscales – one BIS and three BAS; and Gray and McNaughton (2000) rRST two dimensional model with five subscales – two BIS and three BAS. Within Gray and McNaughton's model Johnson et al (2003) proposes a two item BIS Fear; while Heym et al., (2008) identified a three item BIS Fear component.

The adaptations Carver and White (1994) made to Gray's original scale, and the subsequent revised reinforcement sensitivity theory incorporating the recategorisation of the BIS subscale made by Gray and McNaughton (2000) has been widely accepted as empirically valid and consistent. However, items reflective of the BIS subscale continue to be examined. According to Keiser and Ross (2011) some consensus has been reached on the three item BIS Fear structure presented by Heym et al., (2008), but debate continues about the differing effectiveness of the structure when used with clinical or non-clinical sample groups. Given this, there is a dearth of information investigating the use of the BIS/BAS five factor model, using the two and three item BIS Fear subscale with a non-clinical sample.

Identity: An Overview

Theoretical frameworks on the concept of identity have been defined by various psychological theories (Mead 1934; Marcia, 1966; Erikson 1968, Vygotsky, 1978). The development of identity is considered to be a lifelong experience whereby the definition of self is constructed and reconstructed through the telling of personal narratives which are influenced by social interactions and life experiences (Giddens, 1991). The concept of self can be viewed on a time axis from infant, child, adolescent, through to adulthood. However, it must also be viewed as multidimensional and influenced by factors such as experiences, relationships, cognitions, and perceptions. McAdams (1995) suggested that a person can be described on three levels of functioning; dispositional traits such as extraversion or dominance (Level I), personal concerns, in reference to motivations, roles, or strategies (Level II), and identity, that is, in terms of one's unity, uniqueness, and purpose in life (Level III). McAdams (1995) went on to state 'the self of the past led up to or set the stage for the self of the present, which in turn will lead up to, or set the stage for the self of the future' (p. 382). Identity can then be viewed as a process of integration of one's past, present, and future, to unify and understand the self.

A related component of a person's identity is their expression of identification. While identity is seen as a person's sense of self, identification situates the person in a social context, as they are seen to hold certain values and views, strive to achieve particular goals, and engage with a type of social world (i.e organisations, activities, events). Identification can play a key role in the development of a person's identity.

Identification can also be considered to maintain behaviours; whereby particular behaviours are expected as part of their social world; such as weekly attendance at religious ceremonies or sporting events, or belonging to an identified criminal gang or resisting social order. Therefore, identification could be argued to be an important component in the maintenance of criminal behaviours (O Donnell, 2015).

The individual's identity develops, and is maintained, through the person's self-concept, relationship and social roles (Stryker 1980). Therefore, identity can be seen as being both personal and interpersonal (Mokros, 2003); and can be considered dynamic insofar as it is constantly influenced by life experiences and in a reactive state of evolution. Walters (1994; p.10) argues that "identity is operationally defined ... as the unique set of characteristics by which a person comes to recognize him or herself". Being both perceptual and interpersonal in nature, identity is conceived as a perception derived from image (Johnson, 1987), self (Pratkanis & Greenwald, 1985) and relational (Baldwin, 1992) schema that then merge to form an organized sense of self'.

The person's concept of self is also influenced, and defined, by their experience of having control over their expression of personality traits. In a social context, these traits can be expressed through interpersonal roles that the person enacts; in this sense, relational identity is the nature of the person's role relationship with others; and the person plays an active part in defining that role (i.e employer/subordinate). Relational identification refers to the roles that are imposed on the person, but the person does not accept that role as self-defining.

The dynamic process of construction and reconstruction of personal identity can be motivated by the persons social experiences; and their concepts of self are influenced by relational identity and relational identification. The concept of engaging with social roles, and interacting with other actors portraying their roles, provides the circumstances where identities are shaped and refined. The person will also experience different social contexts, within which they might have a different relational identity and views of relational identification, which leads to the different expressions of identity or transformations in the concept of self (Katovich, 1986). Characteristics of the person's identity, and identification, can be recognised through their narratives (Maruna, 2001). Therefore, when considering offender characteristics, criminal narratives can be informative in providing insight into the person's life, and not just their criminal behaviour.

Theoretical concepts of a criminal identity

Li and Wang (2011) suggested that identity has two components, that of personal and social. Personal identity is the individual's sense of self and self-perception; while social identity allows the individual to situate their identity within their social connections. However, in the context of criminal identities, criminals often assume multiple identities. Often these identities can be conflictual; such as caring father/violent offender, academically limited/street smart, poor societal standing/high criminal reputation. Li and Wang (2011) believe criminals who have multiple identities pose a significant challenge to law enforcement agencies. It is also evident that the

existence of criminals having multiple identities and concepts of self, provides for complicated assessment, treatment, and relapse prevention requirements.

Criminal identity resolution considers the attributes related to the individual's personal identity, social behaviour, and social relationships; and refers to the reconciliation of the criminal's identities to a single entity, which may be defined differently than the presenting criminal behaviour but could be identifiable as the person's identity. Acknowledging the concept of multiple identity manifestations of the criminal is vital for law enforcement, insofar as it provides a comprehensive view of the offender, in all their façades.

Cultural criminology suggests identity formation can be influenced by consumer culture, style, and subcultural membership. Consumer society establishes demonstrable thresholds on items which indicate status, value, and belonging to a particular subculture (Spencer 2011). In such a system, living in poverty, characterised by material deprivation, instils a sense of humiliation and exclusion. Under these conditions, crime becomes a method by which socially and economically disadvantaged individuals avoid such humiliation and assert their participation in society by achieving what is seen as culturally necessary. The individual or community engages in deviant or criminal behaviour as a method of minimising the perceived difference between subcultures, and re-establishing their concept of worth and identity. Criminality is seen as justifiable, and minimised, and the concept Identity becomes woven into rule-breaking (Hayward & Young, 2004). The role of interacting with

society to shape identity is also a key concept in social constructionism which suggests that the persons relational identification, and their perception of their role within society, will shape their concept of self (Gergen, 2015).

The social constructionist perspective, emphasises the construction of the person's identity through their real, or perceived, social role; and the identity is constantly influenced by their social environment. A person's criminal behaviour can be seen as not only evolving from the society they find themselves apart of; but also facilitated and maintained by their perception of their world. Rannala (2012) found that criminals experience different social realities from the general population. Rannala questions whether social structures and institutions such as education, justice, and public health, influence a person's identity, self-perception and their optimism or pessimism for their future. The principal tenet of social constructionism is that there is no objective reality and everything is constructed through interpersonal relationships and interactions, and on cultural conditions. People ascribe meaning to their experiences which allows them to interpret their implications, creating a new meaning for the person (Gergen, 2015). The socialist constructionist view maintains that the person, particularly young people, attempt to define themselves through multiple social and personal interactions. This can lead to conflicting and competing representations of the self. Phelan, Yu, and Davidson (1994) proposed that through social constructionism, people develop multiple 'worlds'. These worlds comprise the person's subcultures within their ecological system, such as family, peers, and employment; and each can require the person to adopt a different identity (Gergen, 2015). This would mean that

professionals are potentially presented with the person's adapted sense of self, which they deem appropriate to the 'world' they find themselves in.

The pertinent concepts of Social Constructionist Theory are further elaborated within Personal Construct Theory, the individual's construct of self and their world is constrained by actual reality; and in this way constructed identity, interpretations of reality, and actual reality are related. Therefore, personal constructs are not necessarily 'real' and may not be morally positive. Kelly (1955) suggested that personal constructs serve to provide the individual with interpretations and explanations that are personally believable and beneficial, and effectively assist in regulating and governing one's life. Personal Construct Theory and social constructivism highlight that an offender can adapt, adopt, or conform their identities to take on a criminal identity related to their deviant behaviours.

Narratives and Narratology

Narratology is the science of narratives (Bal, 2009; Genette & Lewin, 1980; Mieke, 1996; Prince, 1982). However, according to Onega and Landa (2014) the field has been dominated by the restrictive structural view intent on a rigid form of narrative analysis. This has led to a common view that narrative analysis is exclusively based on linguistic narratives, that would be traditionally seen in the form of storytelling or a movie. The linguistic or novelistic format of narratives relies on a narrator to structure and deliver the narrative. Yet, according to Onega and Landa (2014), this form of narrative analysis is too restrictive and does not consider communication

through drama, images, and non-verbal communication. They argue that narratives do not take the shape of literary theory by following a formula of spoken word and listener; instead emphasis is placed on the communication of the message, whether that is done through language, action, pictures or 'psychological representation'. Onega and Landa (2014, p. 3) define narratives as "semiotic representation of a series of events meaningfully connected in a temporal and causal way". Semiotics is the process of making meaning of an event, or series of events, and being able to interpret and communicate that meaning to oneself or others. Under this definition, narrative is the ability to process, designate, apply significance to, and communicate events in any form. Emphasis is placed on communication of the narrative rather than the spoken word (Barthes, 1977).

Onega and Landa's (2014) definition of narrative, looks at a broader sense of what offender narratives can explain about their behaviours; through the interpretation of their actions, and by examining the behaviour in the context of how the criminal makes sense of their actions in the setting of their life and identity. Presser (2009) believes that criminologists have traditionally placed emphasis on the criminal's story but they have not delved deeper to explore whether offender narratives can provide explanations for the crime.

As noted by Onega and Landa (2014) the term and concept of narrative within the literature is structural and rigid, and generally presumed to relate to the linguistic concept of 'narrative' – as a story, with a narrator, and a listener. However, there is

growing acceptance that narrative refers to more than just the external expression of a story, and instead can also be the individual's internal process of interpretation of experiences, events, or emotions (Brown, Morris, Nida, & Baker-Ward, 2012; Pickreign Stronach et al., 2011; Siller, Swanson, Serlin, & Teachworth, 2014).

Vaughan (2007) proposed that the internal narrative moves through three phases, discernment, deliberation, and dedication. Significantly, Vaughan's research was conducted with criminals and centred on the role of internal narratives in their desistance from crime. With regard to *discernment*, Vaughan suggests that the person's internal conversation begins with their review of life experiences with reference to past outcomes. In this way, they review the meaning of the experiences and the emotions they evoke. The next phase, *deliberation*, is a continuation of the internal narrative, as the person considers a comparison of the selves – the self, and associated identity, and role that the experience relates to; compared to the self that the individual wishes to be. Vaughan concluded that as the person considers their identity in this phase, they also consider how their identity is viewed by others and this influences their commitment to their current sense of self, or their adoption of traits they perceive as representative of the identity and role they wish to have. Finally, the person's internal narrative reinforces their acceptance of their current identity; or the role and identity they adopt; and they internalise (through emotional rationalisation) and externalise (through behaviours) their *dedication* to that identity.

A simplistic example of Vaughan's application of these internal narratives to criminal desistance involves the person considering reviewing their experiences, criminal identity, and associated lifestyle. As the person deliberates on their identity and the impact that has had on them, and compares who they are with who they want to be, they may make a decision to strive for a better identity and role. In this way, they may adopt traits and behaviours conducive to their desired identity; and desist from criminal and antisocial behaviour. Again, in the final phase, the person will consider their new identity and they may commit to it believing that their new identity is inconsistent with ongoing criminality.

Baumeister and Newman (1994) proposed that individuals make sense of their lives when they position themselves as the main character within a story, or narrative, that reflects their understanding of their experience and circumstances. The narrative the individual creates about their experience will include 'actors', who represent others involved in the event (Bruner, 1990). The narrative is based on the individual interpretation of single incidents, or a series of life events; and is comprehended through the prism of past experiences and related psychological, physiological, sociological, and biological responses and knowledge, built up over their life. Bruner (1986) introduced the use of narratives in scientific research, and proposed that a person's narrative can indicate their understanding of their experiences as situated within their personal capacities and social connections. He termed this awareness and knowledge as 'narrative knowing'. Hyvarinen, Mikkonen and Mukdork (2008, p. 225) believe that narratives and narrative knowing can have varied functions; "the functions

and roles that narrative can perform, as a particular form and structure of discourse; as a form of knowing the social world; as a perspective and frame of action; as a form of human identity; and as a mode of human interaction".

With this in mind, narratives are a representation of the person's perception of their life events; providing a systemic understanding of the weight and value the individual places on their experience, their social status, their personal interactions, their intention to act, their identity, and their social role. Polkinghorne (1996) described this as an opportunity to understand human experiences through the person providing a comprehensive and multidimensional explanation of their understanding of the events. The possible correlation between a person's experience, and the narrative conceptualising of their understanding of those experience; and their associated emotions and behaviours; has been explored in multiple psychological fields; such as social psychology (Bruner, 1990); clinical psychology (Barker, Pistrang, & Elliott, 2015); Narrative therapy (Vetere & Dowling, 2016); neuropsychology (Maskill & Tempest, 2017); and investigative psychology (Canter, 2010; Ioannou, Canter, & Youngs, 2016; Youngs & Canter, 2013).

The concept that narrative identity is not necessarily 'narrated identity' was accepted by McAdam and McLean (2013, p. 233) when they concluded 'narrative identity is a person's internalized and evolving life story, integrating the reconstructed past and imagined future to provide life with some degree of unity and purpose'. Therefore, narrative identity is more than the telling of a story; they are not simply the

individual's ability to recall episodic and autobiographical memory, they are the inclusion of the contextualised emotional, perceptual, physiological, and mental states, which the individual references when considering their experiences. The incorporation of the whole self by the individual, influences how they see themselves, their identity, role, and the world in which they live (Burch, Jaafar, Weigle West, & Bauer, 2008).

Narrative approaches to identity

There are a number of elements associated with criminal action. It is necessary to give consideration to the criminal career and the progressive development of criminal behaviour over time. The characteristics of criminal actions can be attributed to learned, or refined, behaviours which have been utilised and honed from such acts as childhood defiance, interpersonal conflict, or adolescent antisocial behaviours, to more distinctive and practiced acts of criminality. However, attempting to evaluate the criminal solely from assessment of their criminal history and behaviours over time, provides little value is understanding their motivation and behaviours to engage in criminal acts. Therefore, extrapolating the personalty traits of offenders from their evolving criminal behaviour does not provide pertinent information which might allow for additional insight on their motivations for criminal acts (Youngs 2004).

Yet, understanding the criminals path through their criminal career can provide valuable information on their motivations, cognitive distortions which permits the behaviour, and their criminal actions during the offence (Farrington. 2007). Ontogenetic theories of criminology propose that there are divergent subpopulations

within the general population who are more susceptible to engage in criminal acts (Nagin and Paternoster, 2000). In attempting to evaluate the influences on the subpopulation which leads to criminal behaviour, consideration is given to the process of maturational development, whereby development occurs in fixed stages and sequences. It is presumed, therefore, that behaviour evolves and manifests itself in the same sequence and stage of development for the majority of the population. Theories of population heterogeneity which propose criminal subgroups emphasis the causes of criminal behaviour are situated in the persons early life; and from which, personality traits, features, and social influences, evolve. Presumptions can then be made that as the person ages, behaviours become established as normative, and internalised (Carlsson and Sarnecki, 2016). These behaviours can then be seen as stable and consistent, and predictable; but are prone to change as the person ages, which can lead to alterations in the type of crime and execution, or in the persons motivations to engage in the criminal action.

Maruna and LeBel (2012) found themed scripts which could be used to explain why some criminals continue to engage in criminal activities while others desist. The assumptions that criminals share characteristics, personal and social constructs, and criminal actions, can become enmeshed in maturational development, supports the view that criminals can be seen as a definable subgroup within the general population. However, the predictive and measurable value of this information as it relates to specific criminals, or further refined to subgroups within the criminal grouping, is questionable.

In contrast, the narrative model proposed by Youngs and Canter (2004) identifies the potential for greater understanding of criminal behaviours when hearing the offender explain those criminal actions. Analysis of the narrative provided by criminals as they discuss their crime, has been proposed to allow for greater exploration of the nuances of criminal acts (Canter 1994); and divergences in behaviours before, during, and after the crime. The narrative model proposes the possibility of measurable changes in the criminal's behaviour and perceptions of their crimes, and can therefore highlight traits significant to the offender type and offence (Carthy, 2013). Through the narrative model, exploring the significance and meaning of these traits for the offender can uncover how they relate directly to the activation of behaviours; and the person's sense of personal and social constructs. Exploring their actions, motivations, and perceptions, with the criminal allows for those factors to be contextualised, providing additional meaning and explanation for the criminal acts.

Dominant narratives

McAdams & Cox (2010) propose a conceptual view of the self across the life span. They suggest from infancy, even before the self emerges, the person is a *social actor*, orientated towards survival and social contact. As the person develops the role of *motivated social agent* follows, whereby the person seeks to achieve goals and find reward in their social world. In this stage, the person will measure what they hope to be and achieve, against how they see themselves and what is attainable, at that point in time. The final view of self is that of *author*, where the task of identity development

comes to the fore, and the person calls on their past and current experiences to construct a hoped-for future.

Self-narratives provide the individual with the opportunity to not only express their experiences of a particular time and place, but also to situate those events within their past understanding and evaluations of experiences. This allows the person to create meaning from the experience which is relevant to them; and consistent with their knowledge and understanding; providing them with continuity, and a sense of self and their world, which is continuous through time. Bruner (1991) articulated the view that narratives can help make sense of experiences, particularly those that fall outside of expected or past experiences and emotional references which have been relied upon previously. The narrative situates the unexpected or troubling event within a framework of understanding based on experience, knowledge, and cognitive abilities; making sense of the event for the person and expanding their concept of self, which in turn can be referenced to understand future experiences. This process of integrating past, present and anticipated future experiences, and situating the self within those experiences, is the cornerstone in developing a life story (McAdams, 1988).

Tomkins (1979) suggested that the development of narrative identity, based on narrative scripts, begin to be developed in childhood, and within which the person situates all of their life events. Adler (1927) proposed that the scripts developed from the earliest memory creates the theme for understanding of future life experiences and the development of personality. In developing narratives, scripts, or life stories, the

person strives to maintain continuity of their world and sense of self. The content, portrayal, and their role in the story, will provide the individual with a narrative they are content with, and one that fits with their concept of self. This view of their personality, identity, their world, and their position within their would, will be expressed in their dominant narrative; and those events that do not fit with the dominant narrative will be rejected. In this way the structuring of the person's concept of self and their preferred portrayal of self to the world, is selective (McAdams, 1993). The encapsulation of life story narratives promotes the view of a learned self which the person portrays outwardly; and the dominant narrative of self is expressed through interactions with the world. Therefore, the dominant narrative becomes enmeshed with expression of personality and the portrayal of identity; and the behaviours expected from, and associated with that identity. Canter (1994) proposed that understanding the dominant narrative, and its influence on the expressed identity, can explain criminal action, insofar as a crime is an enactment of a story where the criminal is the central character.

The development of the character role as suggested by Youngs and Canter (2008) is founded on the principles proposed by McAdams on the relationship between a person's dominant narrative, identity, and the life story. McAdams suggested that narrative identity could be seen as an evolving life story; "a way of telling the self, to the self and others, through a story or set of stories complete with settings, scenes, characters, plots and themes" (McAdams, 1997, p.678). He proposed that narrative identity is a dichotomy of communion and agency themes. Agency is a representation

of a person's self - expression, achievements and power; while communion is manifested through the emotional connection with others. These contrasting factors are described as having an antagonistic relationship (McCabe and Dinh, 2016) with agency seen as an egocentric, selfish expression relating solely to the self; while communion concerns itself with others. Bakan (1966, pp. 14–15) introduced the concept of agency versus communion "two fundamental modalities in the existence of living forms, agency for the existence of an organism as an individual and communion for the participation of the individual in some larger organism of which the individual is part". While Bakan implied conflict between agency and communion, as the person seeks the more positive attributes for themselves rather than others; Abele and Wojciszke (2007) argue that communion is consideration for others, and is present in all social interactions; whereas agency is an internal process of goal-pursuit and related drive, where the person's ability to achieve their goals will influence their sense of self.

According to Metzinger (2009) agency is related to a positive sense of self which is achievable through the person's ability to exert control over their actions and thoughts. Given this strength in variance, McAdam's proposed that the qualities of agency and communion are measurable through exploration of the person's narrative; and their portrayal of the themes, roles, and details of their stories. Within these factors McAdams identified character traits which he called imagoes. He believed that these imagoes were the idealised versions of self, portrayed by the person; and the dominant narrative on how they wished to be seen, both on self-reflection and external expression

to their world. McAdams described the Agency imago as masculine and the Communion imago as feminine; and proposed characteristics, emotions, and roles, that could be attributable to both. He suggested that the imago was not a definition of a person, but instead the adopted representation of the self which the person wished to portray in their life story.

For Currie (2009) the imago, protagonist, or character, of the life story is not simply a reflection of the person. Instead he describes it as a property of the person and is seen as a medium to provide them with an explanation of who they are, and what they have experienced. The narrative is seen to represent connections which represent the person's motivation, thinking, decision making, and circumstances. The development of a character in life-stories is the instigator for action, or at least the motivation to act, because character traits and associated behaviours are fundamental to the development of a character of substance. Therefore, the narrative not only recounts experience but can ignite future action.

Youngs and Canter (2009) considered the criminal's narrative imago, and the interpretations adopted by the offender in presenting their life story or criminal action. Accepting McAdam's view that the imago is not a defining characterisation of the person, they considered the criminal expression as an observational position taken by the protagonist in the crime story. Emphasis was also placed on the expression of role given to the other 'actors' in the protagonists story. The criminals portrayal of other actors (such as victims) and their interpretation of the interactions, can be informative

in explaining the meaning of the crime interactions, and the perceived roles adopted by the criminal and victim during the crime.

The Narrative Action System draws on the dominant narrative themes, and the criminal's portrayal and interpretations of their sense of self as the protagonist in their story; and the roles assigned by them to other characters. Canter (1994) found that offenders will reference a finite number of narrative themes from which they have experience of; and from these themes identifiable narrative action roles can be taken. In turn, these narrative action roles can be attributed to offending styles and criminal action patterns. Youngs and Canter (2012) proposed that criminal pattern of behaviours could be categorised as consistent narrative themes; and where dominant themes were held by the offender, these themes were found to be the instigators of criminal behaviour and could shape the criminal action.

The Theory of Mythoi

The structuralist view of narratives, which situates them within a linguistic and novelistic framework, is the foundations of Frye's (1957) seminal book, 'Anatomy of Criticism', and his theory of mythoi which it introduces. Frye's work was directly used by Canter, Kaouri, & Ioannou (2003) in the original development of the Narrative Action System, as a framework for analysing and categorising offenders narratives into criminal roles, Frye refers to four narrative elements or generic plots of literature which he calls mythoi. Frye attempts to explain narratives from a literary context through the use of fictional, primarily mythological, literature. However, he advocates for broad literary explanations of narratives and suggests that the term goes beyond the

process of narration. Frye (1957, p. 77) concluded ‘the word narrative or *mythos* conveys the sense of movement caught by the ear, and the word meaning or *dianoia* conveys, or at least preserves, the sense of simultaneity caught by the eye. We *listen to* the poem as it moves from beginning to end, but as soon as the whole of it is in our minds at once we "see" what it means’. In this, Frye acknowledges that the process of narrative understanding has an internal and external structure; that of interpretation and expression.

The use of narratives in psychology has led to a generalised recognition that there are finite ways to express a story (McAdams, 1985; Polkinghorne, 1996); and predominately this has considered Frye’s proposal of four categories of ‘mythical archetypes’, or broad literary genres encompassing storytelling; “the romantic, the tragic, the comic, and the ironic or satiric” (Frye, 1957, p. 162). Frye believed that society and individuals have “associated clusters of views” or themes (p102), and that these themes represented the protagonist within their story, the role other characters played, and how they interpreted their interaction with others, and their world. The concept of clusters of views is also held by Boje, (1991) who suggested that general truths for a group of people at a time and place can be referred to as a master narrative; that is a dominant narrative or theme. Again, referring to novelist structures, Frye believed that the narrative themes were cyclical, and presented an individualist definition of the narrative, but also the potential for a ‘story’ which was a hybrid of themes. He wrote “tragedy and comedy contrast rather than blend, and so do romance and irony, the champions respectively of the ideal and the actual. On the other hand,

comedy blends insensibly into satire at one extreme and into romance at the other; romance may be comic or tragic; tragic extends from high romance to bitter and ironic realism" (Frye, 1957, p. 162). In this cyclical concept Frye likened his theory of mythoi to seasons, and attributed similar traits to the dimensions of his theory.

