Testing a New Model of Criminal Social Identity in a Sample of UK Youth Offenders

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ABSTRACT

Reoffending rates for youth offenders have, not only shown to increase over the past ten years, but also exceed the reoffending rates for adult offenders. It is imperative that focus is drawn to reducing such reoffending rates in youths, particularly as they may be more responsive to intervention. Current intervention programmes for youth offenders have shown to have some promising elements but there are also limitations to many of the commonly used intervention programmes. Societal changes also dictate the need to continue to support or develop existing programmes. As such, it is key to explore the underlying factors that may lead to offending. The Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI) forms the basis for such research, however, gaps have been noted in the samples adopted. Limited research utilises youth offender samples and/or female or mixed gender samples. The present thesis aims to address this gap in research by testing the IPM-CSI in a mixed gender youth offender sample.

The Measure of Delinquent Social Identity (MDSI) was devised and validated to address the previous void in a lack of measure of criminal social identity specified for juveniles. In order to test the MDSI a sample of five hundred and thirty-six (N = 536) youth offenders (males n = 348; females n = 188) was selected from UK community youth offending teams. This sample was also utilised in subsequent chapters. Using confirmatory factor analysis, the model identified as being the best fit for the data was a bifactor model with three grouping factors (cognitive centrality, in-group affect, and in-group ties), while controlling for the general factor. Using composite reliability, the MDSI was shown to have good reliability. The MDSI was then utilised in subsequent chapters.

The subsequent empirical chapter aimed to test the constructs of the Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI) in a sample of youth offenders. Previous research has tested the separate entities of the IPM-CSI model, but it has not been tested as a whole. In order to test the model, two separate path analyses were performed for the two genders. Findings indicated some constructs of the model were only significant for males, e.g. a negative correlation between self-esteem and cognitive centrality for males only. Findings also indicated that some constructs of the model were only significant for females, e.g. a positive correlation between affective responsiveness and in-group ties for females only. The findings provide some support for aspects of existing interventions programmes while suggesting other target areas. Furthermore, the present research supports the implementation of gender specific intervention programmes.

The third empirical chapter aimed to explore the effects of each of the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation, and egocentricity) on the relationship between associations with other offenders and delinquent social identity. Moderated regression and simple slop analyses revealed the relationship between criminal friends index and the facets of delinquent social identity were moderated by varying levels of interpersonal manipulation, cognitive responsiveness, affective responsiveness, and egocentricity. It is recommended that future research utilise a larger or more proportionate sample in order to consider gender differences in the moderating role of psychopathy.

To summarise, the present thesis has identified support for some areas of the IPM-CSI. As such, these elements can be incorporated into interventions programmes with a view to reducing reoffending. The present thesis highlighted gender similarities and differences indicating which areas of interventions programmes can be utilised for both genders and which areas ought to be tailored to gender specific needs.

LIST OF ABBREVIATIONS

A	In-group Affect
A	Cronbach's Alpha
AR	Affective Responsiveness
ART	Aggression Replacement Therapy
ASB	Antisocial Behaviour
ATT	Parental Attachment
β	Standardised Regression Weight
C	Cognitive Centrality
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CFI	Criminal Friends Index
CI	Confidence Interval
CR	Cognitive Responsiveness
Crim friend	Criminal Friend Index
CSI	Criminal Social Identity
DSI	Delinquent Social Identity
Df	Degree of Freedom
DV	Dependent Variable
E	Egocentricity
F	*F-ratio*
FA	Factor Analysis
G	General Factor

IPM	Interpersonal Manipulation
IV	Independent Variable
IPM-CSI	Integrated Psychosocial Model of Criminal Social Identity
JETS	Juvenile Enhanced Thinking Skills
LCA	Latent Class Analysis
LSRP	Levenson Self-Report Psychopathy Scale
M	*Mean*
Mdn	Median
MCAA	Measure of Criminal Attitudes and Associates
MCSI	Measure of Criminal Social Identity
MCSI-R	Measure of Criminal Social Identity-R
MDSI	Measure of Delinquent Social Identity
MST	Multisystemic Therapy
N	Reference to number of subjects or participants in the total sample
n	Reference to number of subjects or participants in part of the total sample
NO	Living without parents
OSPS	Organizational Structure and Prizonisation Scale
P	*P*-value (indicates significance)
PAR	Living with parent
ρc	Reliability of the factor structure
PPTS	Psychopathic Personality Traits Scale
R&R	Reasoning and Rehabilitation
REA	Rapid Evidence Assessment

REJ	Parental Rejection
RMSEA	Root-Mean-Square Error of Approximation
RMSR	Root Mean-Square Residual
SCT	Self-Categorisation Theory
SD	Standard Deviation
SE	Self-Esteem
SE	Standard Error
SEM	Structural Equation Modelling
SEM-D	Self-Esteem Measure for Delinquents
SI	Suicidal Ideation
SIT	Social Identity Theory
SLT	Social Learning Theory
SPSS	Statistical Package for the Social sciences
SREP	Sciences School Research Ethics Panel
SRP	Self-Report Psychopathy Scale
SRP-SF	Self-Report Psychoapthy Scale – Short Form
SUP	Parental Supervision
T	In-group Ties
TLI	Tucker Lewis Index
WLSMV	Weighted Least Squares Means and Variance adjusted
WRMR	Weighted Root-Mean Square Residual
YJB	Youth Justice Board
YOT	Youth Offending Team

$\chi 2$	Chi-square
λi	Standardised factor loading
Θi	Standardised error variance

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CHAPTER ONE:

Introduction and Research Aims

1.1 INTRODUCTION AND RESEARCH AIMS

In 1998 the youth justice system was introduced to begin to consider ways in which to manage youths who committed crime as at the time there were no structures in place. Concerns were reported that groups of youths were behaving antisocially and causing significant problems within communities. The aim of the new processes of the youth justice system was to identify early signs of offending behaviour and target the issues effectively and efficiently. As a result, the Crime and Disorder Act 1998 imposed youth offending teams (YOT) across all local authorities to provide a consistent multi-disciplinary approach to tackling youth offending. The youth offending teams consist of representations across support services including the police, social services, probation, health care and education. The responsibility of YOT is to manage and supervise youths who receive out-of-court disposals and youths who are released from custodial sentences. Therefore, individuals who are managed by the youth offending team include youths who have and have not experienced custodial sentences.

There have been significant developments over the past twenty years in the processes of the youth offending teams. While reprimands and warnings are no longer in practice for youth offenders, one of the main adaptations is the increase of out-of-court disposals for youths (restorative justice, diversion scheme, caution and conditional caution). This increase of out-of-court disposals is reflected by the Ministry of Justice (2018) report showing a decrease of 79% in arrests of youth offenders between 2007 and 2017 and only 6% of youth offenders who were convicted at court in 2017 received a custodial sentence. Processing criminal convictions out of court is beneficial for the financial economy but also allows youth offenders to conduct rehabilitation work in the community setting with an allocated youth worker.

Despite changes to the youth criminal justice process, the reoffending rate for youth offenders increased by 4% between 2007 and 2017 (Ministry of Justice, 2018). Additionally,

youth offenders tend to be at higher risk of reoffending than adults, with juveniles (aged 10-17) displaying a general reoffending rate of 37.9% compared to adults with a 23.7% reoffending rate (Ministry of Justice, 2015).

The importance of intervening with youth offenders while they are still young is highlighted by Lipsey (1999), who states that children are more malleable and responsive to intervention. The Youth Justice Board (YJB) has therefore incorporated youth offender behaviour programmes into their key elements of effective practice (YJB, 2008). Thus, the implementation of youth offender behaviour programmes is well supported within the justice system. It is therefore vital to broaden knowledge and understanding of youths' behaviours and predictors of offending in order to develop effective interventions programmes. The importance of research is paramount to youths' development as implementing unaccredited offender behaviour programmes may be more detrimental to youth offenders than not providing any intervention (Petrosino, Turpin-Petrosino, & Buehler, 2003). Particularly, programmes that target an offender's cognitions, self-evaluations, expectation and values, as well as behaviour and interpersonal skills, were reported to be more than twice as effective as those that did not (Izzo & Ross, 1990) and hence it appears that research should focus on these areas in particular. Andrews, Bonta and Hoge (1990) also suggest that interventions are more effective when delivered in the community than in residential settings (i.e. prisons and secure children's homes).

The following intervention programmes are available for youth offenders in the UK: Reasoning and Rehabilitation (R&R; Ross, Fabiano, & Ewles, 1988); Juvenile Enhanced Thinking Skills (JETS; Clarke, 2000); Aggression Replacement Therapy (ART; Goldstein & Glick, 1987; Goldstein & Gibbs, 1998); EQUIP (Gibbs, Potter, & Goldstein, 1995); and Multisystemic Therapy (MST; Henggeler, Melton, Brondiono, Scherer & Hanley, 1997). As accredited offender behaviour programmes are currently in practice for youth offenders, it may

be questioned why there is a need to continue research in this field. However, the existing offender behaviour programmes have been critiqued for their limited contributions to rehabilitation and thus these limitations require addressing. More specifically, evaluations of the aforementioned studies have shown limited evidence for R & R improving youths' pro-social attitudes and cognitive skills (Pullen, 1996) and a lack of change in some treatment areas (anger control and moral development) of ART (Goldstein & Glick, 1994). Youth offenders who had completed EQUIP showed no difference in reconviction rates to youth offenders who did not complete EQUIP (Wilson, 2002) and MST is critiqued for its' difficulties in implementation (Littell, 2005).

However, there are promising elements to existing offender behaviour programmes, suggesting they are successful to an extent in achieving their aims of preventing reoffending. For example, perspective taking and problem solving skills were improved for youths undertaking the R & R programme (Garrido & Sanchis, 1991) and youths who completed JETS had significantly better malevolent aggression skills (endorsement of enjoyment of revenge and difficulty in controlling aggressive, antisocial behaviour; Clarbour & Roger, 2004) and locus of control skills (the extent to which an individual perceives a causal link between his or her own behaviour and the subsequent reinforcement; Nowicki & Strickland, 1973) than those who did not complete JETS (McCathie, 2015). Youths who completed JETS were 20% less likely to be reconvicted in 12 months than those who did not complete JETS (McCathie, 2015). Further research into the predictors of offending allows the effectiveness of offender behaviour programmes to be implemented by addressing existing limitations, expanding on the positive components and introducing new constructs where applicable. In addition, societal changes indicate a continuous change in the predictors of reoffending, indicating a requirement for continuous research within this field.

The youth offender behaviour programmes' content tends to be based on male focussed research and although some programmes are delivered to females, it is not known whether this is an effective approach or not as evaluations of the programmes tend to also be male focussed (McCathie, 2015). There are limited offender behaviour programmes developed purely for female youth offenders. The Youth Justice Board (2009) recommended that further research is required for gender-specific programmes due to findings showing that female youth offenders were more at risk of offending than males when in pro-criminal peer groups.

Intervention programmes and risk assessments for youth offenders, e.g. Asset, are based upon research surrounding the predictors of criminal behaviour. Extensive research has been dedicated to explaining criminal behaviour in both adults and youths. There is supporting research that having poor parental supervision, associating with other offenders, possessing criminal attitudes, peer rejection and low self-esteem can predict criminal behaviour (Mills, Anderson, & Kroner, 2004; Bagwell, 2004; Boduszek, Adamson, Shevlin, Mallett, & Hyland, 2012a; Downs & Rose, 1991; Juvonen, 1991). No direct relationship has been identified between parental attachment and criminal behaviour. Personality characteristics, particularly those related to psychopathy, have been widely researched as predictors of offending behaviour (Declercq, Willemsen, Audenaert, & Verhaeghe, 2012; Häkkänen & Hare, 2009; Laurell & Dåderman, 2007). However, the interplay of the aspects of personality on the effect of offending remains unclear (Piquero & Sealock, 2010). Thus, Boduszek and Hyland (2011) introduced a theory of criminal social identity (CSI) which was later developed to provide the Integrated Psycho-Social Model of CSI (IPM-CSI; Boduszek, Dhingra and Debowska, 2016a). The IPM-CSI explains the underlying psychological and social factors involved in the development of criminal social identity (see Figure 1.1). The model is based upon previously empirically tested theories of the origins of CSI (Boduszek et al., 2016a). It is important to acknowledge the underpinnings of CSI as research suggests there is a positive correlation

between criminal social identity and offending behaviour (Boduszek & Debowska, 2017; Shagufta, Boduszek, Dhingra, & Palmer, 2015a).