Frye equates *Comedy* to Spring, which he sees represents new possibilities, and newborn societies as they have overcome the difficulties which came before in a cold Winter. The protagonist seeks love and is full of hope. Frye believed protagonists of this narrative are optimistic, positive, and do not experience anxiety about their circumstances. Frye sees *Romance* in the terms of Summer, and the warm content achievements of the protagonist having overcome conflict and survived adventure. *Tragedy* is signified by Autumn, which is the death of nature, and the similar risk it poses to the hero of the story. This dimension is dominated by bad characters who wish the protagonist harm. The final archetype is *Irony* and is associated with Winter. Here the protagonist sees themselves as lacking the qualities to complete what is being asked of them. This dimension places emphasis on the person's inadequacies and overwhelmed by the anxiety associated with the task they face. However, during this the hero attempts to reorder the chaos and find a solution to their difficulties.

It is recognised that Frye's theory of mythoi is a conceptual theory of literature intended to explain the actions and views of protagonists within a story. Yet, from a psychological standpoint the concept of categorising narrative themes to better understand the individual internal interpretation of their experiences proved a useful tool (McAdams, 1985; Polkinghorne, 1996).

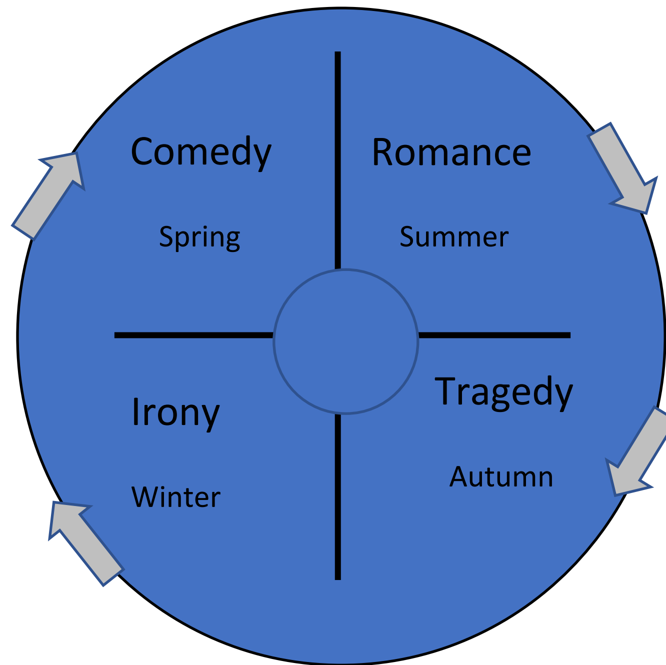

Fig 2.2. The Theory of Mythoi

The Narrative Action System (NAS)

The NAS is a conceptual proposal that narratives could provide insight into criminal identity and personality characteristics was based on life story principles proposed by McAdam (1985). The NAS proposed that narrative themes exist within the accounts given by criminals when describing their criminal actions. McAdam's (1991) suggested that these accounts can be categorised and as such a framework could be developed which would allow for the analysis of the cognitive processes, motivations, and behaviours engaged by the offender during their criminal acts. The analysis of the criminal's interpretation of their behaviour was considered to offer the potential for

gaining a greater understanding of the antecedents of crime, and the experiences of the offender during and afterwards. Exploration of the criminal's interpretation of their criminal actions also presented the opportunity for a collaborative relationship between psychology and criminal justice, from a new perspective. Canter (2008) considered, that instead of viewing criminals as active agents in their actions, sociological, biological and cultural perspectives evaluated the criminal as a passive agent. He argues that this approach fails to assess the potential information which could be obtained from the criminal through the process of narrating their perceptions and interpretations of the event (Agnew, 2006); actions (Canter, 1994); and interactions (Ibarra & Barbulescu, 2010). In having the criminal situate themselves within the narrative of their crime, whereby they are active agents in the event, can provide details on the operational details of the crime, such as planning and method, and have relevance in understanding the offence Modus Operandi and Mens Rea where levels of criminal responsibility are determined. The analysis of the criminal narrative and the categorising of the thematic features could allow for a systemic method of understanding criminal actions.

The integration of theories on the criminal narrative (Canter, 2004) and life stories (McAdams, 1985) presents the opportunity to explore the criminal's expression of their action within their perceptions of their life experiences and sense of identity. Canter (2004) consider the person's evolving life story as the foundations from which to investigate their criminal behaviour. The offender's narrative about their crime is informed and contextualised by their life experiences; and therefore, understanding

their story, and their criminal behaviours will "tell us about how he [criminal] has chosen to live his life. The challenge is to reveal his destructive life story, to uncover the plot in which crime plays such a significant part" (Canter, 1994, p.299). The criminal's interpretation of their criminal actions also presents information on the role they assigned their victim, their motivations, their relational identity, and their world view.

Research conducted by Canter and Heritage (1989) on the role assigned to the victim, by the offender in stranger rape cases led to the development of a three factor model (Person, Object, Victim) which offered insight into the criminal's narrative expression of the victims role in the sexual assault. The extrapolation of the criminal's narrative, contextualised to their behaviour; and perceptions of the victim's role in the crime, allowed for the correlation between narrative and behaviour to be identified and categorised. This approach allowed for a deeper understanding of the criminal's actions.

The process of developing a method to categorise criminal narratives began with research conducted by Canter, Kaouri, and Ioannou (2003). The research considered Frye's Theory of Mythoi and examined the roles a criminal adopts when describing his criminal action. Their study gathered stories from 161 male offenders, of which 138 were incarcerated in prison and 23 were serving community service. The researchers hypothesised that within these stories identifiable regions, or themes, would emerge which could be attributed to Frye's archetypal mythoi. The participants were presented

with twenty role statements "representing the type of role it was hypothesised the offender was playing" (Canter et al., 2003, p.7) during the criminal activity. Within this framework, the statements reflected emotional and action states which the researchers identified as indicative of each role. A five-point Likert scale was used to evaluate the extent the offenders agreed with, or disagreed with, the role statements. The researchers used Smallest Space Analysis (SSA-I; Lingoes 1973) to analyse the data and found that the offender roles could be differentiated into four themes; Adventurer – type (Hero), Revenger, Victim, and Professional.

Canter et al., (2003) found that criminal's self-perception during their crime narrative provided a dynamic story, within which they portrayed themselves as the protagonist; and analysis of the role statement responses suggested that offenders act out identifiable narrative roles while engaged in criminal activities. The conceptual classification of the narrative roles was based on Frye's Theory of Mythoi; and Canter et al., (2003) concluded that the four identified roles related to Frye's archetypes and story forms of comedy (Spring), romance (Summer), tragedy (Autumn), and irony (Winter); and suggested a relationship between Adventurer and comedy, Victim and Tragedy, Professional and Irony, and Revenger and Romance. Canter et al., (2003) argued that their research provided a method of categorising criminal actions into one of four dominant narrative themes; and from that roles, behaviours, traits, identity, and motivations, can be prescribed to offenders within that categorisation. Subsequent research by Ioannou (2006) and Youngs and Canter (2012) found consistency with Canter et al., (2003) findings related to the characteristics of themes being portrayed

by criminals as they interpret the role they played in their crime. The identification of themed behaviours or interpretations during criminal action allowed for greater understanding of the criminal identity, behaviour, and motivations; and the categorising of criminal narratives onto the dominant themes.

Therefore, it is argued that criminal narratives can be seen as a representation of the person's identity, which draws on their past experiences, concept of self, and social identification. According to Maruna (2001), the criminal's narratives provides them with an opportunity to disassociate from their actions which permits them to reinterpret their criminal acts as acceptable or justifiable behaviours. This reinterpretation of behaviours is therefore, founded in personal and social constructs of how they see themselves and their world. Presser (2009) found that criminal narratives can be a precursor to criminal behaviour, proposing that narratives play an influencing role in initiating behaviour. Through narratives the person makes sense of their circumstances and refines their identity, and the roles and behaviours associated with that identity. Where criminal roles are a component of the person's constructed identity, the narratives are then central to their criminal activities (Presser 2012). Therefore, criminal narratives become interpretative tools, and can enhance the understanding of motivational components of criminal action.

The Narrative Action System (NAS) proposed that the criminal roles identified within the system and extrapolated from the Narrative Roles Questionnaire, have specific traits that are characteristic of the role. It is proposed that these statements are

consistent with the perceptions the individual has of the identity; and are representative of the actions and emotions they associate with that role. The characteristics of the four roles identified using the NAS are Professional – Adaptive Adventurer; Hero – Expressive Quest; Victim – Integrative Irony; and Revengers – Conservative Tragedy.

Hero

The Hero protagonist sees themselves as an adventurer or as being on a mission. They portray their actions almost as if 'righting a wrong' whereby they defend their honour, or that of others; and act against what they have determined is injustice (Canter & Youngs, 2009). They see themselves as antagonised into action for, what they see as, justifiable reasons. However, they may also perceive their actions as adventurous and exciting. Statements attributed by the NRQ to the Hero role include; It seemed fun; I found it interesting; It was like being on an adventure; I was acting like a hero.

Revenger

The role of Revenger is seen as being linked to the protagonist having perceptions of a struggle or conflict. He may see himself as facing risks and danger, and his actions will see him challenge these dangers as he fights for revenge for wrongdoing. Interestingly, this criminal role is related to love and romance, the person may see themselves as justified in engaging in conflict and punishing what has harmed the integrity of what he views as important. According to Frye (1957, p. 187) "the conflict assumes two main characters, a protagonist and an enemy. The more demonic the enemy, the more divine the hero". Statements attributed to the role of revenger by the

NQR include; It was like being in control; It seemed right; I was acting out of revenge; It seemed like the manly thing to do; and I found I couldn't help myself.

Victim

The role of victim is set before a backdrop of a tragedy, whereby the protagonist considers themselves an 'extraordinary victim' but despite this continues to confront danger and challenges. The victim role is passive insofar their tragic, unfair, or impoverished circumstances are inflicted on them; and they were not given the same opportunities as others to avoid their situations. They see their crimes as necessary, and justifiable; and they will often minimise their actions and suggest their actions were not as bad as they could have been; or as bad as what others have done. They may see their punishment as being disproportionate to their crime, allowing them to maintain the perception of self as victim. NRQ statements relevant to the role of Victim include; I was doing it because I had to; It was like being a victim; It seemed like the only thing to do; I was acting like I wasn't part of it; and I didn't really want to do it.

Professional

The Professional offender perceives his criminal behaviour as an occupation, which he himself is skilled and qualified to engage in. The professional sees himself as an 'expert' and as having skills and awareness beyond others. To demonstrate his expertise, he may engage in behaviours designed to emphasise his skill, potentially engaging in actions which may be obscene or shocking to highlight the distinction

between the professional and other criminals. The professional is based on Frye's (1957) irony theme whereby the individual gains insight into the differences between reality and the appearance of reality. He becomes reliant on his experience and skills during his criminal action; and justifies his behaviours as necessary. The professional considers his awareness and expertise as a positive status and there willingly adopts the identity and role. NRQ statements attributed to the professional include; It seemed routine; I was doing a job; and It was like being a professional.

The challenges in defining narrative identity

The process of defining narrative identity faces many challenges; from considering the terms used in the literature to refer to the concept – such as 'narrative action', narrative role', 'self-narrative', 'life story', 'autobiographical narrative', 'story of self' and 'personal myths' – to the complex task of defining what an individual's narrative represents. Narrative can be described as a personal account or story containing a plot, characters, a scene, and a developing storyline leading to conclusions; or if a narrative is simply the retelling of events with personal or societal interpretations, explanations, and perceptions of what happened. Ward (2012) outlined further difficulties when he noted the difference between narrative products – the concrete accounts presented by the person; and narrative processes which involve the construction of the narratives. When considered in the context of narrative identity, the ability to create narratives is seen as an essential part of human nature however the story does not define the person (Corballis, 2011); 'while engaging in the constructions of narratives is something that

human beings do, it does not necessarily make them what they are' (Ward, 2012, p.252).

Bamberg (2009) noted three considerations when situating identity within narratives. He suggested in defining personal narrative identity it is necessary to recognise the dynamic nature of life experiences and the individual's search for continuity of self as changes occur over time; it is also necessary to recognise the distinctiveness of the self, and finally the person's agency. The individual's strive for continuity and familiarity to address and understand life experiences requires them to self-reflect on previous actions and outcomes, which in turn promotes and reinforces the person's sense of self. White and Epston (1995) found that the person's desire for continuity and use of self-reflection are the precursors for developing a dominant personal narrative. They found that the expression of externalised behaviour is a form of self-reflection from which the person can demonstrate continuity of motivations, actions, and language. Youngs & Canter (2012) found that in criminal action, continuity and self-reflection can be used to extrapolate dominant narratives associated with action themes. Ward and Marshall (2007) concluded that a narrative identity is dependent on the person's ability to reflect on their commitments and what is important to them; and these factors will evolve over time, and across the lifespan, and are influenced by life experiences, circumstances, and interpersonal relationships. They conclude that a person's narrative identity "is a story with characters, a set of themes (a plot) and a script that unfold across time in a relatively coherent manner" (Ward & Marshall, 2007, p.281). Contrary to this view, Strawson (2004) concluded that some

individuals express their narrative identity in episodes; influenced solely by their current appetitive or adverse circumstance or experiences and without reference to their past or hoped-for future. However, Criss (2010) queried whether what appears to be episodic responses, were related to the individual's capacity to activate memory through encoding and retrieval processes. Yantis (1988) proposed that memory retrieval and subsequent behaviour activation can occur at discrete levels, triggered slowly from a resting to an expressed level.

Following their analysis of offender behaviour across various offences, Canter and Youngs (2009) found that criminal action can be understood and differentiated using the Narrative Action System. However, their research was heavily reliant on themes derived from crime scene analysis and the associated criminal actions. Presser (2009) identified different narrative themes which could be attributed to particular crimes. However, he acknowledged that further research was required to better understand the variations in offender accounts of their criminal action. When examining crime type, emphasis would need to be placed on the consistency of accounts and themes provided by the offender, and any variations that might be given over time, in different contexts, and to different audiences. Canter & Youngs (2009) considered the underlying psychological concepts provided in criminal narratives; and identified stable components within the accounts which they believed constituted narrative identity, such as agency and communion (McAdams, 1993; Canter 1994)

Youngs and Canter (2012) further developed the concept of narrative identity and roles, and their relationship to offending behaviours. Emphasis is placed on the interaction of identity description and criminal actions to allow for the categorisation of motivational roles. McAdam's work provides the core assumptions underpinning the Narrative Action System. However, McAdams proposed the individual's ability to integrate life experiences into coherent narratives, which in turn is influential on personality traits and expression, is only one component of a person's personality. McAdams and Pals (2006) proposed an integrative framework to consider the constituencies of personality through the existence of five components of personality whereby the person emphasises evolutionary tasks (survival and reproductive tasks); willingness and ability to engage in experiential tasks; personal emphasis and value on attaining goals; personal narratives and integrated life stories; and cultural norms and practices. McAdams (2008) acknowledged competing theoretical viewpoints on the importance of narratives to the sense of self. For example, post-modern perspectives propose that the self is made up of numerous conflicting narratives while realists argue that the self is distinct from the narratives created by the individual to explain their experiences and world.

Ward (2012) highlights the importance of distinguishing the self from the self-concept, noting that doing so allows consideration of the person engaging in self-deception, and mitigates against a person's potential lack of personal insight and self-awareness. He argues that if the self, and self-identity, is defined by the person's belief about their world; their position within it, and who they are; then their narrative on how

they view themselves is based on their perceptions of self, and no further value can be placed on their self-expressions and concept. However, if a person's narrative is based on core values, traits, hopes, and personal and social commitments within their society, then they can be mistaken about the type of person they are, their needs, and whether their beliefs are their own, adopted by them, or imposed on them. Ward believed "common sense" (p.253) suggests that criminals lack significant insight into their motivations and actions; and to fully understand, and have the ability to express a true narrative identity requires the criminal to have a psychological and social capacity to construct a sense of self, which is often not the case.

Youngs and Canter (2012) accept the limited number of dominant narrative themes, and adopt Frye's literary categories of comedy, irony, and tragedy when coding their data. They also refer to McAdams' finding of the self being influenced by agency (power and achievement) and communion (love and intimacy) referring to these themes as consistent elements within some traditions of psychological research. Youngs and Canter proposed that communion was indicative of victim motivated criminal action whereby 'intimacy may be better understood as a measure of the relevance to the offender of the victim and the significance of the impact of the offending on the victim and an explicit desire to affect them' (p.4). Youngs and Canter's emphasises four types of narrative roles evident in criminal action; with each role defined by the strength of influence agency and communion has on it. The conceptualised roles are seen as indicative of criminal identities, which have associated emotional and behavioural traits while engaged in criminal actions.

When considering the development of the Narrative Action System, Ward (2012) regrets that criteria was not provided defining what constitutes the narrative roles. He states, that the NAS attempts to analyse complex factors related to the self and narrative identity, and there is a lack of specification on whether the findings on what makes up the narrative roles are replicable; or even if the narrative themes would be consistently present. When considering the definitions of criminal action roles outlined by Youngs and Canter (2012) in their research, Ward concludes, 'we cannot be sure that another researcher would agree that the four types of narrative roles are evident in each of the case studies analysed' (p.259).

Defining narrative identity, and presumed roles associated with that identity, presents complex challenges. While having predetermined categories within which criminal narratives are placed can be beneficial in presenting data in a coherent manner, there is a risk that analysis can be constrained, and findings narrowed to fit within the criminal role categorisations. In doing so, there is the potential for criminal identities, traits, and roles, to be presented as they are predetermined, rather than examining the influence the offender's concept of self and internalised identity had on their criminal action.

When considering Frye's mythoi archetypes, Canter et al., (2003) deferred to Frye's conclusion that "the fundamental form of narrative process is cyclical movement" (Frye, 1957, p.158); as Spring moves to Summer, Summer to Autumn, Autumn to

Winter, and Winter to Spring. Given this movement, and relationship between the archetypes and narrative themes, Canter et al., (2003) hypnotised that “there will be many hybrids as one type merges into another, but there will be a dominant theme within any area of activity” (p.5). However, their study, and subsequent research did not categorise hybrid themes and consider the variation they might indicate about a criminal’s behaviour, role, identity, and motivation. Instead emphasis continued to be placed on the four dominant narrative themes. This issue of looking beyond the rigidity of the dominant narrative roles identified by Canter et al., (2003) was somewhat addressed by Ioannou, Canter, & Youngs (2017), when they explored hybrid themes within the criminal action system through the emotional experiences of the offender. However, their research considered the blending of the dominant themes - such as Hero/Victim or Revenger/Professional – and did not identify alternative themes and related criminal traits and characteristics which might emerge when a hybrid theme exists.

The challenges of researching prison populations

The current study had substantial difficulty in engaging and maintaining research participants, which threatened the feasibility of the research. Working closely with the Irish Prison Service and Irish Probation Services, it took over two years to achieve an adequate rate of response; primarily due to the lack of willingness among a prison population to participate in research. The difficulty in engaging prisoners in research, and the low rates of participation experienced in this study, is consistent with the majority of studies involving a prison population, where prisoners can actively refuse

to engage, or passively refuse by not responding to a request to participate (Fox et al., 2011).

Brosens et al., (2015) emphasised how conducting research in prison poses practical and methodological challenges for researchers; while Martin (2000) highlighted ethical challenges, and Liebling (2014) noted emotional challenges that the researcher may face when conducting their study. A prison can be a daunting environment for researchers who have never been in a prison before. There are extensive security measures, from providing prove of identity, leaving personal possessions in prison lockers, passing through metal detectors and past detection dogs, every door needing to be unlocked, the noise of metal doors slamming shut, prisoners shouting, and upset families; all of which can be an overwhelming experience for the researcher. Brosen et al., (2015) noted being frequently confronted with their emotions while conducting their research, despite gradually becoming familiar with the prison procedures.

In his book 'The Art of Fieldwork' Wolcott (2005, p. 4) believed "collecting data can be done scientifically, but fieldwork consists of more than collecting data. Whatever constitutes the exclusive '*more*' makes all the difference". Wolcott proposes that 'more' refers to the details obtained in the process of conducting research that adds enrichment to the findings of the study. While this is a valid point, it is also suggested here the 'more' might refer to something much more practical and important in studies conducted within prisons – getting access to prison populations and ensuring adequate participation rates.

Extensive research has been completed on the process of gaining access to prisons, and how to address the methodological and ethical challenges in completing effective research with an incarcerated population (Jeffords, 2007; Lane & Lanza-Kaduce, 2007; Trulson et al., 2004). Unfortunately, comparable research has not been placed on how to achieve higher participation rates among inmates once the researcher gains access to the prison (Hall & Killacky, 2008; Maxfield & Babbie, 2005).

Beyens (2013) suggests that it is necessary for researchers to respond to concerns expressed by prison officials and prisoners to research methods and adapt the process to minimise their concerns. It is also necessary for researchers to be sensitive to the emotional impact their presence and activities in the prison might have on the inmates (Jewkes, 2012). The Hawthorne effect refers to the impact of research participation, and the awareness of being observed, might have on the subjects. As participants are aware of being observed or tested, they perceive the researcher and study in a particular manner and may develop beliefs about the researcher's expectations. This can lead to attempts to conform and provide socially desirable answers, but also lead to behavioural change in the participants (McCambridge, Witton, & Elbourne, 2013). Within a prison setting, researchers and prison officials need to conscious of the potential behavioural changes the researcher's presence may bring about in the inmates and take steps to alleviate any negative implications. While the validity of the Hawthorne effect is debated (see Chiesa & Hobbs, 2008), the researcher's awareness

of the potential emotional and behaviour consequence of their actions and presence is a relevant consideration in conducting research in prisons.

Traditionally, research response rates among prison populations are consistently low. Sample size is dependent on the inmates willingness to volunteer to participate in the study, and this has resulted in low response rates (Fox et al., 2011). Even when off-site arrangements have been made prior to the researcher arriving in the prison, participation rates are subject to change for a multitude of reasons; the prisoner may disagree with the context of the research and how it is proposed to be conducted; they may have had a disagreement with the liaison officer, dislike the researcher, or simply be having a bad day.

Apa et al., (2012) suggested that, while prisons have similar roles, they are individual in their culture, local procedures, and attitude towards research. A challenge for researchers is understanding these differences and adapting their approach and methodology to receive better support from prison officials and access to prisoners. Hall and Killacky (2008) emphasised the importance of developing collaborative working relationships with stakeholders involved in the prison system to improve prisoner participation in research. Hall and Killacky found that occasionally prison officials are not familiar with research methods, they lack knowledge on the necessary profile of prison participants, or they cannot see the benefits of facilitating a research project. Placing emphasis on the positive implications of the research for the prison system may help with precipitation rates and the value prison systems place on

information gleaned from studies. Kim and Clark (2013) found that prisoner participation in research can have positive implications for the inmates in areas of improving mental health and self-esteem; while also at an organisational level when research can lead to improvements in the prison environment or services provided to prisoners.

According to Walsh, Shelton, Trestman, & Kesten, (2014) the opinions of prison officers are not included in devising the research methodology. This tends to be because prison officers are seen as having a different philosophical perspective and role whereby emphasis is placed on safety and security. However, prison officials are significant stakeholders in the research; and play a crucial role in the viability of a study. Where prison officers are not part of the academic development of the study, the researcher is challenged to establish an effective working relationship with the officers and prison officials. This allows for a sense of co-ownership of the study to develop, where the value of the research is recognised by the prison officials; and the importance of working with, and for the prison system, is recognised by the researcher.

Ethical considerations when conducting research in prisons

A significant ethical consideration when conducting research in prison is that of confidentiality. Braye and McDonnell (2012) found that research with prisoners creates power dynamics which the researcher must have a professional response to. For example, the gathering of descriptive data will provide context to the research participants in the study's report, yet this form of data often takes the form of personal

information which the researcher is asking the participant to share with them. Brosens, DeDonder, Dury & Verté (2015) highlight the additional significance personal information might have for prisoner participants compared to the general public. The inmate may experience anxiety that personal information they share may identify them, be shared to their prison file, or negatively impact their case, if they are on remand. In contrast, the prisoner may also feel that if they do not engage fully with the research then this will have negative implications for them with prison officials or officers. The researcher has an ethical responsibility to assure the participants that information shared will be treated confidentially, and engagement or non-engagement with the study will have no negative consequence for them. It is important that prisoner participants in research do not experience, or perceive, coercion to take part in the study. There is a risk where coercion, or perceived coercion exists, it may have a negative impact on participation rates, not only of the study being completed but of future research (Gostin, Vanchieri, & Pope, 2007). It is important prisoners are given the option to engage fully with the research, and they made an informed decision to participate having been given necessary information to help them make that choice. Peternelj-Taylor (2005) suggested that prisoners need to know the risks and benefits of taking part in the research, and the option to ask for additional information prior to agreeing to participate.

In the past, prison populations were easily accessible individuals who could be coerced into participating in research studies. Over time, prisoners have been recognised as a vulnerable population (Hornblum, 1997) and a socially excluded group

(Murray, 2007), and have been afforded protection from ethically questionable methods of research. However, Lucic-Catic (2011) argues that the protection afforded prisoners has become overly protective; and contributes of the restrictive environment that exists within prisons which impacts negatively of research. The challenge faced by researchers who see a value of research in correctional settings, is to accomplish what is practically achievable while being ethically justifiable (Dalen & Jones, 2010).

Background and theoretical context for the research study

In proposing research on the relationship between biosocial, biological, or neurological processes to explain criminal behaviour, researchers must be cognisant of historical implications of research in the area; and the subsequent social mood it generated. Crime preventions strategies in the 19th and early 20th centuries considered whether individuals contained biological predispositions for criminal behaviour. Where predispositions were identified, preventative strategies called for these 'substandard' individuals to be limited in their contact with society; and even went so far as prohibiting them from reproducing (Fink, 1938). Biological crime prevention may still evoke negative reaction considering its past connection to eugenics. This may not be a fair reflection on the current use of bio-criminalist methods. Historical use of biological intervention relied on taking something from the individual, for example, to confirm their guilt or mental health diagnosis; whereas current advocates of biosocial considerations suggest that bio-criminology can be incorporated into existing sociological and psychological approaches, where the emphasis is giving

something to the person by strengthening their resilience and helping them in desisting from criminal activities (Piquero et al., 2009).

Beauchaine, Neuhaus, Brenner, & Gatzke-Kopp, (2008) suggest that modern criminologists that consider neuropsychology of criminal behaviour emphasise the relationship between the person's psychological processes and personality, and the interaction with their environment. Therefore, neuropsychological influences on behaviour and self-concepts are not viewed independently, rather they are seen as part of dual process whereby the individual's social self and biological influences direct their criminal action.

The incorporation of personality into criminology can often be reduced to a factor within a broad mental health diagnosis or social disorder, such as personality disorder or psychopathy (Vaughn, Howard, & DeLisi, 2008). Yet, extensive research has been conducted within various models of psychology and sociology which finds correlations between personality traits and criminal activity; for example, violence (Fox, Jennings, & Farrington, 2015); substance misuse (Flory, Lynam, Milich, Leukefeld, & Clayton, 2002) and sexually harmful behaviour (Hoyle, Fejfar, & Miller, 2000). Despite the acknowledged relationship between personality traits and criminal behaviour, Jones, Miller, & Lynam, (2011) found that there was no major criminology theory that has incorporated personality, identity, and concept of self.

Rationale for this research

While there have been significant research advances in the fields of sociology, biology, and psychology in recognising neuropsychological and neurochemistry influences on human behaviour; criminology has yet to incorporate biosocial considerations into conventional theories. This lack of an integrated approach to incorporate biosocial perspectives maintains the distinction in theoretical frameworks and hinders comprehensive analysis from multidimensional viewpoints.

Traditionally, criminology has tended to place emphasis on crime prevention and the identification of risk factors attributable to an offender which might indicate a likelihood of recidivism. Social and environmental risk factors which are commonly referenced as explanations for the criminal behaviour are degree of education , social status and class, and ethnicity (Short, 1991). Research has also placed prominence on the identification of protective factors which might prevent external (environmental) or internal (psychological) circumstances which would facilitate criminal behaviour. However, until recently crime evaluations predominantly looked at the structure of the crime, and the environment within which the event took place. Under this model, evaluations of criminal actions highlighted the geographical location of the crime, and the psycho-spatial relevance for the criminal (Synnott 2013); the timings associated with the crime, (Cross et al., 2017); and the analysis of the criminal action (Merry, 2018). Analysis of the offender often situates them within the crime, and their role is simplified to that of 'criminal'. While the 'where', 'when' and 'why' of crime scenes and behaviour have been extensively explored; the 'who' – such that a greater

understanding of the offender's concept of self, perceptions of role, and neurological motivations – have often been neglected.

To better understand the influence of perceived identity and perceptions of self has on the criminal role, Youngs and Canter (2012) developed the NRQ. The instrument places the person's concept of their criminal role, and the related motivations, as the primary analysis; and in doing so, attributes personality traits and motivations onto the identified criminal role. In contrast, but with some overlap, reinforcement sensitivity theory considers the effect of reward and punishment stimuli and learned responses; which are motivational components situated within neurological systems. The theory proposes that neurological processes, including neurochemical reactions, will determine the criminal action.

Research aim and objective

The central aim of this study is to consider the influence of neuropsychological processes on criminal actions. Utilising the Narrative Action System the motivations for criminal behaviour can be contextualised through their perceptions of self and their world, and their concept of their identity. The offender's motivations and actions can then be categorised as a criminal action role. The criminal action roles proposed by Canter et al., (2003) have prescribed motivations and behaviours which will be acted out during criminal activity. Gray (1982) proposed that motivations and behaviours are activated and inhibited through neurochemical and neurological processes determined by Pavlovian conditioning. A study examining the correlation between

the motivated behaviour activated or inhibited because of the criminal action role adopted by the offender, and neuropsychological processes of activated and inhibited behaviour, has not been conducted prior to the current study. Whether there are correlations between the criminal roles and neurological processes which activate or inhibit behaviours will add to the understanding of the relationship between the personality traits attributed to a criminal role and the motivations to engage in criminal behaviours.

The main research question is: Are behaviours prescribed to the criminal action roles consistent with neuropsychologically motivated behaviours? In answering this question, it can be determined whether categorising an offender as acting out a criminal role is predictive of future criminal actions.

Chapter Three

METHODOLOGY

Study Design

The aim of the study was to examine the influence of neuropsychological processes on criminal actions. The analysis of neuropsychological processes was conducted using Reinforcement Sensitivity Theory Behaviour Inhibition Scale and Behaviour Activation Scale (BIS/BAS); and categorisation of criminal actions was completed using the Narrative Action System's Narrative Roles Questionnaire (NRQ). The questionnaire allowed for analysis of the correlation between the motivational components of the BIS/BAS and the criminal action roles identified through the NRQ.

Prior to administrating the questionnaire, the researcher consulted with prison officials, seeking their input on the feasibility of the questionnaire to achieve the study's aim. Following their advice, and piloting with a small sample; the sampling strategy, data collection process, and questionnaire were adapted to increase participation. This process is also set out in this chapter.

This study was conducted with a sample of 256 participants; of which 232 participants were serving a custodial sentence with the Irish Prison Service, and 24 had completed a custodial sentence and were engaged with the Irish Probation Service. Data collection took place in three medium security prisons and two low security open prisons operated by the Irish Prison Service. An overview of the Irish Prison Service,

the prison population in Ireland, and the research sites is provided in this chapter. Challenges faced by the researcher in conducting this study with prisoners are also explored; and the practical steps taken to access prisons and participants, and overcome those challenges are set out.

Ethical Approval

Ethical approval to conduct this research was obtained from the University of Huddersfield's School Research Ethics Panel (SREP). Upon receipt of this approval, an application to conduct research within the Irish prison system was made to the IPS. Following an extensive period of ethical consideration, the Director General of the Irish Prison Service and the Prisoner Based Research Ethics Board Committee approved the conducting of this research within the Irish prison system. An application was also made to the Probation Service (Ireland) and, again following ethical review approval was granted by the Probation Service Research Group.

Permission to conduct research from the Prisoner Based Research Ethics Board and the Probation Services Research Group was based on conditions being adhered to. This related to confidentiality for the participant and no identifying information could be retained or published. The researcher could not retain or publish any specific details relating to a crime; or any details which could be linked to a participant or their victim(s). While this was somewhat restrictive and place a limited on the descriptive data that could be collected, it was necessary to comply with these conditions.

To incorporate the international dimension to this study, whereby the academic institution is in the United Kingdom and the researcher and research participants, along with the prisons are in the Republic of Ireland, the researcher adhered to the principles set out in the meta-code of ethics compiled by the European Federation of Psychologists Associations (EFPA) in 2005. The Psychological Society of Ireland and the British Psychological Society are members of EFPA.

Accessing the sample

According to Quraishi (2008) conducting research in prisons should be seen as a privilege, which is not afforded to many researchers. Negotiating admission to a prison for research purposes can be very difficult; and gaining access to a prison sample can be a complex and time consuming task; which can comprise of significant challenges. (Dolan, Kite, Black, Aceijas, & Stimson, 2007; N. James, 2013) To fully understand the process and challenges faced in undertaking research with an incarcerated population, it is important to outline the extent of effort gone through which was necessary to gain access to an Irish prison population.

The initial application to the Research Advisory Panel (RAP), requesting access to the Irish Prison Service was made in May 2014. This involved a presentation of the research proposal to RAP and once the study was deemed appropriate, consent was given to apply for ethical approval to the Prisoner Based Research Ethics Board Committee (PBREBC). In September 2014, following background security checks and ethical approval by the PBREBC, permission was given to access the Irish Prison

Service. This allowed for local arrangements to be made with the Governor's office of each prison. However, due to security concerns and industrial action by the prison officers between October 2014 and February 2015; access to the prison population was restricted for reasons other than family and professional visits.

When these restrictions were lifted, thirteen research visits to five prisons were undertaken between March 2015 to May 2017 (the conclusion of the data collection process). The frequency of prison visits; and availability of liaison officers, was dictated by the IPS. While access was not granted to enter the high security prison (Portlaoise Prison) and the Dochas Centre was a female prison, and therefore not included in the sample population; local arrangements to conduct research in the remaining five prisons could not be negotiated. Unfortunately, very little explanation, other than for operational and security reasons, is given as to why access restrictions are in place in a prison.

Application to The Probation Service (Ireland) for permission to access a research population within their service was made in June 2016. This included an application for ethical approval to the Probation Services Research Group (PSRG). Following consultation and security clearance, permission was granted to conduct research within the service in September 2016. The sample obtained through the Probation Service was 9.38% (n = 24) of the total sample.

Overview of the Irish Prison Service

The prison system in the Republic of Ireland has twelve facilities, (see Table 3.1) consisting of one high security closed prison, nine medium security closed prisons, and two low security open prison facilities. Operational responsibility for the prison institutions is placed with the Irish Prison Service (IPS) and they are charged with ensuring the safety of the prisoners who have received a custodial sentence; those on remand; and those held on immigration matters. IPS comprises of clinical and operational multidisciplinary teams, who establish integrated management plans for offenders based on day-to-day security needs; and medical, therapeutic, vocational, and educational requirements.

Table 3.1. List of Prisons in the Irish Prison Service estate

Prison	**Details and Location**	**Operational Capacity**	**Daily Average Capacity 2017**
Arbour Hill	Closed, medium security. Dublin	142 males	133
Castlerea	Closed, medium security	340 males	292
Cloverhill	Closed, medium security. Dublin	431males	356
Cork	Closed, medium security. Cork	296 males	272
Dóchas Centre	Closed, medium security. Dublin	105 females	116
Limerick	Closed, medium security. Limerick	210 male 28 female	211 males 28 females
Loughan House	Open Centre, low security. Co Cavan	140 males	109
Midlands	Closed, medium security. Co Laois	870 males	818
Mountjoy	Closed, medium security. Dublin	755 males	567
Portlaoise	Closed, high security. Co Laois	291 males	221
Shelton Abbey	Open Centre, low security. Co Wicklow	115 males	98
Wheatfield	Closed, medium security. Dublin	550 males	438

Source: Irish Penal Reform Trust (2019)

Undertaking research in Irish prisons is applied for through the Research Advisory Panel within the IPS. Maintaining the operational function of the prison takes precedence when research proposals are considered; following that, the research must be relevant to IPS and informative regarding IPS or prisoner services. Researcher

access to prisons is only considered when demands on time and resources are available; and with consideration of the expected demands on the prison population regarding time, effort, and volume of research being proposed. The ethical implications of prison research are also considered, with importance placed on the appropriateness of the research questions; and the rights and perceptions of the prisoners and staff.

Table 3.2 Nationality groups in custody under sentence in 2017

	Female	Male	Total	%
African	2	33	35	1.17
Asian	0	23	23	0.77
European Union	4	174	178	5.95
Irish	100	2,565	2,665	89.13
Middle East	0	1	1	0.03
Oceania	0	1	1	0.03
Other European	0	13	13	0.44
South American	0	13	13	0.44
United Kingdom	8	53	61	2.04
Total	114	2,876	2,990	100

Source: *Irish Prison Service (2019)*

Irish prison population

The most recent report from the IPS provides information on the Irish prison population in 2017; when the total number of prisoners in custody was 2,990. Of this number, 114 were females and 2876 were male. The majority of prisoners were Irish (89.13% n=2665); with other national groups categorised as; European Union (5.95% n=178); United Kingdom (2.04& n=61) and African (1.17% n=35) (See table 3.2).

The age profile of the prison population in 2017 showed that the majority of prisoners were aged between 30 years and 40 years old (33.1%, n = 991) (see table 3.3)

Table 8.3 Age profile of prisoners in custody under sentence in 2017

	Female	Male	Total	%
18 to <21	6	128	134	4.5
21 to >25	9	352	361	12.1
25 to <30	25	528	553	18.5
30 to <40	40	951	991	33.1
40 to <50	35	513	538	18
50 years +	9	404	413	13.8
Total	114	2876	2990	100

Source: *Irish Prison Service (2019)*

In 2017, thirty prisoners were serving sentences of less than three months, while 359 were serving a life sentence. In Ireland, mandatory sentencing is imposed regardless of the circumstances, for certain crimes. A murder conviction carries a mandatory sentence. As in other jurisdictions, a life sentence can be for life, and in Ireland the duration is at the discretion of the Minister for Justice who is advised by the Parole Board of Ireland. Temporary release or early release are possible following a number of parole board reviews. Table 3.4 shows the sentences being served by the 2,990 prison population in 2017.

Table 3.4. Sentence duration of prison population in 2017

	Female	Male	Total
<3 months	2	28	30
3 to <6 months	20	151	171
6 to <12 months	21	241	262
1 to <2 years	24	341	365
2 to <3 years	12	312	324
3 to <5 years	13	570	583
5 to <10 years	10	642	652
10+ years	2	242	244
Life Sentence	10	349	359
Total	114	2,876	2,990

Source: *Irish Prison Service (2019)*

As mentioned, the IPS is charged with providing multifaceted support to prisoners as a preventative measure against recidivism. The IPS multidisciplinary operational and clinical perspective is intended to provide prisoners with professional intervention to enable them engage positively with society when they have completed their custodial sentence. The existence of substance misuse, mental health problems, educational deficits, and social disadvantage can often hinder the persons prospects of successful reintegration back to their community. The IPS found that over half of the prison population had not completed formal education, with the majority leaving school before the age of fifteen. In 2008, of 520 prisoners that enrolled with the Mountjoy Prison educational programme, 20% (n=104) could not read or write. Again, according to IPS data, approximately 70% of the prison population in 2017 identified as unemployed at the time of their committal. O Donnell (2008) found that prisoners often come from areas where social disadvantage is a restrictive factor in the person's ability to access education, employment or social services.

Research Sites

Access to the prison population was negotiated through the Research Advisory Panel of the IPS. This allows for local arrangements to be made with individual prisons, based on their operational demands, the accessibility to suitable participants, and the availability of liaison officer within each prison. The current sample was accessed in Mountjoy Prison (Dublin); Limerick Prison (Limerick); Midlands Prison (Co Laois); Loughan House (Co Cavan) and Shelton Abbey (Co Wicklow).

Mountjoy Prison

Mountjoy prison is situated in Dublin city and is the main committal prison for Dublin city and county. Mountjoy Prison is a medium security prison for adult males and has an operational capacity of 554. The average daily capacity in 2017 was 567 prisoners. The Irish Penal Reform Group (2019) found that 34% of the prisoner population identified as being from Dublin.

Limerick Prison

Limerick Prison is a medium security prison for adult males and females. It is in Limerick city and is the committal prison for counties Clare, Limerick and Tipperary. It is the committal prison for females from Munster (counties Cork, Clare, Kerry, Limerick, Tipperary, and Waterford). The operational capacity for Limerick prison is 210 males and 28 females; and the daily average occupancy is 2017 was 211 males and 28 females.

Midlands Prison

The Midland prison is situated in Portlaoise, Co Laois and is also a medium security prison. It is the committal prison for adult males from counties Carlow, Kildare, Kilkenny, Laois, Offaly and Westmeath. The operational capacity of Portlaoise prison is 870, with a daily average occupancy in 2017 of 818 prisoners.

Loughan House

Loughan House is in County Cavan, and is an open, low security prison for males who are considered not to require high levels of monitoring or high security intervention from IPS. The role of open prisons is to begin the reintegration of the person back into the community and focus is also placed on restorative justice components as the person nears the end of their custodial sentence. Loughan House does not have a catchment area and accepts prisoners from within the IPS. The operational capacity of Loughan House is 140; with a daily average occupancy in 2017 of 109 prisoners.

Shelton Abbey

Like Loughan House, Shelton Abbey is an open prison situated in County Wicklow. As an open prison, there are minimum security measures and prisoners having access to ground outside of the prison with limited restrictions. Emphasis is placed on giving the prisoner responsibility for the community and their voluntarily compliance with discipline. Shelton Abbey has an operational capacity of 115; with a daily average occupancy rate of 98 in 2017.

Irish Prisons: Operational considerations

The prison is a twenty-four hour operational system that serves as a workplace, residential facility, medical unit, education centre, among other things; and can potentially be a dangerous and unpredictable setting. The environment can be authoritarian and risk adverse; with emphasis is placed on safety and security.

Facilitating research is understandably done within those parameters. Physically entering the prison involved permission verification (granted by each prison Governor to the researcher permitting entrance to the prison), identity authentication, and airport style security checks. Research visits are also facilitated during times of public access to the prison, and therefore competed with family visiting and professional visits.

While on site, a prison officer/liaison officer was assigned to the researcher and provided an escort through the prison for the duration of the on-site visit. Apa et. al. (2012) highlights the importance of the liaison officer in ensuring the researchers safety, but also in enlisting participants for the research. Prison officers can have a defined view of their professional role, which is based on security and safety (Walsh, Forsyth, Senior, O'Hara, & Shaw, 2014). Having preliminary discussions with the liaison officer and assuring them of the researcher understanding of the prison systems, and experience of working with dangerous populations, alleviated some of the officer's concerns, and freed them up to focus more on facilitating the research. The importance of collaborative partnership between the researcher and the prison officers to ensure the success of the study, for example in recruitment and participation rates, is emphasised by Jagosh et al., (2012)

During the researcher's access to the prison, the ability of the liaison officer to generate interest among the inmates to take part in the research was pivotal. Often the prisoners first engagement with the research was done through an introduction by the liaison officer. Their relationship and status with the prisoners (Fox et al., 2011), along

with the ‘likability’ of the researcher (Trulson, Marquart, & Mullings, 2004) can act as a motivating or discouraging influence on whether the prisoner takes part in the study or not. Synnott (2013) found that the success of the recruitment of research participants relies heavily on the motivation of the liaison officer to facilitate the research.

Temporal issues

Following the security process, and meeting the liaison officer, other factors impacted on the researchers access to prisoners. For example, once inside the prison, the liaison officer would need to go and find the prisoners willing to take part in the study. Given the size of a prison, and that participants may not be in the vicinity, this often took longer than expected; and used valuable time from the exact timetable allocated to the researcher to attend the prison.

Prisons operate strict routines that are designed to provide consistency and clarity for those who live in, and visit the institution. The Irish Prison Service manages a standardised day across all of the prisons in the State, which incorporates four hours thirty minutes for family, professional, and research visits. This rigid timetable negatively impacted on the data collection process, prolonging it beyond what was expected. Access to the prisoners is not permitted during mealtimes, and during these times the prisoners return to their cells. Public access to the prison is not permitted after 4.30pm. As this indicates, the time available to meet with inmates is very small – two hours in the morning and one-and-a-half hours in the afternoon. Fox et. al. (2011) found that conducting research with inmates in the morning generated a lower

response rate than research conducted in the afternoon. The current study had a similar response rate, and while there is no data regarding this – because there was no indication it may be statically relevant – it was noticeable that response rates were substantially smaller during morning visits.

Entering prison – Practical procedures

Arrival at the prison did not mean automatic entry and access to the prison population. The researcher experienced variations on initial entry to the prison depending on the level of operational security in effect. The study was conducted in low and medium security prisons, and the entry process to access the prison population was different depending security levels at the research sites. Accessing medium security prisons involved providing identification, proceeding through metal detectors, having coats and bag containing research materials examined and x-rayed, and proceeding through a canine detection room. Researchers are invited to enter prisons during public access hours only, and therefore arrive at the same time as family members, as well as professional and other visitors; all of which have to proceed through security. This process can take approximately thirty minutes.

Following security processes in medium security prison the researcher waits to be escorted to the main prison areas by a liaison officer. This officer will then recruit participants who do not have a family or professional visit; and are willing to consider being a participant. Following this the prisoner is introduced to the researcher and will either participate or decline to take part in the study.

In contrast, access to a low security facility was less structured, and the researcher visited at times agreed with the prison governor which might yield the most participants and be least disruptive to the prisoners educational or training routines. Following similar security procedures, entry to the main prison area was less restrictive. Once in the main buildings, the researcher met with groups of prisoners and explained the study and process. Individuals then had the opportunity to participate or to decline by simply not approaching the researcher. There was also more opportunity for the researcher to engage with prisoners, and the process was more efficient and beneficial, and produced a significantly higher participation rate.

In the open prison, the participants were facilitated in moving away from the researcher and completing the questionnaire in their own time, at their own pace; while the researcher remained available to answer any questions or clarify any issue.

Psychological Services within the Irish Prison Service

While the IPS is responsible for facilitating the person in completing their custodial sentence, the service is also mandated to assist prisoners in reintegrating back to the community when they leave prison, with the objective of preventing recidivism. It is worth noting the theoretical framework offered by the Psychology Service within the IPS. The service provides individualised treatment plans based on assessed needs, with particular emphasis on mental health and psychoeducational intervention. The IPS Psychology services utilise a Biopsychological Model (Engel, 1981) of intervention,

which offers a holistic approach to working with their prison population. The model considers the interconnection between biological, psychological, and social factors, which maintain or exacerbate the person's social, physiological, or psychological difficulties. Considerations is given to how the person's presentation is manifested in neurobiological factors and their relationship to cognitive abilities and perceptions; and the influence of external social factors. The Psychology Service within IPS adheres to the belief that when these interrelated factors are considered there is a greater possibility of a positive outcome for the individual.

While the IPS have conducted reviews on the use of the biopsychological model with the prison population; these reviews have examined treatment efficacy rather than motivational factors which might be associated with criminal action roles and neuropsychological influencers on behaviour.

Sampling approach and selection

The sampling strategy was developed with reference to the principles outlined by Rahi (2017) who suggested that sampling frames should be utilised to define the criteria of the population from which the sample will be drawn. The sampling frames considered the conceptual framework of the research, the research instruments, and the inclusion criteria necessary to meet the objectives of the study. Accordingly, the criteria for inclusion in the sample population was identified as;

i. adult males,
ii. who were serving, or had served, a custodial prison sentence.

Miles and Huberman & Saldana (2014) advise that inclusion criteria should consider the feasibility of the study, and ensure insofar as possible, access to a sample that can meet the research objectives. The inclusion criteria were based on the NRQ's developed use of identifying narrative action roles of criminals; and feasibility consideration whereby adult male prisoners make up 96.89% (n= 4140) of the operational capacity within the Irish prison system.

Participants

The sample comprised of 256 participants; of which 90.6% (n = 232) were serving a custodial prison sentence, and 9.4% (n = 24) had served a custodial prison sentence and were engaged with the Probation Service. The age range of the participants is from 19 years old to 58 years old. The mean is 35.5 years (SD 7.34). Seventy of the participants (27%) were thirty years old and younger at the time of the research; and 68% (n = 174) were between 31 years old and 50 years old. The remaining 5% (n= 12) were aged between 50 years and 58 years old.

The majority of the participants identified as Irish (74%, n = 189); and twenty-five participants identified as 'Irish and member of the travelling community'. Table 3.5 shows the ethnicity of the remaining 16% (n = 42) of the sample.

The current convictions (the reason for their incarceration at the time of the research) saw a majority for the category 'Controlled Drug Offences' (32%, n = 81); while 'Burglary and Related Offences' (17%, n = 43); 'Damage to Property' (9%, n =

22); ‘Assault and Related Offences (8%, n = 21); and ‘Public Order and Social Offences’ (8%, n= 21). Table 10.2 shows the current conviction and conviction history of the sample. Trends in convictions rates are shown in Table 3.6; and a comparison with the current convictions of the sample can be seen. It is noteworthy that the sample has a significantly higher percentage rate of convictions in ‘controlled drug offences’ (31%) than national trends between 2013 and 2017 (7% - 8%).