To date, limited research has tested associations between the aforementioned predictors of criminal behaviour (parental supervision, criminal associations, criminal attitudes, peer rejection and self-esteem) and CSI (Boduszek et al., 2012a; Boduszek, Adamson, Shevlin & Hyland, 2012b; Boduszek, Adamson, Shevlin, Hyland, & Bourke, 2013a; Boduszek & Debowska, 2017). The majority of existing research focussing on criminal social identity is based on imprisoned adult samples (Boduszek et al., 2012a; 2012b; Boduszek, O'Shea, Dhingra & Hyland, 2014a; Boduszek & Debowska, 2017; Sherretts, Boduszek & Debowska, 2016; Sherretts, Boduszek, Debowska & Willmott, 2017; Walters, 2003) and studies that incorporated juvenile samples tended to be based on those in prison (Boduszek, Dhingra & Debowska, 2016b; Shagufta et al., 2015a; Shagufta, Boduszek, Dhingra, & Palmer, 2015b). Juveniles who receive a prison sentence tend to have committed more serious offences than youths who receive community sentences. The range of types of offences also tends to be more limited within imprisoned juvenile populations (Ministry of Justice, 2018). Thus, it is pertinent to the research field to explore delinquent social identity in non-imprisoned juveniles in order to explore the development of delinquent social identity across a range of types of offenders. Furthermore, as outlined above, the majority of juvenile offenders are based in the community and therefore research should focus on community juveniles who better represent the overall youth offending population. Although the IPM-CSI (Boduszek et al., 2016a) offers a comprehensive explanation of the development of CSI, research has not explored all of its elements in one single study.

Consequently, the main focus of this thesis was to test the IPM-CSI with community youth offenders. An additional objective was to validate an adapted version of the Measure of Criminal Social Identity (MCSI) for youths – the Measure of Delinquent Social Identity

(MDSI). It was fundamental to test the reliability and validity of the MDSI due to it being an essential construct in this research. The specific research aims of the thesis are outlined below:

1. Given that the MCSI was devised for adults and has not been implemented with youth offenders, the need to amend and validate the MCSI for youths was paramount to this research. In order to do this, the MCSI was amended and tested with youth offenders resulting in the development of the MDSI. Thus, the first objective of this thesis was to develop and validate the MDSI, utilising data from community youth offenders within the UK (Chapter Four).
2. Individual research projects have investigated the tenets of the IPM-CSI in adult populations. However, the model's elements are yet to be tested in a single study, particularly with a sample of juveniles where research is limited and youths are more responsive to intervention. The second objective was to test the following associations: parental factors (parental rejection, parental attachment, parental supervision, presence of a parent/no parent) with criminal associations in a sample of community based youth offenders; parental factors (parental rejection, parental attachment, parental supervision, presence of a parent/no parent) with self-esteem; criminal associations with criminal attitudes; criminal associations with each DSI facet (cognitive centrality, in-group affect and in-group ties), self-esteem with each DSI facet (cognitive centrality, in-group affect and in-group ties), and each psychopathy facet (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) with each DSI facet (cognitive centrality, in-group affect and in-group ties) (Chapter Five).
3. Previous research has supported that specific psychopathic traits moderate the relationship between criminal associations and criminal social identity (Boduszek et al., 2016b; Sherretts et al., 2016). However, both studies utilise a critiqued measure of

psychopathy. Thus, the third objective was to explore the moderating effects of each of the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation, and egocentricity) on the relationship between associations with other offenders and delinquent social identity among community youth offenders (Chapter Six).

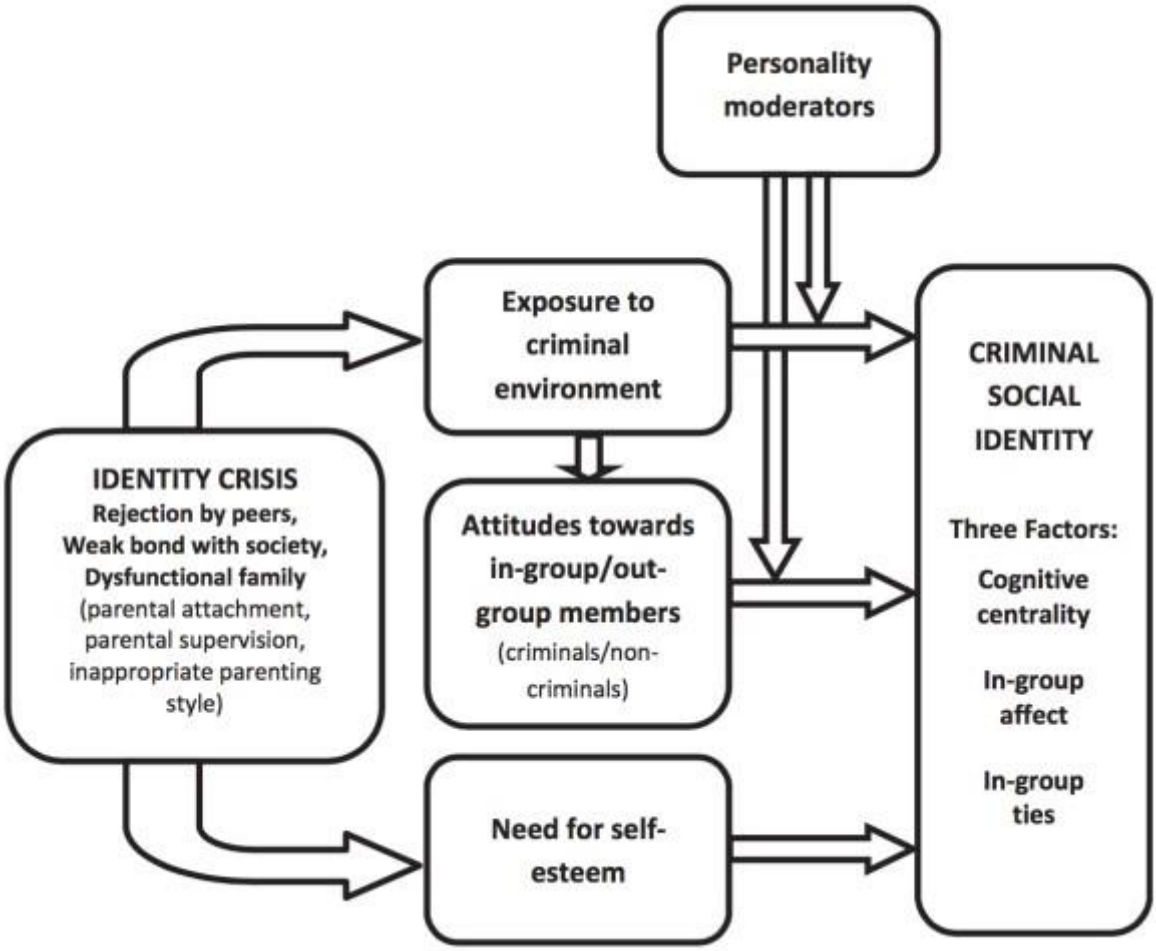

Figure 1.1 The Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI; permission to include this model has been obtained)

CHAPTER TWO:

Rapid Evidence Assessment

ABSTRACT

Purpose – The Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI) explains the underlying reasons, i.e. risk factors, for the development of criminal social identity (CSI). Empirical research surrounding these risk factors is inconsistent in the measures and procedures used and the risk factors were mostly considered in isolation from one another. The model has not been tested as a whole nor has a single paper brought together the individual supporting studies associated with tenets of the IPM-CSI. The main purpose of the present chapter was to address the latter void in the literature.

Design/methodology/approach – A rapid evidence assessment was conducted using PubMed, PsychInfo, ERIC, Google Scholar, and the journal Child Development and Adolescent Studies. Eleven studies exploring the correlates of CSI were identified.

Results – A review of the studies revealed a lack of empirical support for some risk factors, inconsistency in the measures adopted and limitations to the design approach. Further, some populations, i.e. females and juveniles were underrepresented.

Conclusions/limitations/implications – Although the use of a rapid evidence assessment is not as systematic as other more thorough methods the present chapter provides a succinct overview of the existing studies for practical use, e.g. for use by practitioners. The findings indicate that there is potential for further expansion of the IPM-CSI to consider the consequences of CSI. Based on the present chapter's results, a set of recommendations are provided for future research to overcome the current methodological and theoretical limitations.

2.1 INTRODUCTION

Identity has been studied for many years in the field of psychology. However there have been variations in the conceptual meaning of identity. The concept of identity, which is fundamental to the present thesis taking a psychosocial stance, comprises of meanings that an individual assigns to the roles they play in different social contexts (Stryker & Burke, 2000).

Early theories of identity focus on the psychosocial development of individuals and how social experiences impact upon this (Erikson, 1963). Expanding on this, Turner (1982) proposed two types of identity: personal and social. Personal identity refers to the unique features of individuals that separates them from other people and is largely resistant to change. Social identity, described as dynamic, is concerned with social interactions with others, developing similarities with others' and acknowledging self-perception as a member of certain social groups (Vryan, Adler, & Adler, 2003).

2.1.1 Social Identity

Pioneering theories, e.g. Social Identity Theory of intergroup behaviour (Tajfel & Turner, 1979), indicate that people have a desire to understand their self concept and have a sense of belonging, developed through socialising and identifying themselves as part of a group (Baumeister & Leary, 1995; Tajfel, 1978). Being part of a social group leads to individuals adapting, or completely changing, their views, attitudes and behaviours to fit with the group they now identify with, based on an awareness of their group membership and its value and emotional significance (Hogg, 2001; Tajfel, 1978). Through this transition from personal identity to social identity, individuals lose their sense of personal identity (uniqueness) and adopt a social identity, a process known as depersonalization (Hogg & Smith, 2007). Hence, individuals no longer differentiate between themselves and others as individuals but

differentiate between themselves as a group and other formed groups within society, based upon the collective identity of the group.

Exploring the social cognitive processes associated with the shift from personal to social identity, Turner (1982) expanded on the SIT, developing the Self Categorisation Theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner, Oakes, Haslam, & McGarty, 1994). The SCT begins to explain how individuals choose who to identify themselves with, which stems from experiences in early childhood. From a young age, people are introduced to social categories, classifying themselves into groups, such as gender, ability and nationality, whereby the distinct behaviours and attitudes of each group are portrayed by the group members.

2.1.2 Criminal Social Identity

Whilst most individuals strive to achieve a pro-social identity, this is not always possible (e.g., due to the lack of pro-social peers with whom they can connect) and may result in the development of an antisocial identity (Jackson, Sullivan, Harnish & Hodge, 1996). Boduszek and Hyland (2011) suggested that a criminal social identity (CSI) is formed through group membership with a group of offenders, enduring the same process as highlighted in the social identity theory. Focus is therefore drawn to the underlying reasons for generating an identity with a criminal group, pertinent in targeting the risk factors most likely to lead to criminal group membership and thus criminal behaviour.

Empirical research surrounding these risk factors is not scarce. However, studies have focussed on different outcome variables, including criminal/antisocial behaviour or criminal identify formation, rendering comparison between studies difficult (Baumeister, Stillewell, & Heatherton, 1994; Boduszek et al., 2014a; Boduszek, Adamson, Shevlin, Hyland, & Dhingra, 2014b; Burke, 2006; Juvonen, 1991; Losel, 2003). Further, risk factors were mostly considered

in isolation from one another. Expanding on the theory of CSI (Boduszek & Hyland, 2011), Boduszek et al., (2016a) proposed the Integrated Psycho-Social Model of CSI (IPM-CSI), which is based upon previously empirically tested theories of the origins of CSI (see Figure 1). The IPM-CSI explains the underlying reasons for the development of CSI, based upon four concepts; (1) an identity crisis that results in weak bonds with society, peer rejection, and is associated with poor parental attachment and supervision; (2) exposure to a criminal/antisocial environment in the form of associations with criminal friends before, during, and/or after incarceration; (3) a need for identification with a criminal group in order to protect one's self-esteem; and (4) the moderating role of personality traits in the relationship between criminal/antisocial environment and the development of CSI.

2.1.2.1 Identity Crisis

During adolescence, children explore different social groups yet may not be able to achieve pro-social group membership; referred to as an 'identity crisis' (Erikson, 1959; Waterman, 1985). Feelings of frustration and stress are exhibited during this process (Higgins, 1987; Salovery & Rodin, 1984), in line with the Strain Theory by Agnews (1993). Disparities between social groups become more distinct as members of antisocial groups experience rejection from their pro-social peers. This can result in lowered self-esteem, with a higher likelihood of engaging in antisocial behaviour (Downs & Rose, 1991; Juvonen, 1991; Parker & Asher, 1987). Identity with an antisocial group is reinforced as individuals conform to the group behaviours and attitudes, and bonds with the group get stronger, through further rejection from pro-social peers (Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993). There are numerous studies in support of a link between peer rejection and antisocial behaviour (e.g., Bagwell, Newcomb, & Bukowski, 2004; Laird, Jordan, Dodge, Pettit, & Bates, 2001; Rubin & Hewstone, 1998).

The internal feelings experienced within an identity crisis can be intensified by external factors, such as family rejection (Hirschi, 1969; Baumeister et al., 1994; Boduszek et al., 2014b; Shaw & Scott, 1991; Simons, Whitbeck, Conger, & Conger 1991). Research supporting this suggests that neglect by parents, in forms of physical, psychological and emotional neglect, can have a negative effect on social control, resulting in a higher likelihood of engaging in antisocial behaviour (Hirschi, 1969). A lack of parental tenderness has been shown to have a negative effect on the development of empathy and guilt, which may increase the likelihood of rejection and identification with antisocial and/or criminal groups (Baumeister et al., 1994). In line with this, associations have been identified between weak parental attachment and associations with other offenders, due to a lack of parental control (Boduszek et al., 2014b). Although initial research focussed on inappropriate parenting styles/parental attachment being a predictor of criminal behaviour, more recent research has shown a stronger relationship between parental supervision and antisocial behaviour (Boduszek et al., 2014b; Ingram, Patchin, Huebner, McCluskey, & Bynum, 2007).