Overview of the measures

The BIS/BAS scales and NRQ are imperially validated instruments, widely used in their respective fields of research, (Balconi et al., 2009; Beek, Kranenburg, Taris, & Schaufeli, 2013; Carthy, 2013; Ioannou, Canter, Youngs, & Synnott, 2015; Lankveld et al., 2015). The challenge was then to combine the questionnaires into a workable research design to be used within a prison context.

Table 3.5 Ethnicity of the sample

	Frequency	Percent
Irish	189	73.8
Irish & Member of the Travelling Community	25	9.8
Other European	26	10.2
African	8	3.1
Asian	2	0.8
North American	1	0.4
Central/Sth American	5	2
Total	256	100

Table 3.6 Conviction history of sample.

	Current Conviction		*Most Convictions*		*First Conviction*	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Controlled Drug Offences	81	31.6	112	43.8	124	48.4
Burglary and Related Offences	43	16.8	88	34.4	83	32.4
Hijacking Offences	6	2.3	3	1.2	2	0.8
Weapons Offence	12	4.7	1	0.4	0	0
Homicide Offences	8	3.1	1	0.4	0	0
Fraud	12	4.7	6	2.3	6	2.3
Assault and Related Offences	21	8.2	17	6.6	11	4.3
Public Order & Social Offences	21	8.2	23	9	22	8.6
Kidnapping and Related	8	3.1	0	0	3	1.2
Negligent Acts	12	4.7	0	0	0	0
Damage to Property	22	8.6	4	1.6	4	1.6
Offences against Government	10	3.9	1	0.4	1	0.4
Total	256	100	256	100	256	100

Table 3.7. Recorded Crime Offences (%) by Type of Offence and Year and findings (%) of current study

	Current Conviction	2013	2014	2015	2016	2017
Controlled Drug Offences	31.6	6.7	7.03	6.69	8.04	7.88
Burglary and Related Offences	16.8	11.49	12.26	11.68	9.27	8.91
Hijacking Offences	2.3	1.22	1.17	1.14	1.05	1.02
Weapons Offence	4.7	1.19	1.09	1.05	0.61	1.1
Homicide Offences	3.1	0.04	0.04	0.03	0.04	0.03
Fraud	4.7	2.09	2.28	2.56	2.47	2.84
Assault and Related Offences	8.2	6.28	6.7	7.49	8.34	8.77
Public Order & Social Offences	8.2	15.91	14.44	14.79	14.67	14.56
Kidnapping and Related	3.1	0.05	0.05	0.06	0.06	0.06
Negligent Acts	4.7	3.27	3.2	3.16	3.85	3.9
Damage to Property	8.6	12.55	12.11	11.53	11.14	10.87
Offences against Government	3.9	4.01	4.32	5.08	6.18	6.08

(Adapted from Central Statistics Office: Crime - Recorded Crime Offences)
Available at http://www.cso.ie/multiquicktables/quickTables.aspx?id=cja01

Summary of the BIS/BAS Scale

The Gray and McNaughton (2000) revised reinforcement sensitivity theory (rRST) version of the BIS/BAS scale was used with a sample. The scale is a self-report measure consisting of 24 items which measure five subscales; the three BAS related scales; BAS-RR (Reward Responsiveness), BAS-FS (Fun Seeking), BAS-Drv (Drive); and two BIS scales BIS-Fear, BIS Anxiety. Four filler items are also included. The BIS/BAS scale is a four point Likert scale with each item scored on, 1 (very true for me), 2 (somewhat true for me), 3 (somewhat false for me) and 4 (very false for me). The Likert scale proposes that the strength of attitudes are linear and high scores are indicative of intensity or high levels of the trait being measured. Heym et al., (2008) model of the BIS, incorporating a three item BIS Fear component, was used.

Summary of Narrative Roles Questionnaire

Canter and Youngs (2012) developed the Narrative Roles Questionnaire as a psychological instrument to aid in the gathering of data which categorised an offender's narrative, and the perceptions of their roles, self-identity, and their cognitive interpretations of their criminal actions. Their research drew on previous studies which found that valuable understanding of criminal actions can he gained from analysing the offender's internal script, and the role being activated, and acted out, in criminal behaviour (Canter, 1994; Canter & Youngs, 2009; Canter & Youngs, 2012; Youngs & Canter, 2011; Youngs & Canter, 2012).

Youngs and Canter (2012) proposed the narratives attributed to criminal action by

offenders can have three components; (1) The offender's interpretation of their criminal action, antecedents to their behaviour, and the subsequent action; (2) the offender's concept of self or perceived identity, and the associated or expected role attributed to that identity, during interpersonal criminal actions; and (3) the stimuli relating to the event for the offender. The concept proposed how a criminal understands the event, and their perceived role within the unfolding story of the event, may act as motivation for the criminal behaviour.

The NRQ provides a method for interpretation and analysis of the offender's narrative expression of their actions and identity; and the categorisation of these interpretations can be viewed within core psychological dimensions. These psychological dimensions are founded on power (potency) and intimacy; and Youngs and Canter (2012) proposed the criminal's narrative interpretations can be further refined, based on emotional, cognitive, and self-concept components held or experienced by the criminal; and categorised into four narrative roles, or themes. These are Professional, Revenger, Hero, and Victim.

The Professional role is defined as high potency and low intimacy; and is one of competency and proficiency. They are less aroused with a strong concept of self. The Revenger role is described as low potency and low intimacy. They have a weak concept of self and disassociate from their behaviours by placing blame on others. Distress and blame are elements of the role. The Hero role is defined as having high potency, high intimacy. The hero's self-concept is strong, and they seek to validate behaviours as overcoming unjust challenges. Finally, the Victim role is low potency and high intimacy; and self-concept is weak. Despair and hopelessness are

components of victim role.

The Narrative Roles Questionnaire (version 2) is a self-report Likert scale consisting of 52 items; and ranges from 1 (Not at all), 2. (Just a little); 3. (Some); 4. (A lot); to 5. (Very much). As with the BIS/BAS, the Likert scale measures attitudinal responses and proposes that the strength of attitude is linear; with scores indicative of intensity of the trait being measured. The scale does not have defined internal subscales, but the items are expected to identify four narrative themes: Professional, Hero, Revenger, and Victim. Participants were asked to consider their criminal activity while completing the questionnaire.

Pilot test of combined questionnaire

Initial versions of the questionnaire used in this research contained the NRQ and BIS/BAS scales, which were presented to the participants together. The Participants would also be asked to complete demographic information, which was intended to provide contextual details of the sample. A consent form, confidentiality agreement, and information about the project, was also to be provided to participants. Bryman (2012) advised that researchers should conduct a pilot study to evaluate the effectiveness of the research instrument and methodology in meeting the objectives of their study. Accordingly, sampling of the questionnaire was conducted with eight prisoners in March 2015. The format replicated a semi structured interview which allowed for discussion; but emphasis was placed on the completion of the questionnaires. Conducting these preliminary interviews provided valuable insights. It was noted that prisoners were unenthusiastic participants in research; and

engagement appeared to be related to their avoidance of daily routines or duties. They were also reluctant to answer some of the descriptive questions on the NRQ; and none of the sample participants showed interest in the additional information about the research.

The initial version of the NRQ contained a 'General Background' 60 item questionnaire which was found to be cumbersome and a disincentive for the prisoners to remain engaged. The NRQ is also administered (albeit with smaller sample sizes) with a semi structured interview, and a 35-item demographic questionnaire. Of significant note was the time taken to complete the pilot study, which was conducted over six prison visits; which, for operational reasons, was facilitated by the IPS over thirteen weeks. Trestman (2005) advised that research in prisons, conducted by external researchers, can take considerably longer to conduct than a similarly sized project in the community. The pilot study indicated that in its original format, considerable time would be required to acquire an appropriate number of participants for the study.

Following the pilot study, and in consultation with prison management and prison officers on multiple occasions over approximately six months; the questionnaire was adapted until a seventh version was found to be most effective in meeting the research objectives. The advice received from prison officers on how best to approach data collection within their prison was invaluable in ensuring that the questionnaire and research methods were practicable and suitable for a prison population.

The adaptations made to the questionnaire included;

Less detailed information – prisoners appeared unwilling to provide comprehensive details about their crimes. Questions such as 'What did you do during your crime?'; 'How did you prepare for your crime?'; What did you steal?'; and 'Who did you hurt?' were removed from the questionnaire. The 'General Background' questionnaire was also removed. The descriptive information which would be obtained from the questionnaire was not statistically relevant to the study; and the removal did not impinge on the functionality of the NRQ.

Less demographic information – prisoners appeared unwilling to provide details relating to their family circumstances. Questions such as, 'Martial status?', 'Do you have children?' were also removed. Questions which sought information about their childhood family were also removed; 'As a child did you live with…'; and 'Do any of your brothers and sisters have criminal convictions?'

Information about the study – Feedback from prisoners indicated that information about the study was too lengthy and too academic; and a disincentive to engage with the researcher. Prisoners unanimously stated that they were only interested in confidentiality and who was conducting the research. To address this, a shortened version on the information sheet was attached to the questionnaire, while more comprehensive information was available upon request.

Refusal to sign the consent form – All of the prisoners involved in this study refused to sign the consent form; and while they agreed to participate in the research they were adamant that they would not sign or initial any document.

Dalen and Jones (2010) reported similar problems in their research, and highlighted the dilemma of whether the prisoners were evidencing informed consent by not signing the consent form, while also respecting their wish to participate in the research. To overcome the problem, the current study used a 'tick box' at the bottom of the consent form, which indicated that the participants had read the consent form. The prisoners accepted this, and engagement increased significantly.

Lucic-Catic (2011) expressed the view that researchers need to be flexible when conducting research in prisons, and must tailor their research approach to compensate for unanticipated issues. It is also necessary to develop a questionnaire which is accessible and responsive to the concerns of the participants, while still maintaining the integrity of the research study and methodology (Apa et al., 2012; Fox et al., 2011). It was considered that the adaptations made to the methodology responded to the concerns of the potential participants. While demographic and crime specific details would have provided more contextual detail to the findings, the integrity of the research question was unchanged; and arguably facilitated by the increased participation rates.

The research timeframe and the frequency of access to participants necessitated substantive changes to the methodology. The initial proposal allowed for each

participant to be met individually, have the research explained, and ensure informed consent. However, as the pilot study showed, having direct contact with each prisoner would yield low participant rates of approximately 32 participants per year, if the timespan was replicated. Again, in consultation with prison and probation service management it was proposed that potential participants would be met as a group, given information about the research, and then given a questionnaire to complete in their own time if they agreed to be part of the study. This saw an increase in the recruitment of participants, but response rates remained low.

Chapter Four

RESULTS

This study explores the influence of neuropsychological processes on criminal action; using the psychometric instruments BIS/BAS to examine neuropsychological processes, and the NRQ to examine the criminal action roles. Using a sample of Irish prisoners (n=256), initial analysis categorised the sample's neuropsychological processes and their criminal action roles. Correlations between the five components of the BIS/BAS and the five criminal actions roles, identified through the NRQ, were analysed. To provide greater detail, further analysis was conducted looking at individual participant selections in the BIS/BAS and NRQ scales.

As reported in previous chapters, there have been a number of different variations of the scale to measure BIS/BAS. It was decided to conduct Principal Component Analysis to explain as much variance among the variables as possible. Similar approaches have been taken in earlier studies (Poythress et al 2008) to test the various versions of the BIS/BAS scales: while this method has also been used in previous research utilising the NRQ (Carthy 2013) and found to be effective in providing factor loadings consistent with the themes expected to be identified in the NAS. Other methods of analysis have been conducted, such as exploratory factor analysis; however, Thompson (1992) argued that there was very little difference in the practical interoperations provided by principal component analysis and exploratory analysis.

Given the psychological constructs proposed in Reinforcement Sensitivity Theory and based on the extensive research on the outcomes of the BIS/BAS scale, there was an expectation of correlation between the components. Therefore, a principal component analysis was conducted using a direct oblimin rotation to obtain the factor structure. This method was also chosen because in previous studies using this process (Carver & White, 1994; Dissabandara et al., 2012;), correlations were found between the BIS subscales *Anxiety* and *Fear*; and between the BAS subscales *Drive*, *Fun-seeking*, and *Reward Responsiveness*.

As with the BIS/BAS scales there was an expectation of correlation between the variables given their psychological construct. Previous NRQ research utilised PCA with orthogonal varimax rotation, and to permit comparisons later, a similar method was used here. While the NRQ is developed as a four-factor model, (Hero, Revenger, Victim, and Professional) previous studies (Ioannou, et al., 2017) have found that the NRQ can load onto multiple factors, providing 'hybrid' roles or themes. The number of components identified by CFA will then be inter-correlated using Spearman's Rho.

Principal Component Analysis (PCA) is a data reduction method which is utilised to reduce a large number of variables to a smaller set while retaining the trends and patterns of the data. PCA in contrast to Factor Analysis (FA), evaluates all of the variance related to a variable and summarises the information into a smaller set of factors. PCA is described as 'exploratory' in nature where researchers seek to reduce data to a smaller number of variables; while FA is considered 'confirmatory' insofar

as it is predominately used to test hypotheses. According to Field (2009) the purpose of data reduction methods is to gain a greater understanding of the structure and patterns within the data; to construct questionnaires based on identified significant variables; and to reduce a dataset while retaining the trends, and patterns contained within the original data. Guadagnoli and Velicer (1988) concluded that items with loadings greater than 0.4 are considered stable, and therefore emphasis on factor loadings was placed on items greater than .04. Following examination of the distribution of the data it was found that there was not normal distribution and therefore a non-parametric analysis was required to screen the variables. Given this finding Spearman's Rho was used to test for correlation. Analysis of the data from the BIS/BAS and NRQ Scales was conducted using SPSS Ver26.

Data screening

The BIS/BAS subscales BAS Drv, BAS FS, BIS Anxiety, and BIS Fear, were normally distributed, with skewness ranging from .238 to .688 (SE = .152). BAS RR was not normally distributed with skewness of .983 (SE = .152) and Kurtosis of .680. Kim (2013) proposed that skewness can be addressed where assumptions of normality are not being made about the data, and nonparametric methods are used. Univariate outliners were found on the subscales BAS-FS (2 outliers) and BAS-RR (8 outliers). However, their influences on the measurement and intensity of the findings was found to be negligible, and they were not removed from the sample. Consideration was also given to the BIS/BAS outliers' inclusion in the NRQ scales, where they were within the normal distribution on that scale. The sample was inspected for multivariate

outliers using Mahalanobis distance and none were identified. The Kaiser-Meyer-Olkin's (KMO) index (.72) and the Bartlett's test of sphericity, X^2 (190) = 1545, $p<.0001$ indicated that there were sufficient correlations within the data to conduct factor analysis.

Reliability analysis

Cronbach's alpha (α) was utilised to verify the reliability of the BIS/BAS scale, and the five subscales within the instrument. The reliability coefficient of Combach's alpha ranges between 0 and 1; therefore, the closer Crombach's alpha is to 1, the greater the internal consistency of the scale measuring the motivational concepts within the BIS/BAS. Cronbach's alpha for the 20 item BIS/BAS scale was .67. The BIS-Anxiety subscale consisted of four items ($\alpha = .69$); the BIS Fear subscale consisted of three items ($\alpha = .63$); the BAS Drv subscale consisted of 4 items ($\alpha = .89$) the BAS FS subscale consisted of four items ($\alpha = .48$), and the BAS RR subscale consisted of five items ($\alpha = .61$).

Initial analysis using eigenvalues greater than 1, and an examination of the scree plot, suggested a five-component structure accounting for 57% variance in the data. The factor loadings after rotation are shown in Table 4.1. As with Corr and McNaughton's (2008) findings, the BIS subscale was separated onto fear and anxiety components, with three items (2,16,22) loading on the fear component, and the remaining four items loading on BIS Anxiety. Therefore, the factor loadings of a five

component structure was consistent with the Gray and McNaughton version of the BIS/BAS scale.

After rotation, the BIS items loaded onto the components of Anxiety and Fear. BIS Anxiety factor loadings ranged from .63 (item 13 – "*I feel pretty worried or upset when I think or know someone is angry with me*") to .75 (item 8 – *"criticism or scolding hurts me quite a bit"*). Factor loadings on the three items attributed to BIS Fear ranged from .58 (item 22) to .78 (item 2). The items attributed to BAS Drive also loaded as expected, ranging from item 21 *"when I go after something I use a "no holds barred" approach"* (.79) to item 12 *"If I see a chance to get something I want I move on it right away*" (.89). Three of the four items attributed to BAS Fun Seeking loaded onto that subscale; ranging from item 15 "*I often act on the spur of the moment*" (.59) to item 20 *"I crave excitement and new sensations"* (.77). However, the item "*I will often do things for no other reason than that they might be fun*" (BAS FS) did not load significantly (>.3) onto any of the components; while the item "*when I get something I want, I feel excited and energized*" (BAS Reward Responsiveness) loaded onto the Anxiety component. The BAS RR item "*it would excite me to win a contest*", cross – loaded on Anxiety (.37), BAS RR (.34) and BAS FS (.37). The remaining BAS RR items had factor loading between .73 (item 23 "*when good things happen to me, it affects me strongly*") and .80 (item 14 "*when I see an opportunity for something I like I get excited right away*"). To examine how these items, that did not load as expected, and as proposed by Gray and McNaughton, impacted on the factor structure of the subscales, they were removed and factor analysis was ran again with the remaining

items. The results showed that there was insignificant difference in the factor structure. Given that the BIS/BAS scale was to be later considered with the NRQ, and the negligible influence of the 'troublesome' items, it was decided to maintain the structure of the scale as proposed by Gray and McNaughton, and to include all of the items in their components.

Table 4.1. Results of principal components analysis with sample (n=256) using oblimin rotation

	Component				
	1	2	3	4	5
BIS Anxiety					
8. Criticism or scolding hurts me quite a bit.	-0.05	**0.75**	-0.02	0.12	0.04
13. I feel pretty worried or upset when I think or know somebody is angry at me.	0.12	**0.63**	-0.18	-0.36	0.01
19. I feel worried when I think I have done poorly at something important.	0.18	**0.66**	0.16	-0.07	0.26
24. I worry about making mistakes.	0.13	**0.69**	-0.05	-0.01	-0.07
BIS Fear					
2. Even if something bad is about to happen to me, I rarely experience fear or nervousness.	0.08	0.04	-0.20	**0.78**	-0.13
16. If I think something unpleasant is going to happen I usually get pretty 'worked up'	-0.01	-0.02	-0.25	**0.75**	-0.04
22. I have very few fears compared to my friends.	0.16	0.09	0.21	**0.58**	0.23
BAS Drive					
3. I go out of my way to get things I want	**0.87**	0.01	0.03	0.06	-0.03
9. When I want something I usually go all-out to get it	**0.87**	-0.06	0.02	0.00	-0.03
12. If I see a chance to get something I want I move on it right away	**0.89**	0.03	0.03	0.13	-0.06
21. When I go after something I use a "no holds barred" approach.	**0.79**	0.08	0.01	0.05	-0.03
BAS Fun Seeking					
5. I'm always willing to try something new if I think it will be fun	-0.02	0.16	0.33	0.08	**-0.64**
10. I will often do things for no other reason than that they might be fun	0.08	-0.17	-0.06	0.26	-0.22
15. I often act on the spur of the moment.	-0.09	-0.11	0.09	0.21	**-0.59**
20. I crave excitement and new sensations.	0.23	0.05	-0.11	-0.20	**-0.77**
BAS Reward Responsiveness					
4. When I'm doing well at something I love to keep at it.	-0.05	0.06	**0.72**	-0.12	-0.08
7. When I get something I want, I feel excited and energized.	-0.23	**0.55**	-0.01	0.04	-0.15
14. When I see an opportunity for something I like I get excited right away	0.04	-0.05	**0.80**	0.04	0.06
18. When good things happen to me, it affects me strongly	0.10	-0.09	**0.73**	-0.12	-0.7
23. It would excite me to win a contest.	-0.22	0.37	0.34	-0.03	-0.37

Note: Coefficients greater than 0.4 are in bold.

Inter-scale correlations

Unlike previous studies utilising the BIS/BAS scales, the findings did not indicate a strong inter-scale correlations between the related BIS and BAS subscales as shown in Table 4.2. The correlation between BIS Anxiety and BIS Fear showed an insignificant linear relationship of movement between the two variables (r_s = -.09); indicating that a change in one of the variables would not be related to a proportional change in the other. Correlation between BAS Drv and BAS FS was also insignificant (r_s = .04); as was the correlation between BAS FS and BAS RR (r_s = .14) while a moderate correlation existed between BAS Drv and BAS RR (r_s = .64).

Table 4.2. BIS/BAS inter-scale correlations (Spearman's Rho)

	BASDRIVE	BASREWARD	BASFUN	BISANXIETY	BISFEAR
BASDRIVE	1.	.641**	.04	.129*	.243**
BASREWARD	.641**	1.	.143*	.02	.04
BASFUN	.04	.143*	1.	-.08	.1
BISANXIETY	.129*	.02	-.08	1.	-.09
BISFEAR	.243**	.04	.1	-.09	1.

** p < .1; * p < .05

Measures of central tendency were examined in the five subscales. Positive responses (‘very true for me’ and ‘somewhat true for me’) on all of the subscales were the dominant attitude for items within those subscales. BAS Anxiety showed an 83.2% (n = 213) positive response to items related to that subscale; while BIS RR showed an 89.1% (n = 228) positive response rate. The remaining subscales, while still indicating dominant positive responses, were less extreme; BAS Drv 58.2% (N = 149); BAS FS

64.5% (n = 202); and BAS Fear 62.1% (n = 159). Acknowledging that the mean should be given cautious consideration in Likert scale data, the mean scores for the BIS and BAS subscales were similar to that found in previous studies (Loxton et. al., 2008; Beck et. al. 2009)

Table 4.3. Internal consistency, means, modes, and standard deviations in the sample.

Items:	Mode	Mean	Std. Deviation	Cronbach's Alpha
BIS Anxiety		2.07	0.72	0.694
8. Criticism or scolding hurts me quite a bit.	2	1.99	0.94	
13. I feel pretty worried or upset when I think or know somebody is angry at me.	2	2.42	1.05	
19. I feel worried when I think I have done poorly at something important.	2	2.04	1.01	
24. I worry about making mistakes.	2	2.04	0.99	
BIS Fear		2.44	0.85	0.637
2. Even if something bad is about to happen to me, I rarely experience fear or nervousness.	4	2.51	1.13	
16. If I think something unpleasant is going to happen I usually get pretty 'worked up'	3	2.44	1.09	
22. I have very few fears compared to my friends.	1	2.39	1.12	
BAS Drive		2.39	0.95	0.891
3. I go out of my way to get things I want	2	2.42	1.1	
9. When I want something I usually go all-out to get it	2	2.40	1.1	
12. If I see a chance to get something I want I move on it right away	2	1.81	1.06	
21. When I go after something I use a "no holds barred" approach.	1	2.33	1.13	
BAS Fun Seeking		2.26	0.71	0.481
5. I'm always willing to try something new if I think it will be fun	2	1.84	0.89	
10. I will often do things for no other reason than that they might be fun	2	2.11	0.98	
15. I often act on the spur of the moment.	1	2.29	1.1	
20. I crave excitement and new sensations.	2	2.41	1.1	
BAS Reward Responsiveness		2.01	0.62	0.614
4. When I'm doing well at something I love to keep at it.	2	1.78	0.85	
7. When I get something I want, I feel excited and energized.	2	1.76	0.83	
14. When I see an opportunity for something I like I get excited right away	2	1.82	0.86	
18. When good things happen to me, it affects me strongly	2	1.81	0.81	
23. It would excite me to win a contest.	2	1.97	0.99	

Analysis of Narrative Roles Questionnaire

Reliability analysis

A bivariate correlation analysis using Spearman's Rho was conducted and the output examined for levels of correlation between the NRQ's 52 items. Items correlating with less than three items above 0.3 were removed from the sample. Five items met the criteria for exclusion, these included; 'I knew what I was doing' (1 correlation); 'I couldn't stop myself' (1 correlation); 'It was like I wasn't part of it' (2 correlations); 'There was nothing special about what happened' (1 correlation); and 'I knew I was taking a risk' (2 correlations).

Following the exclusion of the items, a PCA was reapplied to the remaining 47 items. The Kaiser-Meyer-Olkin (KMO) index (.76) and the Bartlett's test of sphericity, X^2 (1081) = 7577.62, $p<.0001$ indicated that the sample size was adequate and there were sufficient correlations within the data to conduct factor analysis.