2.1.2.2 Exposure to criminal/antisocial environment

In line with Aker's (1979; 1985) Differential Reinforcement Theory, exposure to an antisocial/criminal environment, particularly during the process of an identity crisis, is more likely to lead to associations with offenders, influencing criminal attitudes and cognitions and leading to criminal behaviour (Andrews & Kandel, 1979; Holsinger, 1999; Mills, Kroner, & Forth, 2002; Mills et al., 2004). In support of such theory, Rhodes (1979) found that offenders entering prisons with a low degree of antisocial attitudes develop more deviant attitudes while serving their sentence, due to contact with other prisoners. Drawing on the Situational Theory of Delinquency (Sykes & Matza 1957) and the more up to date Interpersonal Social-Cognitive Theory of Self (Andersen & Chen, 2002), theorists argue that individuals drift in and out of antisocial behaviour and only behave in such a way when in the presence of the social group

(Turjeman, Mesch, & Fishman, 2008). This explains why those who engage in criminal groups do not consistently offend, for example, they may not offend when with family members. In support of this theory, Strocka (2008) identified such a shift in behaviour amongst gang members. However, other theorists argue that because such behaviours are instilled in the person's identity, the physical presence of others should not alter their behaviours (Boduszek & Hyland, 2011; Zimbardo, 1970).

2.1.2.3 Processes involved in enhancing one's self-esteem

Developing a sense of belonging is believed to increase positive evaluations of oneself (Ellemers, Kortekaas, & Ouwerkerk, 1999; Tajfel & Turner, 1979). Drawing on the Social Comparison Theory (Festinger, 1954), individuals compare themselves to their respective group members (in-group) and other social groups' members (out-group), positively valuing their group over the other group, referred to as in-group favouritism (Tajfel & Turner, 1979). This in turn increases the individual's self-esteem. For groups that are valued by society, this is a fluid process. However, if groups are viewed negatively by society, e.g. antisocial/criminal groups, individuals may choose to adopt another social group identity (Hogg & Reid, 2006; Tajfel & Turner, 1979) or adopt a 'social creativity strategy' (Tajfel, 1978). A 'social creativity strategy' refers to comparing their group to a more deprived/lower class group to perceive their group as more positive, in turn allowing for positive evaluations (Tajfel, 1978). Whilst the latter strategy can enhance the subjective status of an in-group, it cannot change the reality of disadvantage, as viewed by the wider society (Jackson et al., 1996).

2.1.2.4 The moderating role of personality traits in the relationship between criminal/antisocial environment and the development of CSI

Research suggests that there is a correlation between certain personality aspects, e.g. psychoticism (high levels portraying; impulsivity, lack of empathy, aggression, and egocentric behaviour) and neuroticism (high levels portraying; anxiousness, depression, feelings of guilt, and low self-esteem), and offending (Heaven, Newbury, & Wilson, 2004; Levine & Jackson, 2004). While some research has failed to identify a correlation between personality and the development of social identity (Reynolds, Turner, Haslam, & Ryan, 2001) other research proposes that personality effects how people perceive their group and external groups (Luhtanen & Crocker, 1992; Seta, Seta, & Goodman, 1998). Turner (1999) acknowledged that personality has some impact on peoples' readiness to join a social group.

Although some view personality as a dynamic construct, individuals seek to obtain stability, which is in line with developing a constant, established social identity (Robins, Fraley, Roberts, & Trzesniewski, 2001). However, this may prove difficult for those whose environment is restricted to particular social groups, e.g., a prison setting. Situations such as this can lead to individuals exploring and instilling a change of identity (Burke, 2006).

2.1.3 The developments in the measures of criminal social identity

Studies focussing on a specific measure of CSI are negligible and identify administration of only three varying measures of CSI, underpinned by prior measures of social identity (Walters, 2003; Boduszek, Adamson, Shevlin, & Hyland, 2012c; Boduszek & Debowska, 2017). While early measures regarded social identity as a single dimension (Brown, Condor, Mathews, Wade, & Williams, 1986), later theorists argued that the construct of social identity should be viewed as multidimensional, due to its complex nature combining emotional and cognitive aspects (Cameron, 2004). Ellemers et al. (1999) developed a three-factor solution

measure of social identity consisting of group self-esteem, obligation to group (i.e. commitment) and self-categorisation (i.e. group membership awareness). This was later reviewed on by Jackson (2002) proposing that the three aspects of identity are; self-categorisation, evaluation of group and solidarity. Such measures are critiqued for not encompassing the dimensionality and construct validity across different social groups, hence not all dimensions being adequately identified (Cameron, 2004). Therefore, Cameron (2004) established one of the more recent and widely used validated measures of social identity.

Cameron's (2004) measure utilises three subscales; cognitive centrality, in-group ties and in-group affect. Cognitive centrality refers to the psychological prominence and importance of belonging to the social group based on the individuals' thought processes, corresponding to the concept of self-categorization. In-group affect explains the degree of positive feelings the individual has towards the group and its' members, supported by research surrounding the emotional dimension of identity (Ellemers et al. 1999; Hinkle, Taylor, Fox-Cardamone, & Crook, 1989; Jackson 2002). In-group ties relates to the perceived bond, i.e. emotional connection and loyalty, the individual has with the group and its members, supported by previous studies (Ellemers et al., 1999; Hinkle et al., 1989; Jackson 2002).

As identified, not many measures have been devised purely for a criminal population. The earliest measure was developed by Cameron (1999), the Social Identity as a Criminal Scale (SIC). Over the past six years there have been some developments in the measures of CSI. Boduszek et al. (2012c) devised the measure of criminal social identity (MCSI) specifically for use with offender populations. Using the same principle as Cameron (2004), Boduszek et al. (2012c) devised an eight-item measure, incorporating the three subscales and concepts as in Cameron's (2004) measure (cognitive centrality, in-group affect and in-group ties). Cognitive centrality refers to the psychological prominence and importance of belonging to the criminal group. In-group affect explains the degree of positive feelings the individual has towards the

criminal group and its' members, supported by research surrounding the emotional dimension of identity (Ellemers et al. 1999; Hinkle et al., 1989; Jackson 2002). In-group ties relates to the perceived bond, i.e. emotional connection and loyalty, the individual has with the criminal group and its members, supported by previous studies (Ellemers et al., 1999; Hinkle et al., 1989; Jackson 2002).

Recently, the MCSI has been revised (MCSI-R; Boduszek & Debowksa, 2017) due to critique that the MCSI lacked internal consistency among some participant samples and was too simplistic for such a complex psychological construct (Sherretts et al., 2016). The content of the MCSI was extended in order to better reflect the three CSI factors (cognitive centrality, in-group affect, and in-group ties) and the number of items was increased to 18 (six for each dimension). Boduszek and Debowska (2017), using confirmatory factor analysis, tested and identified a bifactor model, with the aforementioned three grouping factors and a general CSI factor, as the best fit to the data. In addition, they reported a good composite reliability of the three MCSI-R dimensions.

2.1.4 Aims of the current chapter

As detailed above, the IPM-CSI (Boduszek et al., 2016a) offers a comprehensive explanation of the development of CSI. Although the tenets of the IPM-CSI are yet to be tested in a single study, individual research projects have investigated the model's elements. Given the novelty of the IPM-CSI the studies and their respective findings have not been collated and discussed. The purpose of the present chapter was to systemise our understanding of CSI and its correlates to date, in a process guided by the IPM-CSI. In doing so, papers were identified using a methodical process from which similarities and discrepancies across studies could be identified and findings synthesised. It is anticipated that the present chapter will further develop our understanding of the process of identity formation, assist in developing interventions/

rehabilitation programmes and highlight directions for future research. The research question posed by the present paper was: ‘What empirical evidence exists in relation to the correlates of CSI?’.

Papers for the present chapter were identified through the process of rapid evidence assessment. Although rapid evidence assessments are vulnerable to publication bias and may exclude dated studies, they are seen as advantageous because they still utilise rigorous methods yet can produce results in significantly less time than more thorough methods, such as systematic reviews (Varker et al., 2015).

2.2 METHOD

2.2.1 Search Strategy

A comprehensive literature search was undertaken in March 2017 utilising four electronic databases: PubMed, PsychInfo, ERIC, and Google Scholar. An additional search for articles published in the journal *Child Development and Adolescent Studies* was also performed to encompass studies relating to juveniles, which may not have been incorporated in other databases. Varying combinations of the following keywords were used to identify relevant articles: social, psychological AND identity AND child, youth, adult AND criminal, offender, offending.

The initial search identified 281 papers (ERIC = 57, Google Scholar = 107, PubMed = 74, PsychInfo = 43). All articles were added into Zotero reference management software whereby duplicates were eliminated (N = 102). Preselection from study titles, abstracts, and keywords produced 34 papers.

2.2.2 Selection Process

The following criteria were adhered to in the paper selection process:

1. The study was an empirical piece of research examining the correlates of CSI (including its sources and outcomes) in juvenile (< 18 years old) and/or adult (18 years or older) offenders.

2. The study used a validated measure of CSI.

3. The study assumed a quantitative approach adopting experimental, longitudinal or cross-sectional design.

4. The total number of participants was 50 or greater.

5. The study was written in English.

6. In order to guarantee high quality, only studies published in peer-reviewed journals were selected, excluding meeting abstracts, proceedings, masters and doctoral degree dissertations, technical reports, and similar documents.

7. The study was published within the last 15 years (2002 – 2017).

Final selection of relevant publications was conducted by the author using the inclusion/exclusion criteria listed above. Additionally, in order to exclude studies that could have been based upon the same sample of participants, studies identified after inclusion/exclusion criteria had been applied, were scrutinised for sample specifications. When the same sample was used across studies and the explored CSI correlates were repeated, only the earliest published study was retained. Using this procedure, 11 relevant empirical studies were identified (see Figure 2). The articles were published between 2003 and 2017, the majority within the last five years (n = 10). See Figure 2.1.

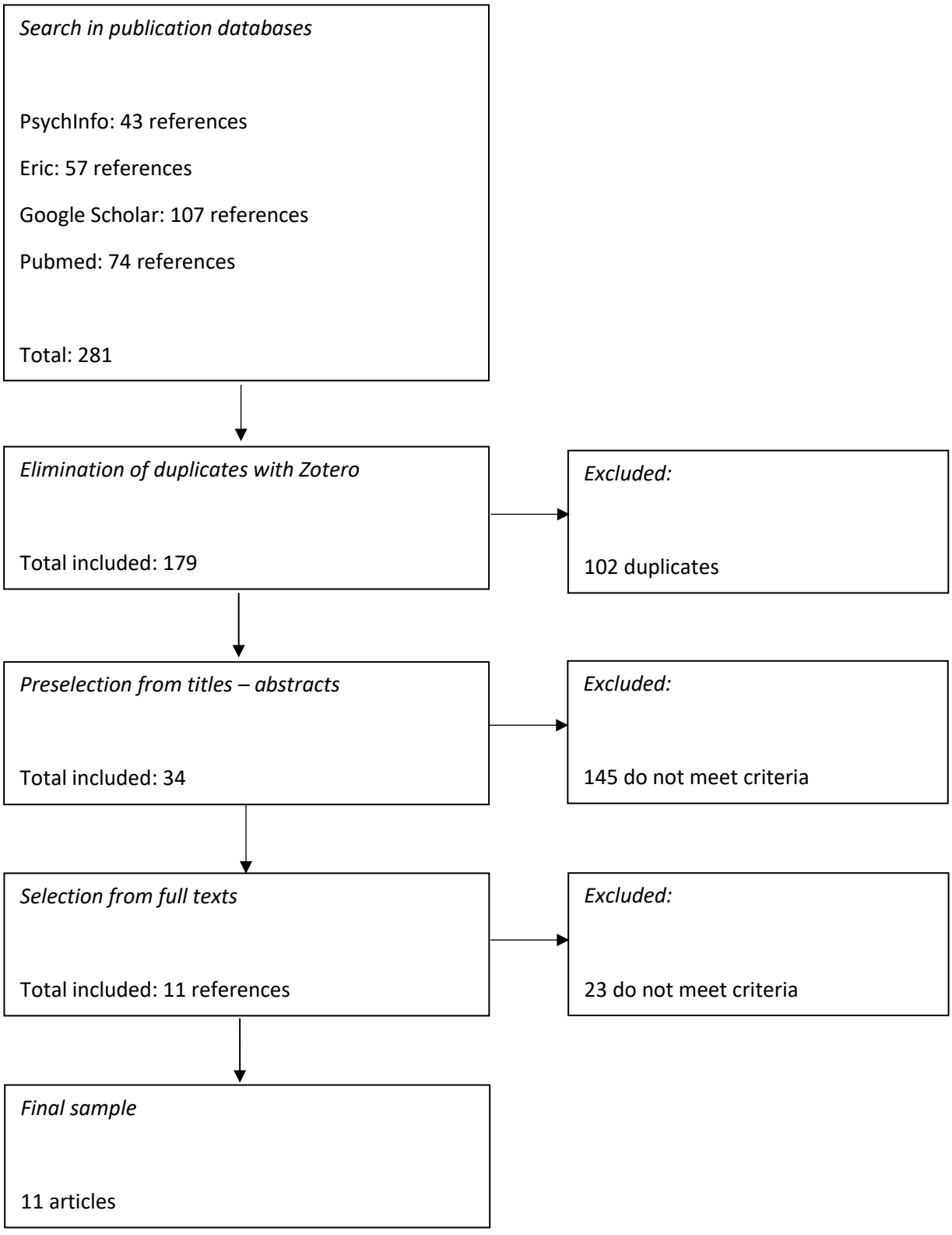

Figure 2.1. Process of selection and sample of articles analysed

2.2.3 Data extraction and analysis

Relevant information was extracted into a summary table. The following data from the studies were retrieved: author(s) and year of publication, study population and method of data collection, correlates of CSI measured, measure of CSI, type of analysis, and findings (see Table 2.1).