Upon examination of the PCA output of components with eigenvalues greater than 1, the scree plot, and rotated factor matrix, five components explaining 49.7% variance were identified from the data. Table 4.4 shows the item loadings onto five components. The PCA analysis found some consistency with items and their expected NRQ themes; with nine items related to the *Hero* component; seven items attributed to the *Professional* component; nine items attributed to the Revenger

component; nine items related to the *Victim* component; and nine items attributed to an *Undefined* component. Cronbach's alpha (α) was used to measure the reliability of the NRQ scale; and the themed component subscales following PCA. The reliability coefficient of Combach's alpha ranges between 0 and 1; therefore, the closer Crombach's alpha is to 1, the greater the internal consistency of the scale measuring the conceptual roles within the NRQ. Cronbach's alpha for the 47 item NRQ was .860. The reliability of the Hero subscale was α = .82; Revenger (α = .86); Professional (α = .87); Victim (α = .82); and Undefined (α = .73).

Table 4.4. Results of principal components analysis with sample (n = 256) using varimax rotation

	Component				
	1	2	3	4	5
It was exciting	**0.687**	0.192	-0.007	-0.169	-0.019
It was satisfying	**0.653**	0.191	0.266	-0.038	-0.197
I guess I always knew it would happen	**0.611**	-0.114	0.106	-0.344	0.169
I was grabbing my chance	**0.605**	-0.008	0.427	0.236	0.007
It was like an adventure	**0.602**	0.296	0.094	-0.171	-0.011
It was fun	**0.579**	0.297	0.141	-0.155	-0.016
What was happening was just fate	**0.544**	0.184	0.133	-0.025	0.071
It was a relief	**0.522**	-0.033	0.126	0.048	0.253
For me, it was a usual days work	**0.514**	-0.036	0.302	0.061	0.012
It was interesting	**0.478**	0.355	-0.021	-0.099	0.042
I didn't really want to do it	**-0.455**	-0.063	-0.250	0.454	-0.001
I was proving my point	0.095	**0.760**	0.178	-0.014	0.141
I was just trying to make them understand me	0.169	**0.758**	0.074	0.025	0.102
I was trying to get revenge	0.126	**0.742**	0.154	-0.033	0.142
I was trying to make them see	0.044	**0.740**	0.063	-0.023	0.231
I was getting my own back	0.163	**0.686**	0.091	-0.163	-0.039
I was showing them how angry I was	-0.068	**0.676**	0.358	-0.066	0.111
It was a manly thing to do	0.42	**0.478**	0.179	0.168	-0.211
It all went to plan	0.315	**0.466**	0.376	0.054	-0.09
Looking for recognition	0.363	**0.421**	-0.079	0.145	-0.024

It was right	0.085	0.348	0.273	-0.059	0.223
I was like a professional	0.081	0.130	**0.862**	-0.116	0.078
It was easy to force them to do exactly as I wanted	0.073	0.216	**0.858**	-0.116	0.017
I kept total control of them	0.18	0.085	**0.832**	0.001	0.066
I was doing a job	0.196	0.072	**0.826**	0.043	0.048
It was routine	0.220	0.260	**0.578**	-0.146	0.048
I had power	0.296	0.301	**0.515**	-0.152	0.079
I was in control	0.315	0.291	**0.421**	-0.102	-0.19
I felt hunted	-0.043	-0.079	0.136	**0.717**	0.048
I was in misery	-0.189	-0.079	0.073	**0.689**	0.22
I was helpless	-0.041	-0.142	-0.075	**0.681**	0.065
I just wanted it over with	0.171	-0.015	0.005	**0.679**	0.127
I was a victim	-0.039	0.124	-0.176	**0.632**	0.213
I was confused about what was happening	-0.121	0.072	-0.188	**0.607**	-0.072
It was the only way to rescue things	0.046	-0.067	-0.026	**0.505**	0.46
I was in pain	-0.133	0.005	-0.088	**0.484**	0.415
It was distressing	-0.384	0.025	-0.103	**0.435**	0.001
I was in an unlucky place in my life	-0.269	-0.204	0.017	0.391	0.332
It was the only thing to do	0.146	0.076	0.121	0.112	**0.713**
Had to do it	0.001	0.063	-0.107	0.105	**0.701**
I was taken over	-0.195	0.18	0.018	0.123	**0.646**
Nothing else mattered	0.038	0.165	0.236	-0.066	**0.561**
It was a mission	0.299	0.143	0.016	-0.015	**0.551**
It was my only choice	0.025	0.086	0.013	0.212	**0.544**
At the time I needed to do it	0.193	0.069	0.049	0.467	**0.489**
I didn't care what would happen	0.183	0.111	0.249	-0.397	**0.471**
I was out of control	-0.134	-0.087	-0.042	0.156	**0.429**
Eigenvalue	9.615	5.665	2.863	2.65	2.569
Variance %	20	12	6	6	5
α	0.827	0.860	0.876	0.826	0.773

Note: Coefficients greater than 0.4 are in bold.

Data screening

The NRQ was examined for normal distribution following rotation. Skewness for the 'Professional' (1.137; SE = .152) with Kurtosis .329; and 'Revenger' (1.146; SE = .152) with Kurtosis .745, showed these components were not normally distributed; while the remaining components ranged from .186 to .244. Again, to address this, further assumptions of normality were not made and nonparametric measures were used to examine correlations within the data.

The data set was examined for outliers which might differ significantly from their related sample items. Univariate outliers were found on the components 'Professional' (4 outliers) and 'Revenger' (9 outliers); while three outliers were found to exist on both the NRQ and BIS/BAS scales. The sample was inspected for multivariate outliers using Mahalanobis distance and none were identified The outliers' responses were checked for irregularities or errors, and none were found. Consideration was also given to the influence the outliners had on the findings, and weighted against maintaining the integrity of the sample. It was also noted only 3 outliers had influence over both scales and this was seen as negligible; while the remaining ten outliers from the NRQ had normal distribution on the BIS/BAS scale. Given these considerations it was decided not to remove the outliers from the sample and proceed with the outcome of the PCA. Table 4.5 shows the differences in mean and standard deviation influences of the outliers on the NRQ data.

Table 4.5. Outliers influence on Data mean and standard deviation

	Outliers not removed		All outliers removed		Only outliers common to both scales removed	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
HERO	2.584	.869	2.518	.848	2.569	.861
PROFESSIONAL	2.244	.949	2.135	.846	2.226	.933
REVENGER	1.927	.756	1.831	.645	1.902	.724
VICTIM	2.728	.895	2.716	.913	2.734	.898
*Undefined**	2.896	.836	2.876	.851	2.896	.841
BASDRIVE	2.398	.954	2.402	.947	2.401	.952
BASREWARD	2.007	.629	1.763	.471	1.817	.541
BASFUN	2.267	.712	2.122	.635	2.161	.644
BISANXIETY	2.07	.724	2.071	.729	2.072	.726
BISFEAR	2.449	.853	2.46	.849	2.444	.854

* a fifth component was identified within the NRQ following CFA

Analysis of the combined BIS/BAS scale and the Narrative Roles Questionnaire

The objective of integrating the BIS/BAS subscales of BIS Anxiety, BIS Fear, BAS Drive, BAS Fun Seeking, and BAS Reward Responsiveness, with the NRQ subscales of Hero, Revenger, Victim, Professional, and the undefined factor, is to examine if relationships existed between the factor which might suggest the NRQ roles were susceptible to behaviour activation or behaviour inhibition; thus, adding to the information about the characteristics of each role and their motivation for behaviour. Where correlations were found between the subscales, the consideration would be given for the recommendation of the emotive statements assigned to the BIS/BAS instrument, to be incorporated into a later version of the Criminal Narrative Experience model.

Variables created earlier in this section, incorporating the items identified as attributable to the subscales of the NRQ and BIS/BAS was utilised. The integration of the instruments provides ten variables which will be explored; however, given what has gone before, emphasis will be placed on correlations between the BIS/BAS variables with the NRQ variables.

A bivariate correlation analysis was conducted using Spearman's Rho with the output examined for levels of correlation between the five variables of the NRQ and the five variables of the BIS/BAS. Table 4.6 shows the correlations between the BIS/BAS and the NRQ. The correlation analysis showed that there were insignificant linear relationships between BAS Drive, BAS Reward, and BIS Fear, with any of the action roles identified through the NRQ. Weak relationships were found between the Hero role and BAS Fun (r_s = .300); between BIS Anxiety and the Professional role (r_s = .336) and between BIS Anxiety and the Revenger role (r_s = .302).

Table 4.6. BIS/BAS & NRQ correlations (Spearman's Rho).

	HERO	PROFESSIONAL	REVENGER	VICTIM	Undefined
BASDRIVE	-.10	.01	-.12	-.03	-.08
BASREWARD	-.09	-.04	-.06	.135*	-.135*
BASFUN	**-.300****	-.12	-.146*	.249**	-.08
BISANXIETY	.186**	**.336****	**.302****	-.255**	-.07
BISFEAR	-.11	.00	-.171**	.03	-.09

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

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

As mentioned earlier, there have been four versions of the BIS/BAS scales which were widely accepted to examine Gray's neuropsychological theory of personality.

The current findings are based on the Gray and McNaughton (2000) scale, incorporating the proposal from Heym et al. (2008) of a three item BIS Fear. Correlation analysis using Spearman's Rho was conducted on the other models to examine whether those models could identify a more significant relationship with the roles identified by the NRQ. Correlation between the Gray and McNaughton scale incorporating a two item BIS Fear variable, as proposed by Johnson et. al., (2003) did not show any significant relationship between the BIS Fear subscale and the NRQ roles; Professional ($r_s = .02$); Hero ($r_s = .10$); Revenger ($r_s = .12$); Victim ($r_s = .009$) and Undefined ($r_s = -.12$).

The sample was also analysed using the Gray's (1982) original theoretical model of two factor BIS/BAS scale. Again, as can be seen in Table 4.7, very weak correlations were found between the two-item model and the NRQ roles.

Table 4.7. Correlation between Gray's (1984) original two factor BIS/BAS (Spearman's Rho)

	HERO	PROFESSIONAL	REVENGER	VICTIM	Undefined
BIS	.07	.261**	.08	-.177**	-.136*
BAS	-.183**	.03	-.01	.193**	-.1

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

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

Finally, the Carver and White (1994) model was examined. The model proposed one BIS variable consisting of the seven items attributed to BIS; and three subscales BAS Drive, BAS Reward Responsiveness, BAS Fun Seeking. The Carver and White model constitutes the BIS subscale as proposed by Gray (1984) and the three BAS

subscales incorporated into the Gray and McNaughton (2000) model, and as such the findings from examining the Carver and White model were similar to previous findings.

Table 4.8. Correlation between Carver & White's (1994) model using Spearman's Rho

	BIS	BASDRIVE	BASREWARD	BASFUN
HERO	.07	-.1	-.09	**-.300****
PROFESSIONAL	.261**	.01	-.04	-.12
REVENGER	.08	-.12	-.06	-.146*
VICTIM	-.177**	-.03	.135*	.249**
Undefined	-.136*	-.08	-.135*	-.08

Examination of individual selections on BIS/BAS and NRQ scales by the participants

The approached adopted by Canter & Fritzon, (1998); Salfati, (2000); Ioannou, (2006); and Ioannou, Canter, & Youngs, (2017) in analysing the individual response of each participant and applying a percentage score to each component, was utilised here to further examine the selected components made by the participant. Similar methodology was applied as that used to examine hybrid roles in the NRQ. The responses of each participant were analysed to determine if it could be categorised onto a component of the BIS or BAS subscales. A case was categorised as belonging to a BIS or BAS subscale if the percentage for that variable was greater than the percentages achieved on the other variables. Where percentage scores for two or more BIS or BAS components fell within ±5%, they were identified as hybrid motivations.

The BIS/BAS and NRQ categorisations for each participant were then re-examined, and a combined categorisation devised. The role (NRQ) and motivation (BIS/BAS) integrations found that 91% (n= 221) of the sample could be categorised as having one role and one motivation (ie Victim/Fear); see Table 4.9

Table 4.9. Integration of BAS/BIS and NRQ roles as selected by participants

	Frequency	Percent
Victim - Fear	30	11.7
Victim - Drive	27	10.5
Undefined - Drive	22	8.6
Victim - Fun	18	7
Hero - Fear	17	6.6
Undefined - Fear	15	5.9
Hero - Drive	14	5.5
Undefined - Anxiety	13	5.1
Professional - Anxiety	11	4.3
Professional - Drive	11	4.3
Professional - Fear	10	3.9
Hero - Anxiety	10	3.9
Victim - Reward	7	2.7
Undefined - Fun	6	2.3
Hero - Fun	4	1.6
Professional - Reward	3	1.2
Undefined - Reward	3	1.2
Undefined - Drive - Fun	3	1.2
Professional - Fun	2	0.8
Revenger - Anxiety	2	0.8
Revenger - Drive	2	0.8
Revenger - Fun	2	0.8
Victim - Fun - Reward	2	0.8
Other	22	8.5
Total	256	100

Using this method of analysis, the dominant dual finding of role and motivation, is Victim/Fear (11.7%, n= 30). Multiple motivations were also identified within the sample (11%, n = 27) whereby a role was categorised with two or more BIS/BAS motivations; (eg. Undefined/Fun/Drive; 1.2%, n = 3). However, the majority of combined categories (9%, n = 22) were individualised, and only representative of one participant. The prominence of motivations categorised to a criminal role were Drive (30%, n = 76); Fear (26%, n = 67); Anxiety (14%, n = 36); Fun Seeking (13%, n = 32); and Reward responsiveness (6%, n 15).

Comparing NRQ role findings with Youngs and Canter (2012)

The thematic structure of the NRQ as set out by Youngs and Canter presents four dominant narrative roles or themes. Within these themes, emphasis is placed on items suggestive of polarising facets of potency and intimacy; and seen to indicate the offender's cognitive interpretation of their criminal actions, their affective state, and their self-awareness and concept of identity. The dominant themes are then viewed as a combination of high and low levels of potency and intimacy. However, their proposed structure is not replicated as can be seen in Table 4.1, whereby items suggested by Youngs and Canter to represent NRQ themes and constructs, were not correlated with the expected roles. Therefore, items which were seen to represent potency and intimacy within themes are attributed to others. A comparison with Youngs and Canter (2012) shows that the themes of *Professional* (High Potency/Low Intimacy), *Revenger* (Low Potency/Low Intimacy), and *Victim* (Low Potency/High Intimacy) were consistent. However, the theme of *Hero*, suggested by Youngs and

Canter as High Potency/High Intimacy was found to have a combination of High Potency/Low Intimacy; while the *Undefined* theme, not identified by Youngs and Canter, had a combination of Low Potency/High Intimacy.

Comparing NRQ role findings with Ioannou, Canter and Youngs (2017)

Ioannou et al., (2017) found that criminal narratives, as explored by the NRQ, contain affective components; and distinctive emotions can be attributed to each of the dominant themes. As with Youngs and Canter (2012), they identified four narrative themes, or roles, within which the categorisation of criminal action and emotions could be placed. Incorporating emotional qualities associated with Frye's archetypal mythoi onto the narrative roles identified by Youngs and Canter, Ioannou et al. described Criminal Narrative Experience (CNE) as dominant emotions attributable to the criminal roles. The amalgamation of emotions and narrative statements allowed for the development of conceptual elements for each of the NRQ roles; Elated Hero (15 elements); Calm Professional (13 elements); Distressed Revenger (14 elements); and Depressed Victim (17 elements). A comparison of these elements and the roles identified here can be seen in Table 4.10. Of the five statements attributed to the Calm Professional emotive role, three are categorised as Professional by the NRQ. There is little consistency between the remaining emotive roles and the NRQ roles and whether emotional themes can be applied to the NRQ roles appears questionable.

Table 4.10. Ioannou et al., (2017), Themes of emotions and narrative roles (narrative roles are in parentheses)

Elated Hero	**Calm Professional**
1. Exhilarated	1. Calm
2. Excited	2. Confident
3. Delighted	3. Thoughtful
4. Pleased	4. Relaxed
5. Enthusiastic	5. Contented
6. Courageous	6. Safe
7. Manly **(Revenger)**	7. I was like a professional **(Professional)**
8. It was fun **(Hero)**	8. It was routine **(Professional)**
9. It was interesting **(Hero)**	9. I was doing a job **(Professional)**
10. It was like an adventure **(Hero)**	10. I knew what I was doing*
11. It was exciting **(Hero)**	11. Nothing else mattered **(Undefined)**
12. I was looking for recognition **(Revenger)**	12. For me it was just like a usual days work **(Hero)**
13. It all went to plan **(Revenger)**	13. There was nothing special about what happened*
14. It was a manly thing to do **(Revenger)**	
15. I knew I was taking a risk*	
Distressed Revenger	**Depressed Victim**
1. Angry	1. Depressed
2. Scared	2. Confused
3. Annoyed	3. Sad
4. Irritated	4. Lonely
5. Worried	5. Miserable
6. Upset	6. Pointless
7. It was right**	7. Unhappy
8. I was in control **(Professional)**	8. I had to do it **(Undefined)**
9. It was a mission **(Undefined)**	9. I was helpless **(Victim)**
10. I had power **(Professional)**	10. It was my only choice **(Undefined)**
11. I just wanted to get it over with **(Victim)**	11. I was a victim **(Victim)**
12. I couldn't stop myself*	12. I was confused about what was happening **(Victim)**
13. I was trying to get revenge **(Revenger)**	13. I didn't care what would happen **(Undefined)**
14. I was getting my own back **(Revenger)**	14. What was happening was just fate **(Hero)**
	15. It was like I wasn't part of it*
	16. It was the only thing I could think of doing **(Undefined)**
	17. I guess I always knew it was going to happen **(Hero)**

**excluded; **did not load onto a component. Only NRQ statements are compared.*

Table 4.11. NRQ inter-item correlations (Spearman's Rho)

	HERO	PROFESSIONAL	REVENGER	VICTIM
PROFESSIONAL	**.520****			
REVENGER	**.539****	**.518****		
VICTIM	-.223**	-.218**	-.04	
Undefined	.169**	.180**	.158*	**.365****

NRQ inter-scale correlation

The findings of Youngs and Canter (2012) and Ioannou et al., (2017) suggests inter-correlations between the narrative roles. The polarised combination of potency and intimacy shows similar influence on the Professional and Hero roles; and on the Victim and Undefined roles. Criminal narrative experiences also propose 'hybrid' roles derived from the NRQ. To explore this further, a bivariate correlation analysis was conducted using Spearman's Rho. As can be seen in Table 4.11, moderate correlations were found between Professional, Revenger, and Hero roles, ranging from $r_s = .518$ to $r_s = .539$; while a weak correlation was found between the Victim and Undefined role ($r_s = .365$). Correlation between Professional and Revenger ($r_s = .539$), and the example of their inclusion in the CNE Elated Hero (Professional – 4 items; Revenger – 4 items) suggests using NRQ variables to identify hybrid CNE roles could provide additional classification of the emotive influences on criminal roles.

Exploration of Hybrid Narrative Roles

Extensive research has been conducted using the NRQ, investigating the narrative action system and identifying four distinct thematic roles which could be attributed to criminal action (Canter & Youngs, 2009; Canter & Ioannou, 2004; Carthy 2014).

While correlations between the NRQ items has identified the four criminal roles; there has been very little exploration of the views expressed by the offenders and the classification of the participants into the identified roles. To understand the thematic division of the criminals, each of the 256 cases were individually examined to determine if it could be categorised as a specific role. This was conducted by giving each case a percentage score for the identified offence roles of the NRQ; Hero, Victim, Revenger, Professional, and the Undefined role. Percentages were used because the four themes contained an unequal number of variables. A case was categorised as belonging to a role if the percentage for that role was greater than the percentages achieved on the other roles. For example, in case number 63; 77% of the variables were placed on the Hero role; compared to Professional (45%), Revenger (35%), Victim (31%) and Undefined (44%); placing participant 63 as predominantly in the Hero role. Where percentage scores for two or more roles fell within ±5%, they were identified as hybrid roles. This form of analysis and classification has been employed previously (see Canter & Fritzon, 1998; Salfati, 2000; Ioannou, 2006; Ioannou, Canter, & Youngs, 2017).

By examining each of the cases under these criteria, 86.3% (n = 221) of the cases were categorised within individual themes, and considered to be pure types of the role. The most frequent pure type was the Victim role representing 32.8% (n = 84) of the sample. The Undefined role represented 22.7% (n = 58) of the cases; Hero role represented 15.6% (n = 40) of the cases; Professional role represented 11.7% (n = 30) of the cases; and the Revenger role represented 3.5% (n = 9) of the cases. Of the remaining cases, 11.27% (n = 30) were categorised as dual hybrid, and 1.95% (n = 5)

represented cases that met the criteria on three roles. Two cases met the criteria on four roles. Table 4.12, shows the distribution of cases categorised to the five roles.

Table 4.12. Classification of NRQ cases by percent

	Frequency	%
Victim	84	32.8
Undefined	58	22.7
Hero	40	15.6
Professional	30	11.7
Revenger	9	3.5
Professional-Undefined	8	3.1
Hero-Professional	7	2.7
Victim-Undefined	5	2.0
Hero-Undefined	3	1.2
Hero-Victim	2	0.8
Professional-Victim	2	0.8
Revenger-Undefined	2	0.8
Professional-Revenger	1	0.4
Multiple Hybrid (3+ roles)	5	2.0
Total	256	100

General Discussion

Examination of the BIS/BAS using the Gray and McNaughton (2008) version of the scale suggested consistency regarding factor analysis results, whereby the BAS/BIS factor structure indicated a five-component model, and the items attributed to the different BIS and BAS subscales loaded onto their respective component. While one item (10) did not load sufficiently onto any component; another item (7) did not load onto the expected component; and item 23 was cross loaded; the integrity of the

scale did not appear to be compromised; and the removal of these items would have insignificant effect on internal consistencies and correlations. Therefore, the findings do not point to the difficulties found in other studies (Levinson, et. al. 2010; Smillie et. al. 2006) which found significant problems with factor structure.

Of note from the findings is the predominantly weak inter-scale correlations, with the exception of BAS Drv and BAS RR. Unusually, the findings show week correlation between BIS Anxiety and BIS Fear given that they are both components of the inhibitory factor. In his original research, Gray (1970) did not draw distinction between the motivational systems incorporating traits of fear and anxiety; and while further research (Corr and McNaughton, 2008; Beck et al., 2009; Dissabandara, 2012) supported the defining of fear and anxiety as separate constructs, their association within the behaviour inhibitory system was considered significant, with each eliciting similar behavioural, emotional, and motivational output.

The CFA findings showed the NRQ presented five components for analysis. This is in contrast to the four factors traditionally identified and examined. There was consistency regarding the factor structure with regard to the Professional, Revenger, Victim, and Hero roles, with items identified in previous studies as attributable to the four themes loading onto their respective roles. However, the introduction of a fifth factor meant items considered representative of traits of the principle roles were assigned to the new factor. Consistencies within the NRQ were evident in other areas, and findings were generally supportive of Youngs and Canter (2012) measurements of

potency and intimacy in the roles. The only exception to this was the Hero theme which instead replicated the Professional theme (High Potency/Low Intimacy).

The findings are not supportive of the Criminal Narrative Experience (CNE) as it is structured. With significant inconsistences in the items and emotions which were expected to be associated with the principle themes. Again, the introduction of a fifth factor meant the CNE narrative and emotion statements were being diluted in a way the authors had not intended.

The integration of the BIS/BAS and NRQ subscales found only weak correlations between the factors of Hero/Fun Seeking; Professional/Anxiety and Revenger/Anxiety. Using the alternative BIS/BAS models did not show changes in correlation, with the Carver and White (1994) model maintaining the weak correlation (r_s = -.30) between Hero and Fun Seeking. Analysing the data based on participants responses showed that the victim role was dominant; Victim/Fear (11.7%, n= 30); Victim/Drive (11%, n = 27); and Victim/Fun Seeking (7%, n = 17). When considering the dual role/motivation findings, it is noticeable that the Victim/Drive and Victim/Fun Seeking categories present conflicting factors attributable to the individual motivation or role. For example, statements attributed to the victim by the NRQ include ‘I had to do it’; ‘it was like I wasn’t part of it’; and ‘I was helpless. In contrast, statements attributed to the Drive and Fun Seeking by the BIS/BAS scale include; ‘I crave excitement and new sensations’(FS); ‘I go out of my way to get things I want’ (Drv). The emotions attributed to the role and motivations are also in contrast; impulsive (FS);

excited (FS); motivated (Drv); determined (Drv); depressed, sad, lonely (victim). The analysis presents challenges to the traditional findings of the NRQ; and the presumed emotional attributes of the four criminal roles.

The BIS/BAS scale was developed from the conceptual view that neurobehavioural, or neuropsychological, systems underpin human personality. These systems are responsible for the person's motivations for appetitive and aversive behaviours; in reward attainment or punishment avoidance. The triggering of BAS behaviour is in response to appetitive stimuli; the FFFS is activated by adverse stimuli; while the BIS is activated by conflicting stimuli – when the BAS and FFFS are activated together. The Reinforcement Sensitivity Theory considers psychophysiological and neuropsychological concepts to explain behaviour motivation.