Of the 11 selected papers, many explored more than one correlate of CSI. The papers are discussed in terms of the identified correlates, relating to the groups of factors of IPM-CSI (identity crisis, exposure to criminal environment, self-esteem and personality) where applicable. Those correlates not considered in the IPM-CSI are discussed under separate sections (offending behaviour and suicidal ideation). Finally, studies analysing CSI as a moderator are presented.

Table 2.1

Methodological Characteristics and Summary Results of the Studies Included in the Rapid Evidence Assessment (N = 11)

Author(s) and year of publication	Study population and method of data collection	Correlates measured	Measure of CSI	Type of analysis	Findings
*Boduszek et al. (2012a)	312 detained adult male offenders in Poland (*M* age = 33.85 years) – self-report	Criminal Associations (MCAA Part A; Mills & Kroner, 1999), Parental Supervision (Ingram et al., 2007), Self-esteem (Rosenburg Self-esteem Scale; Rosenberg, 1989)	Measure of Criminal Social Identity (MCSI; Boduszek et al., 2012c)	Structural equation modelling (SEM)	Direct positive, moderate-to-strong influence of associations with criminal friends on cognitive centrality (β=0.32, *p*<.001), in-group affect (β=0.48, *p*<.001), and in-group ties (β=0.77, *p*<.001) Positive influence of negative self-esteem on cognitive centrality (β=0.21, *p*<.001) Criminal friends moderated the relationship between parental supervision and cognitive centrality (β=0−.15, *p*<.01), supervision and in-group affect (β=0−.22, *p*<.001), and supervision and in-group-ties (β=0−.35, *p*<.001)

Author(s) and year of publication	Study population and method of data collection	Correlates measured	Measure of CSI	Type of analysis	Findings
*Boduszek et al. (2012b)	Same as Boduszek et al. (2012a)	Criminal Attitudes (MCAA), Personality (The Eysenck Personality Questionnaire Revised-Abbreviated; Francis et al., 1992)	MCSI	Multiple linear regression	A significant positive relationship was identified between criminal thinking and in-group ties (r = 0.43, *p*<.001), in-group affect (r = 0.40, *p*<.001) and cognitive centrality (r = 0.23, *p*<.001) A significant positive relationship was identified between neuroticism and in-group ties (r = 0.31, *p*<.001), in-group affect (r = 0.25, *p*<.001) and cognitive centrality (r = 0.24, *p*<.001) A significant positive relationship was identified between psychoticism and in-group ties (r = 0.24, *p*<.001) and in-group affect (r = 0.24, *p*<.001)
				Sequential moderated multiple regression analysis	Extraversion moderates the relationship between criminal thinking and in-group ties (β = 0.29, *p*<.001) and in-group affect (β = 0.29, *p*<.001)

Author(s) and year of publication	Study population and method of data collection	Correlates measured	Measure of CSI	Type of analysis	Findings
*Boduszek et al. (2013a)	Same as Boduszek et al. (2012a)	Criminal Attitudes and Associations (MCAA)	MCSI	SEM	positive direct influence of in-group affect (β = 0 .34, *p* < .001) and in-group ties (β = 0.33, *p* < .001) on criminal thinking style indirect effect was observed between criminal friends and criminal thinking style via in-group affect (β = 0.19, *p* < .001), and via in-group-ties (β = 0.26, *p* < .001)
*Boduszek et al. (2014a)	Same as Boduszek et al. (2012a)	Number of arrests Recidivism (times in prison) Type of Crime (violent/non violent)	MCSI	LCA / Multinomial logistic regression model	Number of arrests associated positively with class 1 (β = 0.16, *p* < .001) and class 4 (β = 0.12, *p* < .05) Recidivism associated negatively with class 1 (β = -0.67, *p* < .05) and class 4 (β = -0.22, *p* < .01) Violent offending associated positively with class 4 (β = -0.74, *p* < .05)
*Boduszek et al. (2016b)	126 detained juvenile male offenders in Pakistan (*M* = 16.28 years) – self-report	Criminal Associations (MCAA Part A), Psychopathy (Levenson Self-report Psychopathy Scale; Levenson, et al., 1995)	MCSI	Correlation analysis Hierarchical regression analysis	positive significant correlation between general CSI and criminal friends (r = 0.35, *p*<0.001) The primary psychopathy dimension was a significant moderator of the relationship between period of confinement and CSI

Author(s) and year of publication	Study population and method of data collection	Correlates measured	Measure of CSI	Type of analysis	Findings
*Boduszek and Debowska (2017)	2192 detained adult male offenders in Poland (*M* = 34.78 years) – self-report	Prizonization (Organizational Structure and Prisonization Scale; Thomas & Zingra, 1974) , Self-esteem (The Self-Esteem Measure for Prisoners (Debowska et al., 2016) Recidivism (number of incarcerations) Type of crime (Violent/Non violent)	MCSI-R (Boduezek & Debowska, 2017)	Regression analysis	A significant negative relationship between self-esteem and cognitive centrality (β = -0.23, *p* < .001) and a positive relationship between self-esteem and in-group ties (β = 0.17, *p* < .001) A positive relationship between number of incarcerations (recidivism) and in-group ties (β = 0.13, *p* < .01) A positive relationship between prisonization and cognitive centrality (β = 0.13, *p* < .01) and in-group ties (β = 0.27, *p* < .001) A positive relationship between violent offending and cognitive centrality (β = 1.21, *p* < .001) and in-group ties (β = 1.06, *p* < .001)
*Shagufta et al. (2015a)	415 detained juvenile male offenders in Pakistan (*M* = 16.53 years) – self-report	Delinquent Behaviour	MCSI	LCA / Multinomial logistic regression model	An association between low levels of in-group affect (OR = 0.57, *p* < .01) and high levels of in-group ties (OR = 1.44, *p* < .01) with class 2.
*Shagufta et al. (2015b)	Same as Shagufta et al. (2015a)	Suicidal Ideation (BDI-II, Beck et al., 1996)	MCSI	SEM	A significant negative relationship between suicidal thoughts and in-group ties (β = -0.51, *p* < .001)

Author(s) and year of publication	Study population and method of data collection	Correlates measured	Measure of CSI	Type of analysis	Findings
*Sherretts et al. (2016)	458 detained mixed-gender offenders in Pennsylvania, U.S (*M* = 39.53 years) – self-report	Criminal Associations (MCAA Part A), Psychopathy (Self-report Psychopathy Scale – Short Form, SRP-SF; Paulhus et al., 2016) Time spent in prison	MCSI	Hierarchical moderated regression analysis	ASB aspect of psychopathy associated positively with cognitive centrality (β = 0.16, *p* < .05), in-group affect (β = 0.17, *p* < .01) and in-group ties (β = 0.14, *p* < .05) IPM aspects of psychopathy associated positively with in-group ties (β = 0.19, *p* < .01) Erratic lifestyle associated positively with in-group ties (β = 0.20, *p* < .001) IPM moderates the relationship between time in prison and in-group ties (β = 0.16, *p* < .05) Callous affect moderates the relationship between CFI and in-group ties (β = -0.14, *p* < .05)
*Sherretts et al. (2017)	Same as Sherretts et al. (2016)	Psychopathy (SRP-SF)	MCSI	Analysis of Variance (ANOVA)	Recidivists scored significantly (p < .007) higher on cognitive centrality (M = 8.21, SD = 2.41) than murderers scored on cognitive centrality (M = 7.26, SD = 3.14) Recidivists scored significantly (p < .007) higher on and in-group ties (M = 7.72, SD = 2.61) than murderers scored on in-group ties (M = 6.87, SD = 2.68)

Author(s) and year of publication	Study population and method of data collection	Correlates measured	Measure of CSI	Type of analysis	Findings
+Walters (2003)	148 detained male offenders in America (*M* = not reported) – self-report	Psychological Inventory of Criminal Thinking Styles (Walters, 1995)	Social Identity for Criminals (adapted version of Cameron, 2004)	ANOVA Analysis of Covariance (ANCOVA) Paired samples t-test	Cognitive centrality scores were significantly higher for novice prisoners from time 1 to time 2; 6months later (t = 2.40, $p < 0.5$) In-group affect scores were significantly higher for experienced prisoners from time 1 to time 2; 6months later (t = 3.22, $p < 0.05$)

+ Studies which employed longitudinal design

* Studies which employed cross-sectional design

2.3 RESULTS

2.3.1 Identity Crisis

Only one study explored parental supervision as a correlate of CSI (Boduszek et al., 2012a) identifying an indirect relationship. Boduszek et al. (2012a) administered self-report measures, MCSI (Boduszek et al., 2012c) and Parental Supervision (Ingram et al., 2007) to a sample of adult male prisoners in Nowogard maximum security prison, Poland (N = 312) aged between 20 and 66 years (M = 33.85, SD = 9.38). The parental supervision measure included questions regarding parental knowledge about a range of aspects of offenders' lives when they were at the school age, e.g. knowledge of close friends, parents and school teacher; what they were doing with friends; who they were with when they were not at home; and what they were doing at school. Structural equation modelling (SEM) revealed that associations with criminals moderated a negative relationship between parental supervision with cognitive centrality, in-group affect and in-group-ties. This suggests that a lack of parental supervision is only associated with CSI when the individual associates with criminal friends.

2.3.2 Exposure to criminal environment

The present section incorporated studies that explored criminal associations, prisonization/time spent in prison or criminal attitudes. The relationship between associations with criminal friends and CSI has been detailed within three papers; one of these studying juveniles (Boduszek et al., 2016b) while the others studied adults (Boduszek et al., 2012a; Sherretts et al., 2016). Four papers explored the predictor of period of incarceration, or similar (Boduszek & Debowska, 2017; Boduszek et al., 2016b; Sherretts et al., 2016; Walters, 2003), but only two of these papers highlighted a direct relationship (Boduszek & Debowska, 2017; Walters, 2003). Two papers identified a direct effect between criminal attitudes and CSI

(Boduszek et al., 2012b; Boduszek et al., 2013a) while one paper identified personality moderated the relationship between criminal attitudes and CSI (Boduszek et al., 2012b).

The earliest researchers to explore the relationship between criminal associations and CSI were Boduszek et al. (2012a), who administered self-report measure, Measure of Criminal Attitudes and Associates (MCAA part A; Mills & Kroner, 1999) and MCSI (Boduszek et al., 2012c). Results from structural equation modelling (SEM) identified a direct positive, moderate-to-strong influence of associations with criminal friends on cognitive centrality, in-group affect and in-group ties, with the strength of the relationship from weakest to strongest in this respective order.

These findings were later supported by Boduszek et al. (2016b), who administered the same self-report measures (MCAA part A and MCSI) as Boduszek et al. (2012a), yet to a sample of male juveniles in Pakistan prisons (N = 126) ranging in age from 12-21 years (M = 16.28, SD = 1.29). The duration of imprisonment reported by juvenile offenders ranged from 1 to 36 months (M = 7.30, SD = 6.64). Measures were administered to groups of up to 40 at a time by the researcher, an assistant researcher or trained prison superintendent. Using correlational analysis, Boduszek et al. (2016b) reported a positive significant correlation between general CSI and criminal friends. Findings therefore suggest that spending time with other offenders directly results in a strong sense of general CSI and the separate dimensions of CSI. These findings of Boduszek et al. (2012a) and Boduszek et al. (2016b) are consistent; despite cultural differences and ranges of age in the samples utilised.

In contrast to the aforementioned findings, and despite all studies using the same measures of CSI and criminal associations, Sherretts et al. (2016) did not identify a direct relationship between criminal associations and CSI. Their study consisted of an opportunistically selected sample of 478 incarcerated mixed gender adults, aged between 19

and 76 years (M = 39.53, SD = 11.79), incarcerated in three American prisons (one women's maximum security prison, one men's medium security prison, and one men's maximum security prison). Most participants were repeat offenders (n = 266), followed by first time offenders (n = 118), and lifers and those on death row (n = 94). Although not supported by further research, the disparity in findings may be due to Sherretts et al.'s (2016) mixed gender sample and other studies utilising a male only sample (Boduszek et al., 2012a; Boduszek et al., 2016b), inferring that there may be gender differences in the relationship between criminal associations and CSI. Considering an indirect effect, Sherretts et al. (2016) also measured psychopathy, using the Psychopathy Scale-Short Form (SRP-SF; Paulhus, Neumann & Hare, 2016). Findings, from hierarchical moderated regression analysis, identified that the callous affect facet (lack of remorse, lack of empathy, shallow; Hare & Newman, 2008) of psychopathy moderated the relationship between criminal associations and in-group ties, when callous affect scores were high. Therefore, this suggests that forming strong associations with offenders results in exhibiting loyalty towards them, yet only in those who lack empathy and are emotionally shallow.

Research studying the relationship between time spent in prison and CSI may produce similar findings to the aforementioned research, bearing in mind that the more time spent in prison is likely to result in more time sent with offenders. Walters (2003), in an early study into social identity of prisoners, aimed to explore the criminal thinking and identity of novice and experienced prisoners, using a sample of 148 male American prisoners (93 experienced; serving at least 5 years in total over at least one prior prison sentence and 55 novices; first time in prison). CSI was measured by adapting the 12 items on Cameron's (1999) Social Identity Scale, so it was suitable for offenders. The measures were conducted on two occasions, the second being six months after the first. Findings, from repeated measures analyses of variance (ANOVA) and covariance (ANCOVA), showed cognitive centrality increased for first time

offenders between a six-month period, whereas only in-group affect increased for experienced prisoners between a six-month period. Thus, novice prisoners tend to increase their identification with other offenders, whereas experienced prisoners tend to increase the amount of positive feelings towards other prisoners.

In some contrast, Boduszek and Debowska's (2017) study consisted of a systematically selected sample (N = 2192) of incarcerated male adults in Polish prisons (Boduszek & Debowska, 2017). The sample consisted of adults aged between 18 and 77 years (M = 34.78, SD = 9.89). Five hundred and eighty (n = 580) participants were from maximum, 477 from medium and 374 from low security prisons. Four hundred and ninety-nine (n = 499) participants were incarcerated for the first time, 382 for the second time and 550 were in prison three times or more (range from 1 to 17 times, M = 2.62, SD = 1.98). Total time spent in prisons for the whole sample ranged from 1 to 477 months (M = 65.52, SD = 62.11) and the current prison sentence from 1 to 292 months (M = 24.59, SD = 27.09). Boduszek and Debowska (2017) administered a revised measure of CSI (MCSI-R; Boduszek & Debowska, 2017). To measure predictors of CSI, the Organizational Structure and Prisonization Scale (OSPS; Thomas & Zingraff, 1974) was administered. Prisonization refers to 'the adoption of the folkways, mores, customs, and general culture of the inmate subculture' (Clemmer, 1940, p. 270). A Lie scale (Francis, Brown, & Philipchalk, 1992) was administered to control for social desirability bias. Through regression analysis, findings identified a positive relationship between prisonization and cognitive centrality and in-group ties, suggesting that both criminal cognitions and loyalty towards other offenders increases through adapting to prison lifestyle.

Boduszek et al. (2016b) and Sherretts et al. (2016) measured period of confinement along with CSI, as detailed above. No direct relationship was found between period of incarceration and total CSI scores and separately the 3 facets of CSI, by either Boduszek et al. (2016b) or Sherretts et al. (2016). The reason for Boduszek and Debowska's (2017) positive

findings may have been due to using a developed measure of CSI. Nevertheless, indirect effects were identified by both authors (Boduszek et al., 2016b; Sherretts et al., 2016). Boduszek et al. (2016b) measured psychopathy, using Levenson Self-report Psychoapthy scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995). In Boduszek et al.'s (2016b) study, findings from hierarchical regression analysis identified that the primary psychopathy dimension (interpersonal and affective traits) was a significant moderator of the relationship between period of confinement and CSI, when psychopathy levels were high. Thus, offenders who spend more time in prison are more likely to identify with offenders when they possess psychopathic personality traits. Boduszek et al. (2016b) failed to present results for the relationships between period of confinement and psychopathy for the separate dimensions (cognitive centrality, in-group affect and in-group ties). Expanding on this, Sherretts et al. (2016) identified that high interpersonal manipulation scores, forming part of primary psychopathy, affected the relationship between period of incarceration and in-group ties, indicating that time spent in prison was likely to increase the emotional connection to other offenders, but only those with strong manipulative tendencies.

Boduszek et al. (2012b), using the same sample as Boduszek et al (2012a), used the MCSI as highlighted in previously mentioned studies. The MCAA was also utilised, however, in this study focus was on the criminal attitudes section (part b), to measure criminal thinking. Using multiple linear regression analysis, Boduszek et al. (2012b) identified that all three facets of CSI (cognitive centrality, in-group affect and in-group ties) were found to be predictors of criminal thinking, with in-group ties having the strongest relationship. This indicates that an emotional connection with other offenders reinforces crime related thoughts.

Boduszek et al. (2013a), utilising the same sample and same measures as Boduszek et al. (2012b), applied SEM to identify that criminal attitudes associated positively with only in-group affect and in-group ties, not cognitive centrality.

Concerned with an indirect effect, Boduszek et al. (2012b) also administered the Eysenck Personality Questionnaire Revised-Abbreviated (Francis et al, 1992) and, using sequential moderated multiple regression analysis, found the relationship between CSI (in-group ties and in-group affect) and criminal thinking was moderated by the extraversion dimension (high levels portraying; assertiveness, and outgoing and sensation-seeking behaviour) of Eysenck's personality factors. The positive relationship between in-group affect and criminal thinking was moderated by low levels of extraversion, whereas the positive relationship between in-group ties and criminal thinking was moderated by high levels of extraversion. This implies that offenders with positive feelings towards other offenders are likely to have criminal attitudes if they are low on the aspect of extroversion, whereas those with an emotional connection with other offenders are likely to have criminal-like thoughts/attitudes if they are extroverts.

2.3.3 Self-Esteem

There are similarities in findings between cognitive centrality and self-esteem, with both Boduszek et al. (2012a) and Boduszek and Debowska (2017) finding a negative relationship between positive self-esteem and cognitive centrality, despite Boduszek and Debowska (2017) using a revised measure of CSI. Thus, findings imply that the formation of criminal cognitions is associated with negative self-evaluations. Both studies used different measures of self-esteem, with Boduszek and Debowska (2017) using the Self-Esteem Measure for Prisoners (SEM-P; Debowska, Boduszek, & Sherretts, 2016) and Boduszek et al. (2012a) using the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1989). Although both measures are self-report and utilise a Likert scale, the SEM-P encompasses questions based on prison specific self-esteem, whereas the RSES only focuses on general self-esteem. Both studies utilise a male sample from Polish prisons. However, Boduszek and Debowska (2017) use a much larger sample. Boduszek and Debowska (2017) in their findings also found a positive

relationship between in-group ties and positive self-esteem. Hence, whilst the psychological importance of criminal group membership is associated with negative self-esteem, loyalties and emotional connections to the group is associated with positive self-esteem.

2.3.4 Personality

One paper is concerned with the relationship between personality and CSI. Boduszek et al. (2012b), using measures identified previously, conducted multiple regression analysis. The results of which showed a significant positive relationship between neuroticism and all three aspects of CSI and a significant positive relationship between psychoticism and ingroup ties and in-group affect. Thus, individuals who are stressed/anxious/irrational/depressed are more likely to form a sense of CSI. Individuals who are impulsive/un-empathic/ tough-minded are likely to develop strong emotional connections and positive feelings with other offenders.

Sherretts et al. (2016), using hierarchical moderated regression analysis, identified that the antisocial behaviour facet of psychopathy correlates with all three aspects of CSI and both erratic lifestyle and interpersonal manipulation aspects of psychopathy positively associate with in-group ties. Thus, criminals who are manipulative and/or have erratic lifestyles tend to have stronger emotional connections with other offenders. Considering the manipulative tendencies it is questionable as to whether these connections are real or falsified to achieve what they want. Antisocial behaviour is linked to offenders having a strong connection and being loyal to other offenders and also viewing them as important and positive.

2.3.5 Offending Behaviour

The present section comprises of studies measuring reoffending (number of incarcerations / number of arrests), violent offending and delinquent behaviour. Three papers studied reoffending as correlates of CSI. Two papers measured violent offending (Boduszek et

al., 2014a; Boduszek & Debowska, 2017) and delinquent behaviour was studied as a correlate of CSI by Shagufta et al. (2015a).

Boduszek and Debowska's (2017) measured number of incarcerations was measured using a single question: 'How many times have you been in prison?' Using regression analysis, Boduszek and Debowska (2017) found the only significant predictor of number of incarcerations was the in-group ties factor, suggesting that some individuals re-offend because criminal behaviour has been normalised within their social circle.

In line with this, Sherretts et al. (2017), using the same sample and measure of CSI as Sherretts et al. (2016), revealed through ANOVA that recidivists (those who had been in prison more than once previously), compared with murderers, were more likely to report enhanced ratings on in-group ties, but also on cognitive centrality. This therefore suggests that re-offenders not only offend because such behaviour is normalised but also due to it being important to them to belong to that social group.

Boduszek et al. (2014a) employed latent class analysis (LCA) in their study using the same sample as Boduszek et al. (2012b). LCA is a statistical method concerned with assigning people to mutually exclusive classes based on observed categorical data (Schreiber, 2017). The measures used in Boduszek et al.'s (2014a) study were the MCSI and a demographic questionnaire assessed respondents' age, location (urban, rural), education, relationship status and number of arrests. Additionally, recidivism was assessed by asking how many times they had been in prison and violent offending based on the type of crime participants were imprisoned for. Using LCA to identify homogeneous groups of CSI the following five classes were identified; 'High CSI' (Class 1; 17%), 'High Centrality, Moderate Affect, Low Ties' (Class 2; 21.7%), 'Low Centrality, Moderate Affect, High Ties' (class 3; 13.3%) and 'Low Cognitive, High Affect, Low Ties' (class 4; 24.6%) and the baseline or reference group, 'Low

CSI' (Class 5; 23.4%). Class one was characterised by very high scores across all items of MCSI, class two was characterised by particularly high scores on cognitive aspects of MCSI, moderately on in-group affect and very low on in group ties, class three was characterised by very low scores on cognitive aspects, moderately on in group affect and high on in group ties, class four was characterised as having very low scores on cognitive aspects of MCSI and in-group ties, but very high scores on in-group affect, and lastly, class five was characterised as having very low scores across all items of MCSI. Using multinomial logistic regression model, Boduszek et al. (2014a) revealed that number of arrests and times in prison were significantly associated with Class 4 (Low Cognitive, High Affect, Low Ties). However, number of arrests was positively related, whereas times in prison was negatively associated, suggesting that those with stronger emotional attachment to other offenders are more likely to have had more arrests, yet those who spent more times in prison were less likely to have strong emotional bonds to offenders. Some rehabilitation programmes in prison (Thinking Skills Programme) are based on improving cognitive skills, such as distancing themselves (emotionally and physically) from other offenders. Thus, dependent on whether the sample took part in intervention programmes, may explain why they were les likely to have emotional bonds with offenders. This is something to consider in future research. These findings also identify the pertinence of considering number of arrests and number of times in prison as separate facets of reoffending. Boduszek et al. (2014a) also identified a positive association between violent offenders and class 4 ('Low Cognitive, High Affect, Low Ties'), noting that violent offenders were over two times more likely to be in Class 4 compared to offenders in class 5 (low on all dimensions of CSI). Class 4 was characterised by a high level of in-group affect, indicating that those with an emotional attachment to other offenders are more likely have a history of violent offending.

Boduszek and Debowska (2017) also measured violent offending based on the type of crime participants were imprisoned for, categorised as either violent (such as assault, sex

offences, domestic violence and homicide) or non-violent crimes (such as theft, burglary, drug-related offences and financial crimes). More participants were convicted of non-violent offences (n = 847) than violent offences (n = 584). Boduszek and Debowska (2017), using regression analysis, identified a relationship between in-group ties and cognitive centrality with violent offending. These findings indicate that those with an emotional attachment to other offenders are more likely have a history of violent offending but also identifying oneself as a criminal and having loyalty towards other offenders condones acting in a similar way to offenders. Both studies base violent offending on those in the sample who were convicted for violent crimes, yet use different forms of methodology. Boduszek and Debowska (2017) categorise offences as violent / non-violent yet do not make reference to considering the modus operandi of each offence therefore leaving room for error in the categorisation process. This could mean that those categorised as violent offenders may not have been violent in their offence and vice versa. Although both studies used similar samples in terms of characteristics, Boduszek and Debowska's (2017) sample was much larger, meaning their findings may be more representative of the population. There are also differences in the measures used as Boduszek and Debowska (2017) use a revised measure of MCSI whereas Boduszek et al. (2014a) do not, which may account for the difference in findings, especially since the number of in-group affect items was increased from two to six in the MCSI-R.