The examination of a linear relationship between the BIS/BAS components and the NRQ component roles showed poor correlations between the factors. The expected variances between the four models did not materialise, and neither model showed significant correlations between the BIS/BAS and NRQ factors. An analysis of the scatter plot indicated the unlikeliness of a linear relationship in the data, and so consideration was given to possible non-monotinic relationships, whereby the relationship between the factors as an 'inconsistent' relationship; insofar as a change in one factor *sometimes* causes a change in the other, which can be an increase or decrease.

This outcome diminishes the potential for predictive measures to be inferred about motivation and criminal roles, through combining the attributes of the BIS/BAS and NRQ.

Chapter Five

DISCUSSIONS and CONCLUSIONS

Introduction

The aim of this study was to examine whether the Narrative Roles Questionnaire (NRQ) could be used with the revised Reinforcement Sensitivity Theory's (rRST) Behaviour Inhibition System and Behaviour Approach System scales, (BIS/BAS) to provide descriptive information on the roles adopted by criminals, and the motivations that could be attributed to those roles. While the NRQ has been developed to be used with criminals; there is a dearth of research on how the BIS/BAS works with offenders. When BIS/BAS has been used with criminals, research has primarily looked at the behaviour inhibition system and its influence on offender's non-engagement with mental health or addiction treatment (Newman, MacCoon, Vaughn & Sadeh, 2005; Uzieblo, Verschuere, & Crombez, 2007). There has been no research conducted exploring the neuropsychological perspective of behaviour motivation; with the narrative roles provided by criminals.

Through rRST, this study conducted quantitative analysis on conditioned psychological responses to appetitive and adverse stimuli. rRST proposes that conditioned responses change neurochemical processes; which through neuroplasticity, can change the person's behaviour and identity at a neurological level. In contrast, the foundations of the NRQ are based on the criminal's narrative and life

story. The narrative framework provides a psychological view on the role, and related emotions and actions, that are adopted by the person to give them a sense of temporal coherence and control over their lives. Therefore, this study utilises the rRST and NRQ to consider the criminal from a neurological and psychological perspective.

While the end objective of this study was to integrate the two frameworks; the methodology necessitated a graduated approach, whereby the BIS/BAS and NRQ were analysed separately, and then combined. Therefore, the opportunity to initially discuss the findings of each instrument will be taken and discussed below.

Uniqueness of the study

This study is unique in a number of ways. Firstly, the NRQ has not been used with an Irish prison sample before, nor with an Irish non-clinical population. The analysis on whether the NRQ narrative roles, which have been predominantly defined through narratives obtained from UK prisoners, would apply to an Irish prison sample, has shown the conceptual themes to be transferrable to research with samples conducted outside of the UK. Similarly, the BIS/BAS scale has not been administered to an Irish Prison Population prior to this. There have been very few studies conducted with prisoners using the BIS/BAS scales and research using rRST has predominantly been conducted on students and medical patients. This study adds to the knowledge on the effectives of rRST with a prison sample. This is also the first study to combine the NRQ and rRST to examine the neuropsychological and narrative perspectives on criminal identity and roles, behaviour, and motivations.

A unique contribution is the finding of a fifth dominant narrative theme within the NAS and will be discussed later.

Discussion on the findings from the Behaviour Inhibition System/Behaviour Approach System scales

The early versions of the BIS/BAS scales developed by Gray (1982); Carver and White (1994) and Gray and McNaughton (2000), around which modern versions of the instrument have been build, were developed using university student samples. While they have since been utilised in a variety of settings with clinical samples; there has been very little examination of the factor structure of the BIS/BAS with offenders.

The initial analysis of the BIS/BAS scale showed consistency in the factors attributable to the five subscales identified by Gray and McNaughton (2000). The scale included the adapted version of the BIS components proposed by Heym et al., (2008), which identified three items measuring BIS Fear and a four item anxiety subscale. In contrast to previous studies (Poythress et al., 2008), the BIS subscales were not problematic, insofar as there was clear definition between BIS Anxiety and BIS Fear. The separation of the BIS subscales to include the traits of anxiety and fear, makes conceptual sense, as they can be considered different facets of personality and emotion. It is also worth noting that Gray and McNaughton (2000) suggested that experiences of anxiety and fear are regulated within different neurological systems, and therefore should be considered separate components. Poythress et al., (2008) found the original

Carver and White BIS/BAS scale (1994) worked differently when used with criminal and community populations; noting that the BIS did not divide into two components (Anxiety and Fear) when used with a community sample.

In this sample, correlations between the BAS subscales ranged from $r_s = .04$ (BAS FS and BAS Drv) to $r_s = .64$ (BAS RR and BAS Drv); which are noticeably different to community sample findings by Johnson et al., (2003) where the BAS range was between $r_s = .37$ and .51; and Carver and White (1994) college student sample which yielded a range between $r_s = .34$ and .41. This appears to indicate that the BAS subscales correlate stronger in community samples, rather than the current prison population sample. Further research is required on the different correlations of the BAS and BIS scale in clinical and non-clinical samples, with particular consideration given to the perception of fear and anxiety in clinical populations, as compared to the extent of theses emotions experienced in a community sample. As mentioned, the BIS/BAS scale has not previously been used with an Irish sample, and variations may also exist because of cultural or societal differences.

Findings from the Narrative Roles Questionnaire

The objective of this analysis was to examine whether the sample could be identified within the thematic structure of the NRQ. As with the BIS/BAS scale, the Narrative Roles Questionnaire has not been used with an Irish prison population before.

Previous research by Canter et al., (2003); Ioannou (2006); Youngs and Canter (2012); and Ioannou et al., (2017), found that criminals can provide narratives based on their perceptions of their criminal behaviour, identity, and circumstances; which gives insight into their perceived role, and the roles they imposed on others, during their criminal activity. Themes were identified within the narrative accounts provided by the criminals which could be categorised into four dominant narrative roles; Professional, Revenger, Victim, and Hero.

Unlike the findings of Canter et al., (2003) the current study identified five roles from the data, instead of the four roles normally associated with the thematic structure of the NRQ. The inclusion of the fifth theme, 'borrowed' items form the other roles – four from 'victim'; three from 'revenger'; one from 'professional'; and one from 'hero'; and became an eclectic component with motivational and emotional traits previously attributed to the other dominant themes. There was consistency in the factor structure of the four dominant roles with the remaining items; making those items consistent with themes identified with samples from other nationalities, such as the United Kingdom (Carthy, 2013) and Greece (Dedeloudis, 2016).

Conceptually defining the 'undefined'

A conceptual proposal for the undefined theme found here, is that of *Shadow*. In keeping with Frye's (1975) mythic archetypes, and Youngs and Canter's (2004) literary definitions of acted out roles; the Shadow is seen as a character within mythic literature (Vogel, 2007). The Shadow was also an archetype introduced by Jung

(1919). Jung proposed that archetypes were subconscious tendencies that influenced thoughts and behaviours, and as such, they were representations of a person's personality and identity. From the NRQ findings, items suggested to represent action traits of the Undefined role are also considered to be characteristic of the Shadow archetype. Jung described the Shadow as the dark side of the person's consciousness, which contains traits that are not only unacceptable in the person's world, but also to the person; and the person may reinterpret their behaviours to present a justification they can understand ('it was the only thing to do'; 'it was my only choice'). Fordham (2018) suggested the Shadow represents traits that exist but are not acknowledged, or identified with, by the person. When these traits are expressed as behaviours, the person feels victimised by the experience ('I didn't care what would happen'). The Shadow role is also considered to encompass emotions such as aggressiveness and selfishness; and is seen to be primitive whereby the person is a passive victim of their emotions and behaviours ('I was out of control'; I was taken over').

Nicolae (2016) defined the Shadow role as 'unmasking' the other characters in a story and adopting preferred characteristics from that role to achieve their goal. It is worth noting, the undefined role here has items attributed to other roles by Youngs and Canter (2012) and Ioannou et al., (2017) – Victim (4 items); Revenger (3 items); Hero (1 item) and Professional (1 item).

Jung's Shadow

According to Robertson (2016) if a person develops into a different, inferior, variation of the person they perceived themselves to be, then a compensatory version of their self-forms in their subconscious. In Jungian psychology this undesired version of the self is an archetype which Jung (1975) defined as the *Shadow*. Jung proposed the Shadow comprises everything the individual 'refuses to acknowledge about himself' (1971, p.284); and consists of traits that he considers unthinkable because of their depravity and wickedness. However, Jung believed that the Shadow cannot be diminished and made harmless through rational thought or self-negotiation. LaLlave and Gutheil (2012) described the Shadow as 'the dwelling place for evil and those contents that do not correspond with [the person's] self-image' (p.461). While Jung (1975) proposed the shadow is situated in the unconscious and is that part of the person which they feel does not represent their humanity; particularly elements which motivates them to want to engage in evil, aggression or cruelty; and which activates associated emotions and behaviour.

Jung (1975) believed archetypes could not be integrated into the personality without effort. Instead he proposed that archetypes are core principles which are fuelled by experiences and memories. In this way the archetypes act as motivations for behaviour based on perceptions of life experiences, and the significant experiences the person incorporated into their sense of self. Robertson (2016) suggested the activation of archetypes can be explained as a stimulus-response model of behaviour. While the Shadow is activated, the person's world is perceived as conflictual and containing

adversaries; and aspects of the person's world, societal or individual elements, are seen as standing in the way of goals, or the ideal.

Gill (2006) noted the shadow as having traits, attitudes and motivated behaviour that the person does not recognise within their sense of self or identity. The shadow represents the traits which are contrary to how the person see themselves, and how they want others to see them. According to Jung, the Shadow comes to the fore when the person is aware of their social and personal deficits; and they acknowledge their limitations and lack of power and control. This feeds the shadow's motivation to push back against their imperfect self and world though resentment and aggression. Connolly (2003) describes the shadow as 'an endless font of horror, shame, and guilt' (p. 414), which when activated, according to Jung (1957), defines the person as an individual.

Jung refers to the shadow as comprising of four elements within the self. The first is the dark and inferior, but accepted part of the personality; the second refers to tendencies that would not be socially accepted and contradict what are considered culturally positive interactions; next are negatively ethical or consequential behaviours and or moral evil, and finally, natural evil. Jung saw evil as existing in the world; and the shadow provides motivation to activate dark personal and societal traits which were conducive to evil acts. Jung noted the tendency within individuals where the shadow archetype was activated, to project onto others the expression of the shadow trait 'to

the degree that he does not admit the validity of the other person, he denies the 'other' within himself the right to exist' (Jung, 1957, para. 187)

According to Connolly (2003) Jung's shadow can be views as a component of the individual and society. She describes it as being personal and collective, with societies and cultures having different shadows, and ways of dealing with difference, conflict, death and evil. Connolly proposes that the shadow can be linked to acts of terror, which can be inflicted interpersonally, on a group, or against a society or ideology. The Shadow can be seen as an expression of power and control, and represented in society as actions of brutality against a repressed section of the community, genocide, or war crimes. When considering the manifestation of the Shadow from a societal viewpoint, McGuigan (2009) found society "exonerates itself by denying the evil, greed, intolerance, and filth that may exist within its collective Shadow. As long as we band together to repress our unacknowledged Shadow energy, we will treat other individuals, groups, and nations brutally, operating under the illusion that we are ridding the world of evil, when in fact we are the source of that evil" (p.356). This implies an acknowledgement that the potential of evil exists, but justifying its expression as the lesser evil.

As already noted, in developing their psychological framework for narrative differentiation, Youngs and Canter (2012) emphasised the work of McAdam (1993) and his proposal that concepts of self are centralised around two themes, Agency and Communion; whereby agency relates to power and goal attainment and communion

relates to positive interpersonal relationships. Youngs and Canter suggest when considering agency and communion to understand criminal action; communion, or *intimacy* as the term adopted by them in their research, reflects the offender's perception of the victim and the role ascribed to them by the criminal. The criminal may recognise the impact of their actions on the victim or be motivated to affect them through criminal action. The victim may also be perceived by the criminal as a vehicle for them to attain their goal or receive positive reward. Youngs and Canter defined agency, or *potency*, as the criminal's exercise of power over their victim. In this context the offender is seen as seeking to impose power and control on to their victim which would allow them to achieve their goals and reward. McAdams (1993) proposed that variations in the strength of agency and communion influence identity and behaviours related to that identity, and Youngs and Canter found criminal traits, behaviours, and concepts of self and identity can be categorised by variations in the influence of agency and communion. In defining criminal roles, they attributed different levels of agency and communion to the Victim, Hero, Professional and Revenger. Of particular interest is the categorisation of the Victim role as Low Potency (Agency)/High Intimacy (Communion); which is the same findings associated with the proposed Shadow role. Therefore, initial consideration must be given to whether the Shadow is simply a subcategory of the Victim role; or if multiple roles can hold the same degree of Agency and Communion, while having different characteristics which make them distinct from others?

The Differentiation of Agency and Communion

Abele and Wojciszka (2014) agreed with McAdam's definition of Agency and Communion and acknowledged that they were significant in a person's social perception. They went further and found that levels of agency and communion are crucial in determining the person's ability to humanise others. Bandura (1990) suggested that moral disengagement can include the dehumanisation of others, which can allow for the displacement of responsibility or the reinterpretation of criminal behaviours and narratives. The process of humanisation of others is important in recognising the potential of individuals or social groups, and seeing value in others (Haslam and Loughnan, 2014). This allows for the acknowledgement of common humanity in others and deserving of treatment within a moral scope. Where levels of agency and communion are conducive to the dehumanisation of others then this can lead to increased aggression, violence, prejudice, and discrimination against individuals or social groups. According to Abel and Wojciszka (2014) dehumanisation can have serious implications for the victims which can range from a discriminatory lack of support for an individual which might be offered to others, to mass killings targeting a societal group; such as homophobic motivated mass shootings, racial killings, and genocide. While genocide is an extreme example of the potential consequences of dehumanisation; the psychological process can see individuals and groups within general society being targeted such as women (Bernard et al., 2012), the elderly (Wiener, Gervais, Brnjic, and Nuss, 2014), immigrants (Costello and Hodson, 2011), the poor and people from the lower classes of society (Loughnan, Haslam, Sutton and Spencer, 2014). Where the dehumanisation of individuals occurs, it seems

to be imposed by those who perceive themselves as holding higher status and worth, onto those they deemed 'lesser', lower in status and value.

Rodrigueaz-Perez et al., (2011) found that individuals with high communion attribute the associated positive social relations and desire for social bonds onto their affiliated group. In contrast, they can be hostile towards other individuals or groups who they consider might undermine their relationship and bond with the affiliated group, or individuals within it. Musssweiler and Ockenfels (2013) demonstrated that where an individual sees similarity between themselves and others the individual will engage in altruistic cooperation to maintain the similarity, but also engage in increased violence and hostility towards others who do not conform, or belong, to the perceived norm. The traits identified by McAdams (1993) of those who experienced high communion – that of seeking social connections by caring, empathy and cooperativeness with others – do not prevent the individual from dehumanising others, nor prevent the negative classification of individuals and groups as lesser than how they perceive themselves (Vaes and Paladino, 2010). This appears counterintuitive to the traits, and associated behaviours, identified by McAdams, and adopted by Youngs and Canter (2012) in their descriptions of criminals found to have high communion levels. Vaes and Paladino (2010) found that there was no correlation between high levels of communion and the individual's willingness not to dehumanise others. They describe the person with high communion, who engages in dehumanisation, as holding an apathetic disposition towards others. When considering these apathetic tendencies, Formanowicz et al., (2018) noted neurological studies which 'indicate no difference in

behavioural and rating data, as well as in brain activation, measured by the fMRI for affiliative and hostile [stimuli]' (p.113). It was also found that some hostile neurological activations were recorded by individuals with high communion when stimuli indicating obstructions to gaol attainment was experienced.

These findings appear to show some variations and similarities in the traits assigned to the Victim role, which was found to have low agency/high communion by Canter et al., (2003) and Youngs and Canter (2012); whereby the offender is not apathetic during their criminal behaviour and places emphasis on the interpersonal transaction with the victim, and a desire to affect them. Youngs and Canter believed the Victim Role sees others as significant, relevant to the them, and central to their criminal action.

Feiler, Tost, and Grant, (2012) proposed that positive and prosocial behaviours can be divided into two motivations, instigating altruistic or self-serving actions. Nadler (2018) suggested that similarly communion could be seen in two contexts; where the individual strives to find a sense of belonging, and seek fulfilment through their relationship with others; or where they engage in altruistic behaviours to achieve a positive self-image and sense of self, while feeling apathetic towards others.

Gwinn et al., (2013) found that levels of agency did not influence the dehumanisation process; and individuals with low and high agency were capable of dehumanising others. Gray, Knobe, Sheskin, Bloom, and Barrett (2011) proposed that hierarchical power has little relevance in dehumanisation; and instead high levels of

agency can lead to the objectification of individuals and groups. Formanowicz et al., (2018) found that agency becomes more significant when imposed onto an individual or group, where they are perceived to be of lower relevance than the person, group, or society, assessing them. Historically acts of violence happen to individuals perceived as having low agency. Given that agency is measured by the perception of an individual of another, it can often be determined by a person's situation, environment, and their capacity in that situation for agency (van Zomeren and Dovidio, 2018). Therefore, agency can then be seen as influenced by conditions external to the individual, whereby individuals can be bestowed or deprived agency by individuals, groups, or society; and their agency will be reflected in interpersonal interactions. According to Formanowicz et al., (2018) victims are granted low levels of agency by those who are hostile to them. Where the criminal perceives the victim to lack power and value; or imposes low agency on them, the offender considers themselves to have higher agency. Agency is then seen, not as a predetermined characteristic, but rather a dynamic component of an individual which can be influenced by their sense of self, their perception of their world, and the interpersonal attitudes they ascribe to others (Koch et al., 2016).

The findings of this study show the roles of Victim and Shadow share low agency/high communion profiles, which raises the question whether the Shadow role is simply a subcategory of the Victim role; or whether it should be viewed as a distinct action role. As discussed above, motivations activated by communion can be seen as altruistic or self-serving; while the expression of agency can be dynamic and responsive to the levels of power and control perceived by the person of themselves or

granted to victims. Therefore, it is conceivable that criminal actions roles can have different motivations despite having the same levels of agency and communion.

Situating the Shadow within Frye's Theory of Mythoi

Frye (1957) reiterated his view that narratives can be identified within four mythoi (romance, comedy, irony and tragedy) but further proposed that there are six phases to each of the mythoi. Frye's theory presumed that narrative has a standard or typical pattern, but a phase can suggest a degree of variation from the norm in one of two directions; suggesting a variation in the plot pattern or plot ending. To capture these variations or deviations from the 'pure' mythoi, Frye suggested that mythoi consist of six phases; and described these phases as blending with adjacent mythoi. Frye proposed that the mythoi each have two grouping of three phases, with each grouping blending with an adjacent mythos (see Table 5.1). Frye explained that the phases of mythos exist parallel to, by not at the same time as, phases in the adjacent mythos; and concluded that there would be no merging between the phases of romance/irony and comedy/tragedy because they are opposite mythoi and not adjacent.

The individual items of the Narrative Action System continue to be relevant to the categories they were attributed to by previous research, including Youngs and Canter (2012) and Ioannou et al., (2017). However, to situate the Shadow within Frye's framework, consideration is given to the blended relationship between the narrative items associated with the mythoi; where the Shadow role was found to have four items from the victim and three items from the revenger roles. Therefore, it is proposed that the Shadow narrative is situated between the Autumn/Tragedy and Winter/Irony

mythoi, where the protagonists' traits are adopted from each, and phases are based on narratives of 'Individual's faults', 'natural law', and a 'world of shock and horror'.

Table 5.1. Frye's Phases of Mythoi. With overlapping tragedy and romance phases highlighted.

Plot and Role / Phases	Spring/ Comedy (Hero)	Summer/ Romance (Professional)	Autumn/ Tragedy (Revenger)	Winter/ Irony (Victim)
Existent society remains				
Criticism of society without change				
Existent society replaced by a happy society				
Happy society resists change				
Reflective and idyllic view				
Society ceases to exist beyond contemplation				
Complete innocence				
Youthful innocence of inexperience				
Completion of an ideal				
Individual's faults				
Natural law				
World of shock and horror				

Frye proposed that the blended phase of the Tragedy/Irony narrative, *'Individual faults'* represents the hero's transition from innocence of romantic existence to mature experience, where reality can he harsh, and expectations of the person are greater. Transitioning from their idealistic world of Romance/Summer, the protagonist can be overconfident and have fatal flaws that lead to their unhappiness or downfall. The next phase – *'Natural law'* – sees the hero becoming less prominent and being

overshadowed by other's perceptions of their actions. The hero perceives judgement, or is explicitly negatively judged by others, over his actions. His concept of self is then defined by others; and the hero or heroine feels a loss of power. The third phase is '*World of Shock and Horror'* whereby the hero's actions are seen as horrific and demonic, despite the hero believing their actions were righteous and for the betterment of the world. As the hero is confronted with others' negative judgement of their actions, and they realise they will not achieve the status they feel they deserve or be considered heroic, Frye described the hero's narrative as depicting humiliation and agony; and they will consider their death a release from their tragedy.

The above looks at the three blended phases of the tragedy and irony mythoi; but to adopt Canter et al., (2003) and Youngs and Canter (2012) methodologies in looking at the narratives and traits associated with the protagonist within the mythoi, it is necessary to examine Frye's manifestations and experiences of those heroes.

Frye's Autumn/Tragedy mythoi focus on the hero's tragic experiences, or observations of tragic events, rather than the actions of a specific villain. The tragic hero's narrative begins with the hero striving for what they perceive as attainable happiness; however, they are impacted by a negative event which causes them to seek natural justice, which they are denied. The hero can be tolerant of the initial injustice, which only affects them, and instead they focus on correcting the impact of the event. The hero is then faced with repeated tragic events or perceived injustices, which extends to others, and he is faced with a choice - to return to their peaceful, isolated

life; or seek revenge or justice which will lead to change. The hero realises he cannot choose both paths. Frye proposed that the tragic hero comes to the conclusion that his life of love, peacefulness, and family, are incompatible with the society he lives in. This evokes an internal conflict for the hero as he chooses to exclude himself from a social group to which he is trying to be part of. The tragedy mythoi centres on the hero experiencing isolation.

Frye suggested that the tragic hero begins with free will, but as life unfolds for him, he will be forced to seek revenge or make a tragic, and ultimately a doomed stand against injustice, unfairness, his perception of the ugliness of the world, or moral violations. The tragic hero's narrative begins with purpose and righteousness, where they perceive their actions to be right and just. Frye suggested they might define their role as almost divine. However, the hero can become self-deceptive as their actions become morally ambiguous; and what they have done to attain their goals moves from heroic to ironic.

Frye (1976) described the mythoi of Winter/Irony as representing a dark narrative based on uncertainty and failure. The hero experiences repeated disappointments and they are defeated or disenfranchised by the complexities of life. They experience insurmountable life challenges which are imposed on them, or which they bring about themselves through their actions. The protagonist tries to be heroic but will inevitably fail. The hero will dream of happiness, and strive to achieve their goal, but it is unattainable; whether because of their personal or imposed limitations, or because they

have unrealistic aspirations of their ideal world. The villain in the hero's narrative is non-specific, and more likely to be their circumstances; their lack of capacity, opportunity, and fragilities. The protagonist will gradually recognise their lack of agency, while their negative actions will be self-damaging, or directed towards people with less power and control. The hero will care what others think of him but will realise that it is unlikely to be positive, so will present a pretence of indifference.

A trait of the ironic hero is that of disorder and confusion which makes effective, reasonable, or logical action impossible. Frye described the ironic hero as complex, with fantasy as a fundamental component of their narrative. He described the hero wanting their ideal world, but lacking ability or motivation to bring it about; so they remain a critical spectator of their real world and those in it. The protagonist will want to break down social constructs, which they perceive as flawed; and they will attempt to change personal or societal order by creating disorder. This will be done in the form of actions that stray so far from acceptable behaviour and social norms that it is shocking. Frye proposed that a narrative centred around shock is reflective of cruelty and outrage and shock and horror refers to actions that shock completely. The ironic protagonist will want their actions to be seen as 'sacrificial symbolism' (AC, 223); while Frye described their actions as 'evil in personal form' (AC, 239)

The Conceptualised Traits of the Criminal Narrative Role: The Shadow

McAdams drew distinction between his imago and Jungian archetypes pointing out that Jung included 'abstract and conceptual' categorisations (McAdams, 1985, p.179)

He believed imago were more specific; existing as individual and personal representations which are more closely related to personality traits, rather than Jung's archetypes being components of a person's identity. However, while McAdams strives to define personality as individualism, Jung emphasis how the individual is defined by their conscious and subconscious processes. McAdams' imago is a representation of the self, defined by, and within the context, of their person's life experiences; while Jungian psychology considers the archetype as a primordial image that represents 'not only the form of the activity taking place, but the typical situation in which the activity is released' (Jung, 1954, p.152). In this regard, Jung spoke about the instigation of subconscious processes, brought into the conscious, which activate emotional and behavioural responses.