Shagufta et al.'s (2015a) sample comprised of male juvenile offenders incarcerated in prisons in Pakistan (N = 415). The juvenile offenders ranged in age from 11-18 years (M = 16.53, SD = 1.93). The duration of imprisonment reported by juvenile offenders ranged from 1 to 36 months (M = 6.29, SD = 5.93). The purpose of the study was to examine the number and nature of latent classes of delinquency that exist among male juvenile offenders incarcerated in prisons in Pakistan. The MCSI was administered along with a questionnaire measuring delinquent behaviour, which was assessed by asking juveniles whether they had

partaken in ten delinquent behaviours; caused a disturbance while in large group; played truant from school; told lies or cheated; broken rules; smashed, slashed, or damaged property belonging to someone else; physical fought with someone; physically attacked someone for no reason; used threats of violence to get someone to do something for you; stolen something from a store/shop or school; and set fire to a building, a car, or something else not belonging to you on purpose. Using LCA, Shagufta et al. (2015a) identified the best fitting latent class model was a three-class solution. The classes were labelled: "major delinquents" (Class 1; 29.8%), "moderate delinquents" (Class 2, 64.9%) and "minor delinquents," the baseline/normative class (Class 3, 5.4%). Class 1 was characterised by those with a wide range of items that exceeded the delinquent involvement of the other two classes. These youth had the highest likelihood of endorsement of all delinquent behaviours except for setting fires. Those in Class 2 were characterised by individuals with a high probability of endorsing truancy, property damage, and fighting (all response probabilities exceeded 0.60); and a low probability of endorsing disturbing others when in a group, physically attacking others, and stealing (response probabilities did not exceed 0.40 for any single item). Class 3 was characterised by individuals with a low probability of endorsing all items (response probabilities did not exceed 0.40 for any single item) except for breaking rules, property damage, and fighting (all response probabilities exceeded 0.50). Using multinomial logistic regression, findings showed that Class 2 membership (moderate delinquency) was related to lower levels of in-group affect and higher levels of in-group ties. In other words, a weak sense of belonging, but strong loyalty, to other juvenile offenders results in a likelihood of delinquent behaviour. Thus, it is not about being part of the group, but the emotional connection to the group, which is important.

2.3.6 Suicidal Ideation

While most studies consider the correlates of CSI as negative factors, one study considers how CSI can act as a protective factor against harmful behaviours. Shagufta et al.

(2015b) utilised the same sample as Shagufta et al. (2015a) and along with the MCSI, measured suicidal thoughts, i.e. suicidal ideation, using two items modified from The BDI-II (Beck, Steer, & Brown, 1996): “I have had thoughts of killing myself since entering prison” and “I would kill myself if I had the chance”. Using SEM, Shagufta et al. (2015b) identified a significant negative relationship between suicidal thoughts and in-group ties, indicating that having a strong emotional connection to other offenders serves as a protective factor against suicide ideation.

2.3.7 Criminal Social Identity as a moderator

Only one study considered CSI as a moderator. Using MCAA (Mills & Kroner, 1999) to measure criminal associations (part A) and criminal thinking (part B), Boduszek et al. (2013a) applied SEM revealing in-group affect and in-group ties moderated the relationship between criminal associations and criminal thinking. Therefore, associating with other offenders is likely to result in criminal-like thoughts for those who develop an emotional attachment and loyalty to other offenders.

2.4 DISCUSSION

The aim of the present chapter was to collate and explore studies concerned with the associations of variables with CSI, based within youth and adult offender populations. Particular focus was given to the variables outlined within the IPM-CSI. The model has not been tested as a whole nor has a single paper brought together the individual supporting studies associated with each variable of the model. The main purpose of the paper was to review existing empirical studies elucidating correlates of CSI incorporated in the IPM-CSI and indicate further direction for research. Specifically, the present chapter allowed all associated studies to be located, using a systematic approach, and findings to be analysed.

Although there are numerous existing studies concerned with the association between parental attachment / parental supervision and offending behaviour / antisocial behaviour (Baumeister et al., 1994; Boduszek et al., 2014b; Ingram et al., 2007; Shaw & Scott, 1991; Simons et al., 1991), no studies directly consider the effect of parental factors on CSI. This is, perhaps, because the majority of studies utilise an adult sample and therefore data would be retrospective and thus less reliable. The IPM-CSI suggests an indirect relationship between a dysfunctional family (lack of parental supervision/attachment, and inappropriate parenting style) and CSI. One study identified that the relationship between parental supervision and CSI was moderated by criminal associations (Boduszek et al., 2012a). Therefore, studies support that a dysfunctional family alone may not result in the development of CSI, but the interplay of other factors, such as exposure to criminal environment, can lead to a CSI. This support is from an adult population and therefore it should be expanded to a juvenile population, who are experiencing the identity crisis at the time of research. Further support is also required for indirect links between peer rejection / weak bonds with society and CSI.

Exposure to a criminal environment has been researched by measuring criminal associations and prisonisation/time in prison, for which direct relationships with CSI were identified. Considering criminal associations, research suggests that the association may depend on gender and therefore further research, encompassing female populations, is required to explore this further. Disparities lay in which aspects of CSI are affected by exposure to a criminal environment. This may be due to the difference in measures, methodology or samples used. Attitudes towards criminal/non-criminals were measured using criminal attitudes in all studies. Although shown to impact on all aspects of CSI, the level of impact criminal attitudes has upon the different aspects of CSI varies. The IPM-CSI suggests that this relationship is moderated by psychopathy. In support of this, one paper showed that the extraversion aspect of personality moderates the relationship between criminal attitudes and in-group affect and in-group ties (Boduszek et al, 2012b).

Findings from the papers surrounding self-esteem have shown disparities in the direction of the relationship between self-esteem and CSI, depending upon the individual facets of CSI. Further research should assist in identifying such discrepancies. Due to the research not exploring a cause/effect relationship between the factors, it is difficult to identify whether low self-esteem predicts CSI or is a consequence of it. This relationship may also vary depending upon the aspect of CSI. In line with the IPM-CSI, research lacks in exploring the relationship between identity crisis, self-esteem and CSI.

As already identified, personality facets have shown to act as moderators in support of the IPM-CSI. Although a lack of research supports a direct relationship with CSI, there is sufficient research exploring the moderating effects of psychopathy, in line with the IPM-CSI. The relationship between exposure to criminal environment, measured by time in prison and criminal associations, and CSI has been shown to be moderated by the different aspects of psychopathy, specifically IPM and callous affect. Although arguments exist to suggest that

antisocial behaviour is a consequence of psychopathy as opposed to an integral part of it (Boduszek et al., 2016b), it is difficult to identify from the papers explored due to the cross-sectional nature of the study.

Other factors have also been associated with CSI. For example, developing strong bonds with other offenders has been shown to prevent thoughts of suicide. This shows that CSI can have a positive impact as opposed to purely negative consequences. CSI has also been shown to be associated with offending behaviour and recidivism. However, studies do not depict whether this is a cause of CSI or as a result of such. The consequences of CSI are yet to be explored, as the model is limited to the reasoning behind the development of CSI. It is important to identify the positive and negative consequences of CSI to identify what interventions are required.

2.4.1 Limitations of existing studies

The majority of studies reviewed are cross-sectional in nature. It is therefore only possible to speculate about causality of factors. Although the model suggests a temporal order of the process of CSI, it is difficult to defend the model without such empirical support. The only support for factors within the model, using a longitudinal study, is for the association between exposure to a criminal environment and CSI (Walters, 2003). Walter's (2003) research shows the importance of a longitudinal study as he identifies prisoner's increasing in only specific CSI traits, dependent upon whether they have been in prison before. Use of a longitudinal study measuring all factors of the model would allow for the development of all factors to be explored within the same sample, controlling for individual differences. Nonetheless, such research has its limitations in increased research duration and costs, along with the likelihood of higher attrition rates. There are no existing quasi-experimental studies relating to CSI. For example, comparing the CSI of two groups – offending individuals placed

in a prison environment (treatment group) with offending matched controls from non-prison settings. Such a study design would be beneficial to further exploring the relationship between prisonization and CSI.

The majority of studies presented focus on adult male populations based within prisons. To corroborate findings reported to date, more research is needed with young people who may better remember aspects of their early lives. Furthermore, researching an already existing CSI does not assist in identifying when CSI developed and over what period of time. Researching juvenile offenders, ranging in age, would provide a fruitful contribution to the early developments of CSI. Research based on female offender populations is also scant, but just as important as research on male offender populations. Studies are limited to Poland, Pakistan and North American populations. It is therefore important to expand upon research in different countries to allow for a better understanding of any cultural differences in the development of CSI.

2.4.2 Recommendations for future research

In considering the above methodological limitations, as well as the restrictions of the IPM-CSI in exploring the consequences of CSI, a set of recommendations are outlined below. Such recommendations will assist in the systemisation of future research and development of knowledge surrounding the psychosocial processes of CSI and associated consequences.

1) IPM-CSI portrays a sequential order in the development of CSI and therefore studies should reflect a longitudinal design in order to support the temporal changes proposed by the IPM-CSI model. At present, supporting longitudinal research is negligible.

2) Concerned with theoretical practice, expansion of the model should be sought from longitudinal studies. Already outlined, reduced suicidal ideation may be a consequence of CSI

(Shagufta et al., 2015b), yet without such supporting research it is difficult to provide reliable theory on the consequences of CSI.

3) Existing studies under-represent the female population, with only one study using a mixed-gender sample. As research has proposed gender differences in CSI (Sherretts et al., 2016), it is pertinent to ensure research focuses on female populations as the processes involved in CSI may differ between males and females. Research on female offenders has a huge practical implication as the contribution of females within the offending population is increasing (Ministry of Justice, 2016).

4) Studies should focus on the juvenile offender population in order to improve the understanding of the early developments of CSI and reduce the reliance on retrospective data.

5) Research should focus on the separate dimensions of CSI, which although is present in most studies, some studies only report general CSI associations (Boduszek et al., 2016b). As the summary of findings presents, different relationships have been found between variables and the different aspects of CSI, highlighting the importance of measuring the three facets separately.

6) Although most studies adopt the MCSI (Boduszek et al., 2012c), a new revised measure has also been utilised (Boduszek & Debowska, 2017), along with the earlier measure (Social Identity for Criminals; adapted from Cameron, 1999). Consistency in use of measures is important when collating and comparing findings from different studies as it allows more reliable analyses to be drawn.

7) A lack of research is identified on the associations of dysfunctional parenting, peer rejection and societal bonds with CSI. The model is based on previous theoretical perspectives and research supporting associations with criminal friends / criminal behaviour, suggesting there is

no direct relationship between these factors and CSI. However, scant research explores both direct and indirect associations specifically with the facets of CSI.

8) The model of IPM-CSI should be tested as a whole, as at present, studies only focus on the separate facets of the model. This will allow the model to be tested on a single sample, reducing the impact of individual and cultural differences.

2.4.3 Limitations and implications of current chapter

The present chapter should be considered in light of the following limitations. The search was limited to paper titles, abstracts and keywords. Although most research would highlight in the title that the focus was on CSI and if not, it would be expected to be covered in the abstract, there is a chance that some research could have been overlooked. Further, research may relate to aspects of CSI without directly referring to CSI and/or its' facets. This highlights the importance of studies utilising a consistent measure. For the present chapter only research in peer-reviewed journals was considered. Whilst this is believed to eliminate research perceived as poor (Ware, 2008) the present findings are affected to some extent by publication bias or the tendency for research to only be published if it reports significant results (Perestelo-Pérez, 2013). Finally, only articles published in English were included within the review, which could have excluded some important non-English based samples.

The present chapter provided valuable contributions to the theoretical perspective of CSI by collating and synthesising research within one paper. This is of particular use to the design of intervention programmes where succinct information is paramount to the timely development of such programmes. No study thus far has brought together existing CSI studies in one paper.

CHAPTER THREE:

Methodology

3.1 Abstract

The present chapter provides a detailed description of the design of the study, the population (of the UK Youth Offending Teams [YOTs] during the time of data collection in 2016 and also the individual populations of the three YOTs utilised for this research), and the sampling procedures and sample utilised. The present section provides a comprehensive description of each of the measures used within the research (The Measure of Delinquent Social Identity (MDSI), Peer Rejection, Parental Attachment, Parental Supervision, The Measure of Criminal Attitudes and Associates, Attitudes towards in-group and out-group member, Self-Esteem Measure for Delinquents (SEM-D), Psychopathic Personality Traits Scale (PPTS) and Demographics Questionnaire). The analytical procedures used throughout the present research are outlined and detailed (confirmatory factor analysis, confirmatory bifactor analysis, composite reliability, independent samples t-test, path analysis, and moderated regression analysis). Additionally, the software programmes applied are explained (SPSS, Mplus and Mod graph). The aim of the present chapter is to provide the reader with the information on the measures and statistical procedures adopted in subsequent chapters.

3.2 DESIGN

3.2.1 Cross-sectional, structured interview design

A cross-sectional survey design was applied to the present research. The purpose of the cross-sectional design is to identify the prevalence of the outcome (dependent variable) and characteristics associated with the outcome (independent variables) within a certain population or subpopulation (Howitt & Cramer, 2017). A cross-sectional design is a descriptive study whereby data is observed at one point in time for each participant (Pandis, 2014). It therefore allows researchers to collect and compare data from different groups, e.g. different age groups or genders. The benefits of using a cross-sectional design are that data can be collected over a short period of time and is cost-effective (Levin, 2006). The limitations of using a cross-sectional design are that they do not allow for developments in individuals and temporal order of variables to be identified as each participant is observed at one point in time (Levin, 2006). This restricts such research to identifying relationships between variables as opposed to causal inferences (Duignan, 2016). However, it is valuable to identify relationships between variables to test theoretical models and direct future research.

Surveys are a systematic approach to collecting data on people's attitudes, behaviours, opinions and beliefs (Howitt & Cramer, 2017). They comprise of a fixed set of questions that are provided to participants in varying ways, e.g. Internet and face to face. A survey consisting of standardised measures allows the researcher to reliably compare the attitudes, behaviours, opinions and beliefs of different populations (Shaughnessy, Zechmeister, & Zechmeister, 2012). It is important to use surveys that are reliable and valid. Validity allows researchers to identify whether a survey measures what it is supposed to and internal reliability refers to the consistency in correlating scores on several questions relating to the same content (Howitt & Cramer, 2017). The present research incorporated the use of the following reliable and

validated surveys: Peer Rejection (Mikami, Boucher, & Humphreys, 2005), Parental Attachment (Ingram et al., 2007), Parental Supervision (Ingram et al., 2007), The Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999), Attitudes towards in-group and out-group member, Self-Esteem Measure for Delinquents (SEM-D; adapted from the SEM-C; Debowska et al., 2017), and Psychopathic Personality Traits Scale (PPTS; Boduszek, Debowska, Dhingra, & Delisi, 2016c). The development and validation of The Measure of Delinquent Social Identity (MDSI) is discussed in chapter four.

Structured interviews are a set of fixed questions that are provided to all participants by the interviewer. Such interviews are easy to replicate due the consistency in use of questions. Due to the rigidity of the structured interview, it does not allow for responses to be further explored. However, it does allow for responses to be compared quantitatively (Howitt & Cramer, 2017). In structured interviews, the interviewer(s) ought to receive standardised training on how to deliver the interview (Howitt & Cramer, 2017).

3.2.2 YOT population in UK

The term youth offender in the UK relates to a child or young person aged between 10 and 17 years of age who has committed an illegal act. Following amendments to the Crime and Disorder Act in 1998 youth offending teams (YOTs) were introduced in the UK. A YOT is a multi-agency service that deals with youth offenders who have been arrested, charged and/or convicted of a criminal offence. Youths managed by YOT vary in the sentences that they received and while some youths will have spent time in custody most of them will not have experienced a custodial setting. Youth offender managers are allocated a caseload of youth offenders. Youth offender managers are responsible for the supervision and risk management of the youth offenders on their caseload and as part of their reparation youth offenders will be directed to attend a one to one session with their youth offender manager once a week. Part of

the weekly contact may be conducted by other agencies as youth offender managers often refer youth offenders to appropriate support services to offer specialist support.

Of 74,800 youths who were arrested in the year ending March 2017, only 28,400 received a caution or conviction (Ministry of Justice, 2018). 28,352 youth offenders (males *n* = 21,264, females *n* = 7,088*)* were managed by YOTs across the UK. In 2016, at the time of data collection, there were a total of 157 YOTs in England and Wales. Each YOT managed between 75 and 500 youth offenders at a given time. The majority of the 28400 youth offenders cautioned or convicted were white (75%, *n* = 21,300) compared to Black, Asian, and Minority Ethnic (25%, *n* = 7,100). The majority of youth offenders were between the ages of 15 and 17 (76%, *n* = 21,584) and the remaining were aged between 10 and 14 (24%, *n* = 6,816). In the year ending March 2017, the majority of youth offenders were convicted or cautioned for violence against person (28%, *n* = 7,952), followed by other offences (12%, *n* = 3,408), then criminal damage (11%, *n* = 3,124), theft and handling stolen goods (11 percent, *n* = 3,124), motoring offences (10%, *n* = 2,840), drugs (8 percent, *n* = 2,272), public order (7%, *n* = 1,988), burglary (4%, *n* = 1,136), breach of statutory order (3%, *n* = 852), robbery (3%, *n* = 852), and sexual offences (3%, *n* = 852). Only 6% (*n* = 1,704) of those who received a conviction were given a custodial sentence, of which the average sentence length for those convicted of indictable offences was 16 months compared with 4.5 months for those convicted of a summary offence.

3.2.3 YOT population in Barnsley, Bradford, Doncaster, Rotherham and Wakefield YOTs

There were five YOTs that provided consent for the researcher to access in relation to the thesis: Barnsley, Bradford, Doncaster, Rotherham and Wakefield. During the data collection in 2016, there were a total of 624 youth offenders across the YOTs comprising of *n*

= 411 (65.87%) males and *n* = 213 (34.13%) females. The breakdown of the proportion of males and females, and their respective average ages, at each YOT establishment are reported in Table 3.1. The number of males was higher than the number of females at all YOT establishments. The average age for male and female youth offenders was 15 years (*Mdn = 15,* Mode = 15) at all YOT establishments apart from Bradford where the average age for females was 16 years (*Mdn* = 16, Mode = 16).

Table 3.1
Descriptive statistics for each YOT establishment

		Males						*Females*					
YOT establishment	*Total (N)*	*Number (n)*	*Number (%)*	*Mean Age (M)*	*SD*	*Median Age (Mdn)*	*Mode Age*	*Number (n)*	*Number (%)*	*Mean Age (M)*	*SD*	*Median Age (Mdn)*	*Mode Age*
Barnsley	102	69	67.65	15.08	1.09	15	15	33	32.35	15.25	1.18	15	15
Bradford	161	111	68.94	15.32	1.08	15	15	50	31.06	16.27	1.20	16	16
Doncaster	144	86	59.72	15.14	1.14	15	15	58	40.28	15.21	1.17	15	15
Rotherham	113	73	64.6	15.24	1.12	15	15	40	35.4	15.13	1.10	15	15
Wakefield	104	72	69.23	15.38	1.07	15	15	32	30.77	15.12	1.17	15	15
Total	624	411	65.87					213	34.13				

3.2.4 Sampling

An opportunistic sampling procedure was applied in the present research. Opportunistic sampling is a type of non-probability sampling where participants are selected at convenience of the researcher. All participants within that population are asked to take part in the research and the sample consists of those who are willing to take part (Howitt & Cramer, 2017). For example, in the present research 12 Youth offending teams (YOTs) within the Yorkshire area were approached, of which five teams agreed to take part in the research. The only inclusion criterion was that participants were currently serving a sentence with the YOT and were aged

between 12 and 17 years old. Although the YOT engages with young persons from the age of 10, it was deemed that the nature of the questionnaires could cause some unnecessary discomfort or distress to those under the age of 12. Youths below the age of 12 could also struggle to understand certain concepts. Thus, they were not given the opportunity to partake.

Due to the use of an opportunistic sample the present research utilised participants from one region. As such, though the sample is comparative to the YOT population in terms of age (offenders aged between 15 and 17; YOT population = 76%, sample mean = 15.28, *SD* = 1.10) and gender (YOT population; males = 75%, females = 25%; sample; males = 64.9%, females = 35.1%) it is not possible to state that the findings of the present research are generalisable to the whole population.

3.2.5 Participants

The author approached *N* = 624 youth offenders in total and *N* = 536 returned completed surveys (response rate = 85.9%; please see Table 3.1 for breakdown). There was no missing data, which is likely due to youth workers assisting youth offenders in the completion of the survey. Therefore, *N* = 536 of youth offenders were included in the current analysis, comprising of *n* = 348 (64.9%) males (age range from 12 to 17 years, *M* = 15.28, *SD* = 1.10, *Mdn* = 15, and Mode = 15) and *n* = 188 (35.1%) females (age range from 12 to 17 years, *M* = 15.23, *SD* = 1.19, *Mdn* = 15, and Mode = 15). For males, 128 (36.8%) participants were living with one parent, 90 (25.9%) living in a care home, 60 (17.2%) living with both parents, 36 (10.3%) living in foster care, 18 (5.2%) living with grandparents, 8 (2.3%) living without parents and 8 (2.3%) living with step parents. For females, 75 (39.9%) participants were living with one parent, 47 (25%) living in a care home, 26 (13.8%) living with both parents, 18 (9.6%) living in foster care, 16 (8.5%) living with grandparents, 4 (2.1%) living without parents and 2 (1.1%) living with step parents.

Table 3.2
Survey response rate by YOT establishment and gender

	Males			*Females*		
YOT establishment	*Surveys distributed*	*Surveys returned*	*Response rate*	*Surveys distributed*	*Surveys returned*	*Response rate*
Barnsley	69	60	86.96%	33	30	90.9%
Bradford	111	94	84.68%	50	42	84%
Doncaster	86	74	86.05%	58	52	89.66%
Rotherham	73	61	83.56%	40	36	90%
Wakefield	72	59	81.94%	32	28	87.5%
Total	411	348	84.67%	213	188	88.26%

3.3 MATERIALS

3.3.1 The Measure of Delinquent Social Identity (MDSI) (Appendix A; page 231)

The MDSI is adapted from the MCSI-R (Boduszek & Debowska, 2017). In line with the recommendations presented in chapter three, the MCSI-R was reviewed and adapted for suitability in administering to youths. In the development of the MDSI, discussions took place with a panel of professionals, consisting of youth workers, YOT managers, and a mental health worker based at the YOT. Based on the panel's advice, the wording of most MSCI-R items was altered to be more adaptable to the age group of the participants. Firstly, the word 'criminal' was removed from most of the MCSI-R items and replaced with 'someone who breaks the law' or 'acts antisocially'. Secondly, some items from the MCSI-R (item 9 and 17) included words or phrases that may have been difficult for youths to understand. These items were therefore amended to include words/phrases that were easier to understand. The number of items was reduced by one per each dimension, due to the likely short attention span of those under 18 years of age. Included in this, item 12 of the MCSI-R was removed as it refers to the offender been I prison which is not relevant to youth offenders because they may not have been to prison. Therefore, the MDSI consists of 15 items scored in the same direction. The Likert scale was also reduced to 4 points rather than 5. The proposed scale was initially administered to 10 youth offenders to test their ability and understanding in completion of the measure. Participating youth offenders provided feedback on item comprehension and response format. Generally, youth offenders understood the content but had difficulties with two items. As such, the problematic items were re-written to increase their clarity.

The final version of the MDSI consists of 15 items scored on a 4-point Likert scale (1 = completely disagree to 4 = completely agree). Scores range from 15 to 60, with higher scores suggesting enhanced levels of delinquent social identity. The scale consists of three subscales: cognitive centrality (five items) subscale measures the psychological salience of a delinquent's

group identity; in-group affect (five items) subscale measures a delinquent's felt attitude toward other in-group criminals; and in-group ties (five items) subscale assesses the level of personal bonding with other delinquents. Good internal reliability (see chapter four) was reported with the current sample (cognitive centrality = .86, in-group affect = .73, in-group ties = .86) (see chapter four for the development and validation of the MDSI).

3.3.2 **Peer Rejection (Mikami et al., 2005)** (Appendix A; pages 33 - 234)

Peer Rejection is a 4-item self-report/retrospective inventory with a 5-point Likert scale response format ranging from a positive answer (5) to a negative (1) with one reverse-scored question. Thus, the possible total score can range from a minimum of 4 to a maximum of 20, with higher scores reflecting more positive peer relations and lack of rejection. Participants are asked to indicate the number of peers they like versus dislike in the class they attend (Sample question: "How many students in your class did you get along with?"). In addition, they had to estimate the number of peers who respected them versus those who tend to pick on them (Sample question: "How many students in your class teased you, put you down, or picked on you?"). Internal reliability = .74.

3.3.3 **Parental Attachment (Ingram et al., 2007)** (Appendix A; page 234)

Parental Attachment is a 9-item self-report measure of the nature of the positive and negative relationship between offenders and their parents. Participants were asked how often they felt each statement was true (e.g., positive relationship "They support my goals and interests"; negative relationship "They ignore what I have to say"). Answers were indexed on a 4-point Likert type scale ranging from 1 (not at all) to 4 (very much). Thus, the possible total score can range from a minimum of 9 to a maximum of 36, with higher values indicating stronger parental attachment. Internal reliability = .97.

3.3.4 **Parental Supervision (Ingram et al., 2007)** (Appendix A; page 235)

Parental supervision is a 6-item self-report instrument including questions regarding parental knowledge about range of aspects of offenders' lives when they were at the school age. These aspects included parental knowledge of participants' close friends, friends' parents and school teacher; what they were doing with friends; who they were with when they were not at home; and what they were doing at school. Answers were based on a 4-point Likert type scale ranging from 1 (almost nothing) to 4 (almost everything). Thus, the possible total score can range from a minimum of 6 to a maximum of 24, with higher scores indicating greater indirect parental supervision. Internal reliability = .96.