While McAdams (1993) considers his imagoes representative of the personal narrative which has been developed overtime and structured in the form of a life story; Jung identifies his archetypes as comprising, not only of the individual's external expression of the self, but also the subconscious activity which activate and influence those expressions. The findings of this study, aided by the Narrative Action System, bridges the gap (albeit conceptually in part) between McAdams and Jung by identifying the Shadow as a blending of neurological processes and narratives of the self.

The narrative categorisation of the Shadow and the Victim has been considered given that they both are seen to represent low agency/high communion traits; yet are found here to be distinct components of the Narrative Action System.

Frye established that phases of mythos do not exist at the same time, and so, the Victim narrative cannot exist when the Shadow narrative is active. Therefore, what constitutes the offence identity of the Victim associated with low agency/high communion will be inactive when the Shadow role is active; making the meaning of these components contrary in the new role.

Youngs and Canter's (2012) methodology in conceptualising the components of the narrative roles considered the influence of Potency (agency) and Intimacy (communion) on the criminal role. They conceptualised the characteristics of their criminal action roles based on variations in criminal narrative can be examined in terms of (i) the offender's identity (levels of agency and communion), (ii) emotional components, and (iii) cognitive distortion. Applying these criteria Youngs and Canter defined the offence identity of the Victim as having low agency which manifests as recurring emotions of loneliness, sadness and fear. They describe the victim as isolated, with limited capacity to attain their desired goal of social inclusion and acceptance by others. It was also determined the offender defined as acting out victim role would engage in criminal activity that would be concerned with others; while high communion suggested the criminal sought to impact their victim, impose their will, and exert power. The victim role will attempt to disassociate from their actions and

they will attempt to reinterpret their actions, not want to take responsibility for their behaviour, and placing blame elsewhere. If these characteristics are inactive when the Shadow role is active then it is hypnotised here that the Shadow role will have a different expression of agency and communion.

Applying the Youngs and Canter (2012) methodology; along with the characteristics and traits they outline are associated with NAS roles as defined by their criteria; it becomes possible to define the Shadow role. The Shadow has a weak offence identity, whereby the individual has little control and power within their personal and social world. This view is in conflict with their perceived sense of self; and evokes emotions of frustration, resentment, and anger, which activates the Shadow role. The offender will look to place blame for their lack of power and control onto individuals, groups, or societies, for what they perceive as injustices which maintain the offender's circumstances. The person sees their world as containing adversaries at this point, and with further reference to Frye's narrative structures and the differentiation of agency and communions as outlined above, it is proposed the expression of the Shadow can manifest in two ways.

In the first expression, the offender has an identifiable adversary, most likely a group or culture. The offender will view their actions as justifiable against their adversary; who they believe is eroding, or preventing, the offender's ideal world or ideal perception of self. They will seek affiliation with others who share their grievance; and through this social connection, they find agency. The Shadow's high

communion is placed onto their group; and they are apathetic to the experiences of their victims. Dehumanisation of the adversary is a significant element of the Shadow role; and as mentioned above the collective shadow is capable of extreme acts of cruelty and violence. The offender's actions may cause them shame and guilt; however, this is diluted when they consider their actions as part of the collective. The offender begins with free will, but this is replaced by social identity influences; and the momentum of criminal actions are maintained by group behaviours.

In the second hypothesised expression of the Shadow role, the offender does not have an identifiable, or more accurately, an impactable adversary. They perceive divine or unchangeable societal influences as the cause of their deficits and their disappointing perception of self. They have low levels of power and control in their lives, but through previously unimaginable action they are given a choice to obtain some degree of agency. The offender begins with free will, but this is eroded by their circumstances; and they conclude happiness is incompatible with their perception of the world. They have a wished-for ideal world, but this is not their experience, nor attainable. The offender's communion is placed onto a significant other, but they are apathetic regarding the agency of the other. The offender will take responsibility for what they perceive are righteous and selfless actions as a villainous hero; and they believe they are saving their victim from the ugliness and injustices of the world.

Conclusion

In their original research Canter et al., (2003) identified one item – "*I found I didn't care*" – which they stated "could arguably be interpreted as a region in its own right, as it does not co-occur with any other role to any significant degree. Moreover, offenders seem to have experienced their criminal activity in an apathetic and completely uninterested manner." (p.12). They defined this component as '*Indifferent*' and disregarded it from their research findings. It is worth noting that the original research used a twenty statement NRQ on a smaller sample, which may explain why the 'Indifferent' component did not achieve more prominence. While there is no further indication that there is a relationship between Canter et al., findings and the Shadow component found here, a variation on the item 'I didn't care what would happen' is common in both studies. Interestingly, Canter et al., (2003) placed emphasis on apathy as a distinct characteristic of their fifth component, which is proposed here as a distinctive trait of the Shadow role. It is possible the Shadow role was present in the original research but required the elaboration of the NRQ to a 52 item instrument, a reconsideration of exclusivity of levels of agency and communion influence on narrative roles, and consideration of Frye's blended narratives; to shine light on it and identify it as a fifth role.

This study identifies a distinct narrative role within the Narrative Action System, and using the methodologies adopted by Canter et al (2003) and Youngs and Canter (2012), can define the expected traits and characteristics of the Shadow role. The identification of the Shadow as a fifth component is a unique finding of this study; and

further research should examine whether the role is a consistent component of the NAS; a role which emerges in different contexts, or if the role is exclusively evident with an Irish prison population sample. If the latter emerges as a finding, then this may have implications regarding the application of the NAS in an international context.

Findings from the integration of the Narrative Roles Questionnaire and the Behaviour Inhibition System/Behaviour Approach System scales.

The primary objective of this study was to examine the descriptive information which might be produced from integrating the Narrative Roles Questionnaire and the Behaviour Inhibition System/Behaviour Approach System scales. The function of the NRQ is to consider the account provided by the criminal into their actions; whereby the themes presented in their perceived behaviour, role, and emotions, are founded on their concepts of identity, life story, personal, and world view. The NRQ has its foundations in the field of investigative psychology, (Canter et al., 2003; Ioannou 2006; Youngs and Canter 2012; and Ioannou et al., 2017), and categorises criminal actions into four dominant roles based on sociological and psychological perspectives. While the BIS/BAS is also a psychologically conceptualised theory, it examines the motivations of behaviour from a neurological perspective; proposing the person's exposure to appetitive and adverse stimuli cause conditioning, which in turn triggers neurochemical processes which activates or inhibits behaviour.

Following preliminary examination, whereby the sample was analysed using the BIS/BAS and NRQ scales; five dominant roles were identified from the NRQ; Hero,

Revenger, Professional, Victim, and a fifth themes which has been categorised as Undefined. The BIS/BAS subscales of BIS anxiety; BIS fear; and the BAS subscales of Drive, Fun Seeking and Reward Responsiveness were also found to be consistent within the sample.

Correlation between the five criminal roles (NRQ) and five motivations (BIS/BAS) was relatively poor; with only weak to moderate correlations between Hero/Fun; Professional/Anxiety; and Revenger/Anxiety. The findings indicated that based on normal expectation of correlation between the factors, there was not enough evidence to provide descriptive or predictive information regarding the criminal roles and their suitability to BIS/BAS motivations.

However, when the sample was analysed individually, and their responses to the items on the scales reviewed, it then became possible to categorise each participant as a NAS role and BIS/BAS motivation. This method had previously been used by Canter et al., (2003); Ioannou (2006); Youngs and Canter (2012); and Ioannou et al., (2017).

With consideration to traits for the dominant themes from the NAS categorised by Ioannou (2006); and characteristics associated with each of the BIS and BAS motivations proposed by Gray and McNaughton (2000), along with consideration of medical traits related to each motivational or emotional state (American Psychiatric Association, 2013; Kringelbach, & Berridge, 2016.), conceptually descriptions are proposed to categorise the person experiencing that state;

BIS Anxiety

The person is in a state of heightened arousal. They anticipate threat and can have physiological reactions such as faster heartbeat, shortened breath, and tensions; making social interactions uncomfortable. They worry about causing threats, and will try to avoid confrontation, or providing others reasons to be confrontational. Behaviours will be avoidant of threats; however, they may engage in risk behaviours, when the consequence of not doing so is considered more negative. They are prone to low causes for worries, hostility, anger, sadness, panic, phobias and social avoidance.

BIS Fear

The person is in a state of heightened alertness. They expect imminent harm or threat. The person will have physiological reactions such as fast heartbeat, feeling ill, and tension within their body. They may have poor decision-making capabilities as they try to move away from the threat. This can be done in panic. Alternatively, the person might be 'frozen' and unable to react to a threatening situation. The person can express intense emotions and impulsive reactions.

BAS Drive

The person will be motivated to achieve goals. They will demonstrate a need for achievement and status. They are unapologetic and egocentric, having little regard for the implications for others, in achieving their goal. They want to belong, have status and influence. They want reward but also to have others recognise their achievements.

They can be anxious and worried about not achieving goals but this can be manifested at others or society for getting in the way. Prone to impulsivity, self-serving acts, and justifying negative behaviour as necessary to achieve their goal.

BAS Fun Seeking

The person seeks unusual situations and activities. They tend to avoid boredom and can engage in risk behaviours to achieve thrills and new sensations. Prone to disinhibition and susceptible to engage in self-indulgent behaviours to achieve exciting outcomes. Prone to impulsivity and restlessness. Can be violent or aggressive to others if they appear to be in the way of fun opportunities.

BAS Reward Responsiveness

Person responds positively to the prospect of reward or the opportunity to experience pleasure. Can be impulsive and egocentric when confronted with reward related stimuli. They are susceptible to boredom and will seek out rewarding circumstances. Will prefer to seek opportunities for reward in groups. Will be energised when they find a rewarding experience and are prone to habit building to maintain the pleasure opportunity.

Hero

The Hero is exhilarated and excited by experiences. He defines himself as courageous and manly. The hero will seek adventures and fun. They are egocentric and believe their version of the world is correct. Can view societal norms as applying

to others, and too restrictive for him. The Hero will confront society and those that represent it (politicians, law enforcement) believing he is fighting for himself or a smaller community, may see himself as David against Goliath. The Hero strives for recognition.

Victim

The victim will identify as being depressed, confused and isolated. They will see their actions as forced upon them and justify their negative behaviours as having no choice. They will describe being out of control and will disassociate from their behaviour. Like the Hero, the Victim may see himself as David against Goliath, however, while the hero wants the confrontation; the victim sees it being forced upon him, and he will have a sense of weakness and dread.

Revenger

The revenger role will see their behaviour as justifiable because it is righting a wrong. They are described as angry, scared, and irritated. The revenger feels that power and control has been taken from them and they want it back. They may wait for 'natural justice' to rectify their problems, but when that does not happen they become frustrated and angry. They can plan and develop their actions as a mission.

Professional

The professional is calm and confident. They see themselves as content and capable and their capabilities and achievements have reinforced this view. They are striving

for a better existence and working towards that goal. They are territorial in their personal and world view insofar being very clear about what is theirs. They want to be surrounded by beautiful things. They also want status and recognition.

Application of the conceptual categorisations

From these categorisations of the NRQ and BIS/BAS factors presentations on the individual participants can be presented. For example;

Participant 228…

…is a 34 year old man, who describes himself as Irish. He is serving a five-year prison sentence for controlled drug offences; and has already served two years. His first warning from the Gardaí came when he was fifteen years old and he received his first conviction when he was seventeen years old for controlled drugs offences. He has spent a total of three years in prison. His responses from the combined questionnaire categorise him as Hero/Drive; and would suggest he possesses some of those characteristics;

*The **[Hero]** is exhilarated and excited by experiences. He defines himself as courageous and manly. The hero will seek adventures and fun. They are egocentric and believe their version of the world is correct. Can view societal norms as applying to others, and too restrictive for him. The Hero will confront society and those that represent it (politicians, law enforcement) believing he is fighting for himself or a*

smaller community, He may see himself as David against Goliath. He strives for recognition.

[Drive] *The person will be motivated to achieve goals. They will demonstrate a need for achievement and status. They are unapologetic and egocentric, having little regard for the implications for others, in achieving their goal. They want to belong, have status and influence. They want reward but also to have others recognise their achievements. They can be anxious and worried about not achieving goals but this can be manifested at others or society for getting in the way. Prone to impulsivity, self-serving acts, and justifying negative behaviour as necessary to achieve their goal.*

Participant 234…

…is an Irish male aged 36 years old. He is serving a six-year sentence for hijacking offences; and has served two years so far. He received his first warning when he was sixteen years old; and received his custodial sentence when he was eighteen years old for a public order offence. He has a total of 44 convictions and has spent a total of six years in prison throughout his life. *His responses from the combined questionnaire categorise him as Victim/Anxiety; and would suggest he possesses some of those characteristics;*

[Victim] *The victim will identify as being depressed, confused and isolated. They will see their actions as forced upon them and justify their negative behaviours as having no choice. They will describe being out of control and will disassociate from*

their behaviour. Like the Hero, the Victim may see himself as David against Goliath, however, while the hero wants the confrontation; the victim sees it being forced upon him, and he will have a sense of weakness and dread.

[Anxiety] *The person is in a state of heightened arousal. They anticipate threat and can have physiological reactions such as faster heartbeat, shortened breath, and tensions; making social interactions uncomfortable. They worry about causing threats, and will try to avoid confrontation, or creating circumstances which generate reasons to be confrontational. Behaviours will be avoidant of threats; however, they may engage in risk behaviours, when the consequence of not doing so is considered more negative. They are prone to low causes for worries, hostility, anger, sadness, panic, phobias and social avoidance.*

As can be seen, when the sample is analysed independently, there are similarities in the personality traits of the dominant roles and the characteristics of the individuals who are susceptible to the rRST motivations

From the findings of the study it is evident that the information gleaned from combining the NRQ and BIS/BAS is not predictive of criminal behaviour, and therefore would have little relevance to investigative law enforcement. However, the information obtained through analysing an offender's narrative role and motivation responses could be useful in a therapeutic context addressing risk management and recidivism prevention. However, as can be seen in the examples given of participants

228 and 234, the practical application of the combined model provides information which could be obtained through more efficient and less complex assessment methods.

Theoretical implications of the research

As mentioned, the combined analysing of the narrative roles and neurological theory of personality did not provide information that could be expanded to give additional insight into the motivational actions of the dominant criminal roles. However, this research is still valuable in concluding that the narrative roles do not provide a consistent susceptibility to anxiety or impulsivity as measured by the rRST. Instead, the research suggests it may not be beneficial to consider criminals, categorised by their narrative perceptions, as homogeneous groups when considering neurological processes.

The research found there was more informative detail was provided when the participants of the sample were analysed individually. This may be the strength of the combined questionnaire, but further research would need to be conducted. Given the information is specific to the individual, its use in a therapy setting might have some value. Understanding the person's insight into their identity and world; along with their perceptions of the role they acted out when they committed their offence, and the roles they imposed on others; could be valuable in treatment, when considered alongside the person susceptibility to conditioned and unconditioned stimuli which activate or inhibit behaviours.

The research also shows a difference in the findings of the BIS/BAS with clinical and non-clinical international samples. Given that the BIS/BAS has not been used with an Irish sample before, a comparison cannot be made as to whether (i) there is a difference in results with Irish clinical and non-clinical samples; and (ii) whether there would be a difference in those samples if compared in an international context.

Similar observations are made regarding the NRQ findings, and as it has not been used with an Irish sample before, there is no alternative data against which it might be compared.

Comments on the Criminal Narrative Experience (CNE) and current findings

Youngs and Canter (2012) proposed that the themes identified by the NRQ could be complimented by emotional qualities also being expressed by the criminals through their perceptions of their criminal actions, perceptions of identity, and circumstances. This presented the opportunity to ascribe emotional qualities to the four criminal roles, and therefore providing more descriptive knowledge of each theme. In their study, Ioannou et al., (2017) found correlation between emotions and criminal actions; and they developed the Criminal Narrative Experience (CNE) categorisation framework. The CNE identified dominant emotions which supplement the motivational traits of each criminal role.

The findings of the current study found little correlation with the CNE and emotions accredited to the narrative roles. Again, the presence of a fifth component may have

impacted on the correlation outcomes; but when the fifth component is set aside, the CNE continues to present a mix of role related motivations and emotions, which are not consistent with the emotion/role structure of the CNE. The findings highlight the difficulties in attempting to identify specific emotions relating to a person's identity or identification. Their role and perception of self within their world, and wider society, will be subjected to social interactions and influences which will induce responses, internally, through cognitions, emotions, or neurochemical processes; and externally, through activated or inhibited behaviours. To quantify the emotion at the time of the interaction might be possible, depending on the person's capacity for expressive communication. However, according to McAdams (1985), away from the interaction the person will try to understand and make sense of the event using past experiences as references and incorporate the interaction into their life story and narrative. As this process is undergone, the emotions at the time of the event might change as the person reinterprets the experience, their behaviour, and the interactions with others.

The concept of multiple emotions and motivations during criminal events was also considered by Ioannou et al., (2017), whereby they examined whether offenders adopt hybrid roles, two or more dominant narrative roles, during their criminal action. They found that 63% of their sample could be classified as pure types – categorised as having only one dominant role; while 0.83% were considered having hybrid roles. The current findings found 86% of the sample could be categorised as pure types, and 13% as hybrid roles. The discrepancy in these findings may relate to the inclusion/exclusion criteria applied to the sample. Ioannou et al., (2017), found 69.1% of their sample met

the criteria to be examined for hybrid roles; while 99.2% of the current sample met the criteria. There are no other significant differences between the samples which could easily explain the difference in meeting the inclusion/exclusion criteria. Given the variation in the findings, future research on hybrid criminal roles will need to consider factors which might influence the sample.

Practical implications for the Narrative Action System

The findings of this study present challenges for the Narrative Action System and its defining of motivational narratives as traits of the criminal action roles. The labels themselves elude to descriptive traits and characteristics of each criminal role. For example, it is reasonable to expect the Professional to be driven in their approach to criminal behaviour, while the Victim might be expected to feel higher levels of anxiety and fear. In describing the criminal roles, Canter et al., (2003) presented behaviours and motivations associated with emotions which can be considered here using RST.

Canter et al. described the Revenger role as; 'The essential element of plot in romance is struggle. The [revenger] faces constant change and new challenges throughout life's journey. He embarks on a quest and fights for revenge by taking control of the dangers' (p. 9). This is descriptive of having motivational *Drive* as the revenger attempts to achieve their goal. The researchers also described the Victim role as motivated by *Fear*; 'the role of the Victim reflects the story form of tragedy where the main imago is the "extraordinary victim" who confronts dangers in life arousing pity and fear'. (p. 10). They described the Professional role as 'this type of offender

could be described as an individual, who is acting professionally, perceives his crime as a job, therefore part of the routine of his life and he acknowledges his criminal behaviour' (p. 11). This description portrays the professional role as motivated by *Reward*, where the incentive is to receive profit from their criminal activity. Canter et al. describe the Hero as 'as an individual that sees himself as a hero and perceives the experience of crime as an interesting and enjoying adventure. He is propelled into criminal activity as a means of obtaining desired objects or people. Thus, his crime becomes an interesting and pleasurable experience, an adventure' (pp. 8-9). This description presents the criminal role as experiencing their criminal activities as *Fun Seeking*, while also noting that the Hero wants the *Reward* of obtaining desired objects.

Despite the NAS presenting motivations for criminal behaviour associated with the hero., revenger, victim and professional, the findings of this study suggest that correlation between the motivational factors measured by the BIS/BAS is not significant enough to be reliably attributed to the criminal roles. The findings suggest that the motivations measured by the RST cannot be applied predictively to define characteristics of the NAS roles. Therefore, it seems more accurate to consider criminal expressions regarding their offending behaviour as episodic, whereby the expression is related to a moment in time, or specific incident. The findings indicate that criminal experiences and subsequent expressions will be determined by exposure to external stimuli, which suggests that criminal roles are dynamic and can change depending on the influence of stimuli and the conditioned response activated by neurological processes. It is then possible that an offender will portray their role in

one episode of criminal activity as acting out a role, activated by stimuli in that environment. However, if they are exposed to different stimuli, they may experience the acting out of a different role dictated by other neural activity. This suggests that a hero in one episode of criminal activity, may be a revenger in the next; and therefore, there is limited value of analysing criminal narrative as expressions of predictive behaviour in future criminal episodes.

The findings also suggest that an offender may have a concept of self or identity but in the course of their criminal action they may experience stimuli that evokes behaviours which contradict these perceptions and activates or inhibits alternative behaviours. This might evoke emotions of confusion, shame, frustration, or anger, and the person may refuse to acknowledge those behaviours and emotions and instead revert back to the preferred concept of self. The criminal expression of their role then is not the acted out role, but their preferred role, which offers little value in understanding their criminal action.

This does not diminish the significance of the NAS in categorising the criminal narratives and role expressed by the offender as their perceived identity and concept of self. Understanding the psychological framework within which a criminal situates themselves, and their criminal action, can provide a valuable tool to investigative psychologists in predicting suspect interview behaviour (Youngs and Canter, 2009). In a suspect interview situation, the criminal will express a dominant narrative, and present a role reflective of their concept of self and identity which can be assessed

independently from the role activated by the stimuli/conditioned response during their criminal action. The characteristics of the expressed role will give some indication of the strategies which the offender may employ during the interview process.

The findings of this study found consistent correlations between the NAS dominant action roles and criminal expression of their perceived identity. While the findings conclude that the NAS cannot be relied upon to provide predictive behavioural characteristics of offender roles, it does identify the criminal concept of self and motivations to engage in criminal activity. Again, this insight would be valuable in establishing a therapeutic pathway for the offender.

Limitations of the research

The research objective was to conduct a quantitative analysis of combined output from the NRQ and BIS/BAS scales. In previous research using the NRQ (Canter & Heritage, 1990; Alison et al., 2000; Salfati, 2003; Canter & Ioannou, 2004; Youngs, Canter & Cooper, 2004), the data is analysed using Smallest Space Analysis (SSA) which allows for the variables not to be confined to a linear space. Using this method thematic structures within the NRQ can be identified through graphical representations in a three-dimensional space. The distance between the variables indicates its strength of correlation. While SSA was considered, analysis of the BIS/BAS had been conducted using Principal Components Analysis in other studies, and a decision was made to use this method.

Given that the rRST measured emotional factors (impulsivity and anxiety), it was expected that there would be correlation between the behaviour attributes of the narrative roles. It was also believed worthwhile to examine the NRQ using another analysis method. Consideration is now given to whether SSA might have shown relationships between the NRQ and the BIS/BAS items; and whether the approach used for analysis has limited the findings.

Another limitation of the research related to the methodology, and the repeated, but necessary, changes made to the data gathering process which limited access to descriptive and supplemental information about the study. For example, to increase participation numbers, the prisoners were met as a group and the research outlined to them. The questionnaire was given to prisoners who came forward and agreed to participate; and because of this it was not possible to gather information on those who did not volunteer and why they chose not to participate.

The current study did not support the concept of the Criminal Narrative Experience, and found that the roles identified did not correspond with the emotions prescribed to them. Further research on the emotional characteristics, in this case with an Irish sample, would be beneficial in providing more in-depth understanding of the criminal themes.

Potential for future research

The identification of a fifth component in this study is a unique finding and suggests that further research is required into the potential of additional roles being identified, other than the four narrative roles proposed by Canter et al., (2003). Frye's blended mythoi indicates that alternative narratives are situated within that model other than the four dominant narratives adopted in Canter et al., original research. Apart from the Shadow role – situated between Revenger/Victim (Frye's Tragedy/Irony); other roles potentially exist between Hero/Professional (Comedy/Romance); Professional/Revenger (Romance/Tragedy); and Victim/Hero (Irony/Comedy). Further research is needed on whether these roles can be identified within the NAS, and if so, what their traits, characteristics, and contribution to understanding criminal action would be. While the Shadow has been identified here and its traits and characteristics conceptualised, further research should also explore if the role is a consistent finding of the NAS. As mentioned, the Shadow has also been situated here within the NAS using Canter et al., (2003) and Youngs and Canter (2012) methodologies; however, given the findings of this study in identifying the importance of neurological consideration, further research should examine the neuropsychological processes which influence the expression of the Shadow.

Advances in medical technology and neuroscience allows for the examination of neural pathway activity, neurochemical processes, and the measurement of neural plasticity. Data can also be obtained on the regional activations of the brain when triggered by

external and internal stimuli. Ward (2012) questioned the emphasis placed on the work of Presser (2009) and McAdam (2008) by Youngs and Canter (2012) instead of neuropsychology and neurological research on identity, the self and traits, and motivation. The findings of this study highlight the necessary advancements needed in the Narrative Actions System to incorporate neuropsychological influences on the activation or inhibition of behaviour actioned by the criminal roles. This would permit research in the area of criminal action roles to move away from the conceptual predictions of role behaviour, to a more in-depth analysis of behaviours motivated by neuropsychological processes.

Exploration of the Narrative Action System, and the findings of this study, suggests that the NAS plays a valuable role in explaining and understanding an offender's actions and motivations, after their criminal activity. Further research is required, and most likely a reimaging of the NAS role behaviours, if the instrument is to move to a more predictive model. The incorporation of neuropsychological processes into an NAS predictive model would be an important component.

Conclusion

The aim of this study was to examine the influence of neuropsychological processes on criminal actions. The study explored the validity of incorporating the Narrative Action Roles perspective with the principles of Reinforcement Sensitivity Theory to determine the degree of correlation between motivated behaviours activated or inhibited by the offenders sense of self, identity, and role they acted out during criminal

activity; and motivations activated or inhibited by neuropsychological processes... The findings indicate that in its current version, determinations about criminal motivations cannot be applied to criminal action roles identified by the Narrative Action System. Furthermore, the study found that personality characteristics, motivations, traits, or actions, cannot be predicted using the NAS.. Unexpectedly, there was very little correlation between the narrative roles and the emotional states found in the RST, such as a person's susceptibility to adverse and appetitive stimuli.

This study found no evidence to suggest there is a significant relationship which would allow for a collaborative approach to understanding and predicting criminal motivations based on their concept of identity and criminal role, and their response to neurological processes. Interestingly analysis of the participants independently, did show similarities in the personality traits depicting the criminal roles and the characteristics of individuals susceptible to the RST motivations, suggesting research on behaviour activation and inhibition motivations with individuals within the narrative role groupings, is worth exploring in further studies.

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Appendix 1
Information Sheet

Information Sheet

Thank you for taking the time to read this information sheet.

Rationale for the study

My name is David Foley and I am conducting this research as part of my PhD in Investigative Psychology with the International Academy for Investigative Psychology Training Programme and University of Huddersfield.

What is being asked of you?

If you agree to take part in this study, you will be asked to complete a questionnaire taken from the International Comparison of Offender Narratives (ICON) project. This project looks at how you view your offence, and will be compared to views from countries around the world.

This should only take a few minutes to complete. All information that you provide is strictly confidential and anonymous.

Confidentiality

Only I and the person handing you the questionnaire will have access to your questionnaire and no identifying information is asked, at any time, throughout this research. The information is converted to number scores as soon as possible and the paper questionnaire is destroyed. Even though you cannot be identified, the computer containing the research scores is password protected and encrypted.

What will happen to the findings?

The questionnaire will form part of a thesis which I am completing as part of my PhD in Investigative Psychology. This thesis will be held in the University of Huddersfield in the UK.

Who can I contact for further information?

If you require any further information about the research, please contact me on:

Name: David Foley
E-mail: david.foley@hud.ac.uk

Thank You

Appendix 2
Participant's Consent Form

Participant Consent Form

I confirm that I have read and understood the participant information sheet regarding the above named study and consent to participate in the research.

I am aware that I am being asked to complete a questionnaire. While I am signing this consent form, I understand that once the questionnaire has been placed with others, it will be impossible to identify which questionnaire is mine.

I am aware that all information gathered will form part of a Doctoral thesis but that all information will remain **completely anonymous and confidential.**

I have had time to consider whether to take part in this study and my questions have been answered satisfactorily. I understand that my participation is voluntary and that I have the right to withdraw at any time from the research prior to my data becoming anonymised, which would make it impossible that my information could be identified, facilitating its removal from the study.

I consent to participate in the study. ☐ *Please tick if you consent.*

Appendix 3
Initial Version of the Combined Questionnaire

Notes: The initial questionnaire included;

A 'General Background' 60 item questionnaire
Questions to be considered during a semi structured interview
A Demographic questionnaire – 35 items
The Narrative Roles Questionaire – 52 items
The BIS/BAS questionnaire – 24 items

Note: BIS/BAS Scale

Each item of this questionnaire is a statement that a person may either agree with or disagree with. For each item, indicate how much you agree or disagree with what the item says. Please respond to all the items; do not leave any blank. Choose only one response to each statement. Please be as accurate and honest as you can be. Respond to each item as if it were the only item. That is, don't worry about being "consistent" in your responses. Choose from the following four response options:

		Very True For Me	**Somewhat True For Me**	**Somewhat False For Me**	**Very False for Me**
1	A person's family is the most important thing in life.	1	2	3	4
2	Even if something bad is about to happen to me, I rarely experience fear or nervousness.	1	2	3	4
3	I go out of my way to get things I want.	1	2	3	4
4	When I'm doing well at something I love to keep at it.	1	2	3	4
5	I'm always willing to try something new if I think it will be fun.	1	2	3	4
6	How I dress is important to me.	1	2	3	4
7	When I get something I want, I feel excited and energized.	1	2	3	4
8	Criticism or scolding hurts me quite a bit.	1	2	3	4
9	When I want something I usually go all-out to get	1	2	3	4
10	I will often do things for no other reason than that they might be fun.	1	2	3	4
11	It's hard for me to find the time to do things such as get a haircut.	1	2	3	4

12	If I see a chance to get something I want I move on it right away.	1	2	3	4
13	I feel pretty worried or upset when I think or know somebody is angry at me.	1	2	3	4
14	When I see an opportunity for something I like I get excited right away.	1	2	3	4
		Very True For Me	**Somewhat True For Me**	**Somewhat False For Me**	**Very False for Me**
15	I often act on the spur of the moment.	1	2	3	4
16	If I think something unpleasant is going to happen I usually get pretty "worked up."	1	2	3	4
17	I often wonder why people act the way they do.	1	2	3	4
18	When good things happen to me, it affects me strongly.	1	2	3	4
19	I feel worried when I think I have done poorly at something important.	1	2	3	4
20	I crave excitement and new sensations.	1	2	3	4
21	When I go after something I use a "no holds barred" approach.	1	2	3	4
22	I have very few fears compared to my friends.	1	2	3	4
23	It would excite me to win a contest.	1	2	3	4
24	I worry about making mistakes.	1	2	3	4

Note: Proposed Semi Structured Interview

Crime Interview:
INITIAL ACCOUNT

Crime narrative.

I would like you to tell me about and an offence that you have committed and can remember clearly. Describe one that is typical of the type of offences you have carried out in the past (except for murder then describe that). If you have only committed the offence you are incarcerated for then describe that. Please tell me in as much details about the event.

Tell me more, what happened.
Tell me who else it involved
Tell me what impact it had on your life

DETAILED ACCOUNT
Note to interviewers:
Idea is ask to describe in as much detail as possible. Use question prompts to ensure you are getting the richest and fullest possible description, so should ask all, even if it means some repetition. Asking all the questions will also help us to understand how to interpret missing information (i.e. if you ask all the questions and they don't mention e.g. a weapon, we can assume they didn't have one).
So output will be a free text account that we content analyse, not set of answers to specific questions.

Description of a Crime

Please could you tell me about what you did in a bit more detail.....

BEFORE
What were the events leading up to you committing the crime?

What preparations, if any, did you make?

What type of place or person did you pick?

Who did you go with?

Note: Proposed Semi Structured Interview (continued)

What did you take with you?

What did you do before you started?

How did you start the crime?

Did anyone see you starting the crime? Yes_____ No______
If someone saw you starting the crime what did you do?

What happened next?

DURING: THE DETAIL OF THE MAIN EVENT
What were your reasons for doing this crime/ what was the main purpose? How did you go about trying to achieve this?

So what did you actually do?:
i.e. (property crime) what did you nick?
i.e. (Person/ Damage Crime) what did you actually do to the person or place?

Burglary Specific questions:
How did you get in?

What did you do as soon as you were inside the house?

What else did you do inside the house?

What did you do to make sure you were safe from the people that lived there?

Did the people living in the house come across you? Yes_____ No_____
IF yes, what did you do?

Alternatives
You could have done this offence in a different way. What other ways might you have done it in? Why didn't you do it in these ways?

Sometimes you might decide to do a crime differently- can you think when and what you would have to adjust?

What else could you have done or taken that you didn't? If so why?

(Property crime) What stuff did you leave behind that you could have taken?
(Person crime/ Damage crime) So why did you stop/ leave it there?

Note: Proposed Semi Structured Interview (continued)

You said your main reasons/ purpose was…. Why did you choose this/ get this by doing this particular crime, rather than another type?

CHANGES due to SITUATIONAL FACTORS or INTERACTIONS

Did you change what you planned to do during the course of the crime at all? (if so how and why)

Did anything unexpected happen? How did this change what you did?

Did anyone/ the person do anything you didn't expect? So what did you do?

Was there anything in the place or about the place that you didn't expect? So what did you do?

ENDING

What did you do to make sure you didn't get caught?

Note: 52 Item Narrative Roles Questionnaire

For the **crime that you have just talked about**, please indicate the extent to which each of the statements below describes what it was like.

	Not at all	Just a little	Some	A lot	Very Much
1. I was like a professional	1	2	3	4	5
2. I had to do it	1	2	3	4	5
3. It was fun	1	2	3	4	5
4. It was right	1	2	3	4	5
5. It was interesting	1	2	3	4	5
6. It was like an adventure	1	2	3	4	5
7. It was routine	1	2	3	4	5
8. I was in control	1	2	3	4	5

9. It was exciting	1	2	3	4	5
10. I was doing a job	1	2	3	4	5
11. I knew what I was doing	1	2	3	4	5
12. It was the only thing to do	1	2	3	4	5
13. It was a mission	1	2	3	4	5
14. Nothing else mattered	1	2	3	4	5
15. I had power	1	2	3	4	5
16. I was helpless	1	2	3	4	5
17. It was my only choice	1	2	3	4	5
18. I was a victim	1	2	3	4	5
19. I was confused about what was happening	1	2	3	4	5
20. I was looking for recognition	1	2	3	4	5
21. I just wanted to get it over with	1	2	3	4	5
22. I didn't care what would happen	1	2	3	4	5
23. What was happening was just fate	1	2	3	4	5
24. It all went to plan	1	2	3	4	5
25. I couldn't stop myself	1	2	3	4	5
26. It was like I wasn't part of it	1	2	3	4	5
27. It was a manly thing to do	1	2	3	4	5
28. For me, it was like a usual days work	1	2	3	4	5
29. I was trying to get revenge	1	2	3	4	5
30. There was nothing special about what happened	1	2	3	4	5
31. I was getting my own back	1	2	3	4	5
32. I knew I was taking a risk	1	2	3	4	5

33. I guess I always knew it was going to happen	1	2	3	4	5
34. I was grabbing my chance	1	2	3	4	5
35. I didn't really want to do it	1	2	3	4	5
36. It was distressing	1	2	3	4	5
37. At that time I needed to do it	1	2	3	4	5
38. It was the only way to rescue things	1	2	3	4	5
39. I was in pain	1	2	3	4	5
40. I was in misery	1	2	3	4	5
41. I felt hunted	1	2	3	4	5
42. I was in an unlucky place in my life	1	2	3	4	5
43. I was taken over	1	2	3	4	5
44. I was out of control	1	2	3	4	5
45. It was satisfying	1	2	3	4	5
46. It was a relief	1	2	3	4	5
47. It was easy to force them to do exactly as I wanted	1	2	3	4	5
48. I kept total control of them	1	2	3	4	5
49. I was showing them how angry I was	1	2	3	4	5
50. I was proving my point	1	2	3	4	5
51. I was just trying to make them understand me	1	2	3	4	5
52. I was just trying to make them see					

Note: Background Inforemation

GENERAL BACKGROUND

Have you ever….

	NEVER	***ONCE OR TWICE***	***A FEW TIMES (LESS THAN 10)***	***QUITE OFTEN (10-50 TIMES)***	***VERY OFTEN (MORE THAN 50)***
1.Broken into a house, shop or school and taken money or something else you wanted?					
2.Broken into a locked car to get something from it?					
3.Threaten to beat someone up if they didn't give you money or something else you wanted?					
4. Actually shot at someone with a gun?					
5.Pulled a knife, gun or some other weapon on someone just to let them know you meant business?					
6.Beat someone up so badly they probably needed a doctor?					
7.Taken heroin?					
8.Broken the windows of an empty house or other unoccupied building?					
9.Bought something you knew had been stolen?					
10.Intentionally started a building on fire?					
11. Been involved in gang fights?					
12.Taken things of large value (worth more than €100) from a shop without paying for them?					
13.Taken Ecstasy (Es)?					

14.Broken into a house, shop, school or other building to break things up or cause other damage?					
15.Sniffed glue or other solvents (e.g. tippex thinner)?					
16.Used or carried a gun to help you commit a crime?					
17.Prepared an escape route before you carried out a crime?					
18.Taken care not to leave evidence (like fingerprints) after carrying out a crime?					
19.Got others to act as 'watch' or 'lookout'?					
20.Acted as 'watch' or 'lookout'?					
21.Taken special tools with you to help you carry out a crime?					
	NEVER	***ONCE OR TWICE***	***A FEW TIMES (LESS THAN 10)***	***QUITE OFTEN (10-50 TIMES)***	***VERY OFTEN (MORE THAN 50)***
22.Molested or fondled someone (in a sexual way) without their permission?					
23.Stolen a car to ring it?					
24.Nicked a car to go for a ride in it and then abandoned it?					
25.Stolen things you didn't really want from a shop just for the excitement of doing it?					
26.Nicked things from a shop and then sold them on?					
27.Carried a gun in case you needed it					
28.Stolen something to eat because you were so hungry?					
29.Made a shop assistant give you money from the till?					
30.Helped your mates smash up somewhere or something even though you really didn't want to?					

31.Beat up someone who did something to one of your mates?					
32.Nicked stuff you didn't want just because all your mates were doing it?					
33.Done a burglary in a place that you knew would be hard to get into?					
34.Stolen stuff from a shop that had a lot of security?					
35.Had to take part in a fight your mates were having with another group of kids even though you didn't want to?					
36.Taken drugs you didn't want because everyone else there was having them?					
37.Nicked a badge or something from an expensive car (like a BMW) to keep for yourself?					
38.Pretended your giro had been nicked because you needed a bit more money?					
39.Actually used a knife to hurt someone?					
40.Bought pirate videos or CDs to sell on?					
41.Bought pirate videos or CDs to keep for yourself?					
42. Sold heroin?					
	NEVER	***ONCE OR TWICE***	***A FEW TIMES (LESS THAN 10)***	***QUITE OFTEN (10-50 TIMES)***	***VERY OFTEN (MORE THAN 50)***
43.Sprayed graffiti on a building or public wall?					
44.Done a burglary on a really big, posh house?					
45.Broken into a warehouse and stolen goods worth more than €1000?					
46.Smashed the glass of a bus shelter or phone box?					

47.Set fire to a bin?					
48.Set fire to a car even though you didn't know whose it was?					
49.Killed someone in a fit of anger or emotion?					
50.Parked in a disabled space?					
51Got a bit violent with your family at home?					
52.Pretended that you had lost stuff to the insurance company?					
53.Drawn benefit when you were working?					
54.Gone to a sauna or massage place to get sex?					
55.Nicked the purse of someone you knew?					
56.Done a burglary on the house of someone you knew?					
57.Sold marijuana (pot/grass?)					
58.Threatened someone you knew with a knife?					
59.Set fire to a building when people were still in there?					
60.Made new credit cards with stolen card numbers?					

Note: Demographic Information

Now please tell me about yourself….

Male_______ or Female________

How old are you? ______________

What ethnicity are you?   Please tick below.

White	Black-Caribbean	Black-African	Indian	Chinese	Pakistani	Bangladeshi	Other Please say what

What qualifications did you get at school? (Junior Cert/Leaving Cert)

Note: Demographic Information (continued)

Write down any other qualifications or training that you have? (Things like NVQs or military training or sports skills)

What courses/ sessions have you attended in prison if any?

How old were you when you were first given an official warning by the police?

How old were you when you were first found guilty of a crime in court?

What was this for? ____

About how many convictions have you got in total (include everything)?___________

About how many times have you been up in court?_______________

What do you have convictions for? Please write **all the different types** of convictions that you have.

What are **most** of your convictions for?

What was your **first** conviction?

Do either of your parents or step-parents have convictions? Yes_____ No______

If yes, what for?____

Have you been to a prison or a Young Offender's Institution before?
Yes_______No________

If yes, how long were you away for before? __________months

Note: Demographic Information (continued)

How long was the sentence you were given (this time)? ___________months

How much of this have you served so far? ___________months

Have you been on probation before? Yes_______ No_______

As a child did you live? (If you lived in different places please tick all those that apply) :-

with my Mum and Dad	-__________________________
with just one of my parents	-__________________________
with my Mum and step-Dad	-__________________________
with my Dad and step-Mum	-__________________________
with other relatives	-__________________________
with foster parents	-__________________________
in a Children's or Community Home	-__________________________
Other (please say)	-__________________________

Did any brothers or sisters (or step brothers or step sisters) live with you?
Yes _________ No___________

If yes, how many lived with you? -___________

What ages are they now?

Do they have any criminal convictions? Yes___________ No___________

If so, what are these for?

If you know, please tell me what job your parents (or step-parents) do.
If they are unemployed tell me about their most recent job:-

Father/ Step-father: What is the job called? ________________________

What do they do? ____________________________

Note: Demographic Information (continued)

Full time or Part time? ________________________

Are they unemployed now? Yes______ No_______

Mother/ Step mother: What is the job called? ________________________

What do they do? ____________________________

Full time or Part time? ________________________

Are they unemployed now? Yes______ No_______

Appendix 3
Final Version of the Combined Questionnaire

Earlier versions of the questionnaire and the changes made:

Version 2:	Semi structured interview was removed from research procedure
Version 3:	Background questionnaire & revised background questionnaire was removed
Version 4:	More concise demographic sheet was included
Version 5:	Removal of Information Sheet from 'handed out' questionnaire. Information Sheet was available separately.
Version 6:	Consent Form was removed from 'handed out' questionnaire. Consent form was completed separately.

Final version of the questionnaire includes brief information regarding the study and assurances regarding confidentiality and anonymity. The questionnaire requests concise demographic information; and the NRQ and BIS/BAS questionnaires.

Note: Demographic questionnaire

- This questionnaire is part of research from the University of Huddersfield to try examine how people feel about a significant crime they have committed.
- The information is **confidential**. And no personal information is asked for. All of the information is **anonymous** and is only used for research.
- Once the data is gathered this questionnaire is destroyed.
- It should only take a few minutes to fill in. **Thank you**.

Please tell me a little about yourself….

How old are you? _______________

What offence were you convicted of that led to your current or most recent sentence or probation supervision?

____

How long was the sentence/probation supervision you were given (this time)? ____________months

How old were you when you were first given an official warning by the Gardaí/police? ___________

How old were you when you were first found guilty of a crime in court? ________________________

What was this for? ____

About how many convictions have you got in total (include everything)? ______________________

Consider all your convictions, how long have you spent in prison in total? _____________________

What are **most** of your convictions for? ____

What was your **first** conviction? ____

Have you been to a Young Offender's Institution before? Yes_______ No________

Note: Narrative Roles Questionnaire

PLEASE CHOOSE ONE BOX ON EVERY LINE

I would like you to **think about an offence that you have committed and can remember clearly**. Choose one that is typical of the type of offences you have carried out in the past (except for murder then choose that). If you have only committed the offence you are incarcerated for then use that.

For the **crime that you are thinking about**, please indicate the extent to which each of the statements below describes what it was like.

	Not at all	Just a little	Some	A lot	Very Much
1. I was like a professional	1	2	3	4	5
2. I had to do it	1	2	3	4	5
3. It was fun	1	2	3	4	5
4. It was right	1	2	3	4	5
5. It was interesting	1	2	3	4	5
6. It was like an adventure	1	2	3	4	5
7. It was routine	1	2	3	4	5
8. I was in control	1	2	3	4	5
9. It was exciting	1	2	3	4	5
10. I was doing a job	1	2	3	4	5
11. I knew what I was doing	1	2	3	4	5
12. It was the only thing to do	1	2	3	4	5
13. It was a mission	1	2	3	4	5
14. Nothing else mattered	1	2	3	4	5
15. I had power	1	2	3	4	5
16. I was helpless	1	2	3	4	5

17. It was my only choice	1	2	3	4	5
18. I was a victim	1	2	3	4	5
19. I was confused about what was happening	1	2	3	4	5
20. I was looking for recognition	1	2	3	4	5
	Not at all	**Just a little**	**Some**	**A lot**	**Very Much**
21. I just wanted to get it over with	1	2	3	4	5
22. I didn’t care what would happen	1	2	3	4	5
23. What was happening was just fate	1	2	3	4	5
24. It all went to plan	1	2	3	4	5
25. I couldn’t stop myself	1	2	3	4	5
26. It was like I wasn’t part of it	1	2	3	4	5
27. It was a manly thing to do	1	2	3	4	5
28. For me, it was like a usual days work	1	2	3	4	5
29. I was trying to get revenge	1	2	3	4	5
30. There was nothing special about what happened	1	2	3	4	5
31. I was getting my own back	1	2	3	4	5
32. I knew I was taking a risk	1	2	3	4	5
33. I guess I always knew it was going to happen	1	2	3	4	5
34. I was grabbing my chance	1	2	3	4	5
35. I didn’t really want to do it	1	2	3	4	5
36. It was distressing	1	2	3	4	5
37. At that time I needed to do it	1	2	3	4	5
38. It was the only way to rescue things	1	2	3	4	5
39. I was in pain	1	2	3	4	5

40. I was in misery	1	2	3	4	5
41. I felt hunted	1	2	3	4	5
42. I was in an unlucky place in my life	1	2	3	4	5
43. I was taken over	1	2	3	4	5
44. I was out of control	1	2	3	4	5
45. It was satisfying	1	2	3	4	5
	Not at all	**Just a little**	**Some**	**A lot**	**Very Much**
46. It was a relief	1	2	3	4	5
47. It was easy to force them to do exactly as I wanted	1	2	3	4	5
48. I kept total control of them	1	2	3	4	5
49. I was showing them how angry I was	1	2	3	4	5
50. I was proving my point	1	2	3	4	5
51. I was just trying to make them understand me	1	2	3	4	5
52. I was just trying to make them see	1	2	3	4	5

Note: BIS/BAS Questionnaire

PLEASE CHOOSE ONE BOX ON EVERY LINE

Each item of this questionnaire is a statement that a person may either agree with or disagree with. For each item, indicate how much you agree or disagree with what the item says.

		Very True For Me	**Somewhat True For Me**	**Somewhat False For Me**	**Very False for Me**
1	A person's family is the most important thing in life.	1	2	3	4
2	Even if something bad is about to happen to me, I rarely experience fear or nervousness.	1	2	3	4
3	I go out of my way to get things I want.	1	2	3	4
4	When I'm doing well at something I love to keep at it.	1	2	3	4
5	I'm always willing to try something new if I think it will be fun.	1	2	3	4
6	How I dress is important to me.	1	2	3	4
7	When I get something I want, I feel excited and energized.	1	2	3	4
8	Criticism or scolding hurts me quite a bit.	1	2	3	4
9	When I want something I usually go all-out to get	1	2	3	4
10	I will often do things for no other reason than that they might be fun.	1	2	3	4
		Very True For Me	**Somewhat True For Me**	**Somewhat False For Me**	**Very False for Me**
11	It's hard for me to find the time to do things such as get a haircut.	1	2	3	4

12	If I see a chance to get something I want I move on it right away.	1	2	3	4
13	I feel pretty worried or upset when I think or know somebody is angry at me.	1	2	3	4
14	When I see an opportunity for something I like I get excited right away.	1	2	3	4
15	I often act on the spur of the moment.	1	2	3	4
16	If I think something unpleasant is going to happen I usually get pretty "worked up."	1	2	3	4
17	I often wonder why people act the way they do.	1	2	3	4
18	When good things happen to me, it affects me strongly.	1	2	3	4
19	I feel worried when I think I have done poorly at something important.	1	2	3	4
20	I crave excitement and new sensations.	1	2	3	4
21	When I go after something I use a "no holds barred" approach.	1	2	3	4
22	I have very few fears compared to my friends.	1	2	3	4
23	It would excite me to win a contest.	1	2	3	4
24	I worry about making mistakes	1	2	3	4

THANK YOU