3.3.5 **The Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999)** (Appendix A; page 232 - 233)

The MCAA is a reliable and valid measure (Mills et al., 2002). The MCAA is a two-part self-report measure of associations with criminal friends (part A) and criminal thinking style (part B). For the purpose of this thesis only Part A was used. Part A of the measure intends to quantify criminal associations. Participants are asked to recall three individuals with whom they spent most of their time and then answered four questions regarding the degree of criminal involvement of their associates: (a) "Has this person ever committed a crime?", (b) "Does this person have a criminal record?", (c) "Has this person ever been to prison?", and (d) "Has this person tried to involve you in a crime?". This measure is referred to as "Criminal Friend Index" calculated by assigning 1 through 3 to the amount of time spent with each friend (1 = not a lot, 2 = quite a lot, 3 = lots of time). That number is then multiplied by the number of "yes" responses to the four questions of criminal association. This is repeated for all three friends, and the subsequent scores are summed to produce the Criminal Friend Index (possible scores ranging from 0 to 36).

3.3.6 **Attitudes towards in-group and out-group members** (Appendix A; page 235)

A 5-item self-report measure on attitudes towards in-group and out-group members, measured on a 4-point Likert scale ranging from 1 (completely disagree) to 4 (completely agree) was created (the following statement were included; [1] In general, the people who have committed a crime have some very bad characteristics; [2] I do not mind people committing crimes; [3] I think this country would be better off without so many people who have committed a crime; [4] I don't understand people having a negative attitude to people who have committed a crime; [5] People in general are no better in any way than my friends who have committed a crime). Thus, the possible total score can range from a minimum of 5 to 20, with questions 2, 4 and 5 scores reversed. Lower scores indicate stronger attitudes towards offenders/offending. Internal reliability = .71.

3.3.7 **Self-Esteem Measure for Delinquents (SEM-D)** (Appendix A; page 232)

The SEM-D is adapted from the SEM-C (Debowska, Boduszek, & Sherretts, 2017). The Self-esteem measure for criminals is an 8-item self-report measure assessing self-esteem among incarcerated adult populations. The measure consists of two subscales: prison-specific self-esteem (4 items), looking at self-esteem in a specific context, and personal self-esteem (4 items), inquiring into self-esteem in a context-free manner. Responses are indexed on a 4-point Likert scale (1 = *never*, 4 = *always*). The items of the measure were adapted to suit the non-prison population and youth age group. Due to this, one of the items was removed as it was not deemed suitable for the sample population. This resulted in a 7-item self-report measure assessing self-esteem among delinquent youths. The 4-point Likert scale (1 = never, 4 = always) remained for responses to be recorded. Scores for the total scale range from 7 to 28, with higher scores indicating increased levels of self-esteem. Internal reliability = .80.

3.3.8 Psychopathic Personality Traits Scale (PPTS; Boduszek et al., 2016c) (Appendix A; page 230)

The PPTS is a self-reported 20-item measure designed to assess psychopathic traits in forensic and non-forensic populations. The scale was developed to measure four factors labelled affective responsiveness (Factor 1), cognitive responsiveness (Factor 2), interpersonal manipulation (Factor 3), and egocentricity (Factor 4). Each subscale consists of five items measured using agree (1) and disagree (0) format (i.e., a trait is either present or absent). Scores range from 0 to 20, with higher scores indicating elevated levels of psychopathic personality traits (i.e., greater egocentricity and interpersonal manipulation and increased deficits in affective and cognitive responsiveness). The affective responsiveness subscale is made up of items concerning characteristics of low empathy and emotional shallowness. Cognitive responsiveness subscale measures the ability to understand others' emotional states, mentally represent another person's emotional processes, and engage with others' emotionally at a cognitive level. The interpersonal manipulation subscale measures characteristics such as superficial charm, grandiosity, and deceitfulness. Finally, egocentricity subscale assesses an individual's tendency to focus on one's own interests, beliefs, and attitudes. Internal reliability for affective responsiveness = .71, cognitive responsiveness = 70, interpersonal manipulation = 79, and egocentricity = 72.

3.3.9 Demographics Questionnaire (Appendix A; page 229)

A demographics questionnaire was also devised and included as part of the survey booklet distributed to the YOTs. The following data was obtained; age, gender, and living condition (with parent(s) / without parents (i.e. on my own).

3.4 PROCEDURE

The researcher submitted emails detailing the research proposal to all YOTs in the Yorkshire area. The strict locality was due to travel and time constraints of the researcher. Following responses from seven YOTs, face-to-face meetings were held with the manager of each establishment to discuss the research and its implications in more detail. Five establishments agreed to partake in the research and permission was obtained from each manager for the researcher to undertake the discussed research. Ethical approval was then granted from the University of Huddersfield Human and Health Sciences School Research Ethics Panel (SREP). Upon receiving approval, data collection began.

Data collection was conducted in the five YOT establishments (Barnsley, Bradford, Doncaster, Rotherham, Wakefield) throughout 2016. The researcher held face-to-face meetings with the youth offender mangers at each establishment. This meeting involved: details of the research content, training on the delivering of a structured interview using the survey booklets (appendix A; pages 226 - 236), process of administration and collection of the surveys (appendix B; pages 237 – 238).

The survey booklets were produced by the researcher and printed and hand delivered to each YOT establishment. The survey booklet (appendix A; pages 229 – 235) was also emailed to the YOT manager if they required further copies. The meetings enabled the researcher to address any queries raised by the youth offender managers. As part of their usual one to one sessions with the youths, the youth offender managers, explained the research to the youth and asked if they wished to partake in the research. They handed the youths the ‘Information sheet for Young Person’ (appendix A; page 226 - 227) and ‘Consent Form’ (appendix A; page 228) and requested a signature if they wished to take part. Within these forms, youths were informed that they could withdraw from the research at any time prior to

the data collection deadline that was set at the 31st December 2016. The survey booklets were numbered and when completed the youth offender manager would make a note of the survey booklet number next to the youth's name on a computerised document. The youth offender managers retained this information but did not pass it to the researcher. This way, the youths completed survey booklets remained anonymous to the researcher. If the youth wished to withdraw from the research the youth offender manager would pass the researcher the number relating to that youth and the researcher would delete the data corresponding to that number. Given youth offenders' standing as a vulnerable population and that data collection took part in their YOT sessions, there was potential that they may have felt compelled to participate. It was therefore made clear both in the consent form and verbally that participation was voluntary, without any form of reward.

For the youths who chose to participate, the youth offender manager read the questions from the question booklet (appendix A; pages 229 – 235) to the youth and selected the answer that the youth instructed. This allowed the youth offender manager to clarify any questions that the youths did not understand, particularly for the younger youths and those with additional learning needs. This also minimised sampling bias and maximised the generalisability of findings. There was an existing professional relationship, encouraging openness and honesty, between the youth offender and their youth offender manager. It was made clear to the interviewer that the answers must come from the youths and they should not be led to giving a specific answer. The question booklet took approximately 30 minutes to complete. However, if the youth offender managers deemed it more effective to complete the booklet over two one-to-one sessions, then this was an option. For example, some youths had additional learning needs whereby they would have struggled to complete it within one session. The youth offender manager completed a debrief (appendix A; page 236) at the end of the question booklet which was both read and handed to the youth offender. Upon completion, the youth offender manager

placed the question booklet in the provided envelope, sealed and placed in the collection tray within the manager's office. The researcher then collected the surveys at intermittent points throughout the data collection period. The researcher then entered and analysed the data.

3.5 ANALYTICAL PROCEDURES

3.5.1 Confirmatory factor analysis (CFA)

3.5.1.1 Background on CFA

Structural equation modelling (SEM) is a type of modelling used to assess latent variables (constructs that are not directly measured). The latent variables are identified through the measurement of observed variables. This allows the relationships between latent variables to be represented in a structural model (Kaplan, 2009). CFA is a type of SEM whereby the relationships between latent variables are modelled as covariances or correlations. CFA is driven by theory in that a hypothesised measurement model is proposed and tested. While a lack of correlation between variables may suggest that the theory is not supported, identifying expected correlations does not necessarily indicate that the theory was correct but suggests that it is plausible (Kelloway, 2015). For example, other theories may also produce the same correlations between variables.

3.5.1.2 Process

It is suggested that the application of CFA endures the following five-step process (Bollen & Long, 1993): model formulation, model identification, model estimation, model evaluation and model modification. Firstly, the researcher should specify the model that they want to test. The model ought to be theoretically underpinned and/or based on empirical findings and identify the specific correlations proposed (Kelloway, 2015). For example, the model of delinquent social identity that was proposed in this thesis has three constructs (cognitive centrality, in-group affect and in-group ties) each indicated by six items (see Figure 4.1).

In formulating a model, competing models ought to be compared to establish which model is the best fit. The construct of social identity is viewed as multidimensional (Cameron, 2004; Tajfel, 1978). Measures of social identity have therefore tried to incorporate the multidimensionality of the concept to develop a valid measure (Brown et al., 1986; Hinkle et al., 1989). Boduszek and Debowska (2016) proposed that bifactor conceptualisation ought to be considered because it assists with assessing the validity of a single general factor, while also acknowledging and incorporating aspects of multidimensionality. The model of delinquent social identity was tested in the present thesis and four alternative models were specified and tested.

When formulating a model, it is important to consider model identification. Model identification refers to the model having identified parameters. Wang, Jichuan and Wang, (2012) propose that in order to enhance model identification the number of data points must be more than the number of free parameters. A model is said to be unidentified if it is not possible to express the parameter as a function of expected variances/covariances. An identified model is desired and refers to when the parameter can be expressed by at least one algebraic function of one or more elements of the variance/covariance of the observed variables. Adding to this, Bollen (1989) proposed that a model is classed as identified if: (1) there are three or more observed variables for every latent variable; and (2) there are two or more indicators for each latent factor.

Estimation of SEM models is conducted by minimising residuals that are differences between the sample variance/covariance and the model variance/covariance. Thus, testing how close the observed variance/covariance is to the expected variance/covariance. Weighted least square methods are the most common for estimating a model with outcome measures that are categorical (Wang et al., 2012). Weighted least square mean and variance adjusted (WLSMV)

is known to be a robust estimator that provides parameter estimates and standard errors (Wang et al., 2012).

In order to evaluate the model, it is recommended to conduct an overall model fit test to identify the extent to which the model estimated variance/covariance differs from the observed variance/covariance (Bentler, 1990). There is said to be a good fit, i.e. the model fits the data well, if there is no significant difference between the expected and the observed variance/covariance. Thus, it is plausible that the model supports the proposed correlations. In order to test this, the $\chi 2$ (chi-square) goodness of fit statistic is calculated and the significance assessed (Rasch, 1980). The closer the $\chi 2$ value is to zero the better the fit. Achieving a nonsignificant $\chi 2$ statistic indicates that there is no significant difference between the expected and observed variance/covariance. However, the $\chi 2$ statistic is strongly affected by the sample size. Specifically, the $\chi 2$ value is usually significant in large samples and therefore it is proposed that alternative fit indices are also explored (Smith et al., 1998).

The Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) and Weighted Root Mean Square Residual (WRMR) are two ways of assessing the fit. Both are based on the analysis of residuals where a smaller value indicates a better fit. The RMSEA is widely used in structural equation modelling in order to overcome the issues of using chi-square when sample sizes are large. Ideally, this index should be less than 0.05 to suggest good fit however, values equal to or less than 0.08 are acceptable (Bentler, 1990; Hu & Bentler, 1999). The RMSEA also provides a 90% confidence interval for the point estimate.

Comparative fit indices test the model fit by comparing the similarity between the data and the expected model. The Comparative Fit Index (CFI; Cronbach, 1951) and the Tucker Lewis Index (TLI; Tucker & Lewis, 1973) are two types of comparative fit indices. CFI and

TLI values range from 0 to 1 with larger values indicating a better fit. For CFI and TLI, values above 0.95 indicate good model fit (Bentler, 1990; Hu & Bentler, 1999).

In SEM, a proposed model is tested by how well it fits the available data. A model may be modified if it does not fit the data very well. Initially the lack of model fit needs to be examined to identify exactly needs amending in the model specification (Wang et al., 2012).

3.5.1.3 Bifactor modelling

Bifactor modelling can incorporate both unidimensionality and multidimensionality aspects and ought to be considered in testing different models of CFA (Reise, Moore, & Haviland, 2010). For example, the present thesis produces a bifactor solution (se Figure 4.1) where all items in the scale load onto a single general factor (DSI) and also load onto three factors of delinquent social identity (cognitive centrality, in-group ties, and in-group affect).

3.5.2 Composite reliability

Composite reliability measures the overall reliability of similar but varied items, i.e. it tests the reliability of the construct of latent variable (Hair et al., 1998). Boduszek and Debowska (2016) recommend that composite reliability should be utilised as opposed to Cronbach's alpha because Cronbach's alpha only tests individual item reliability. Cronbach's alpha has been critiqued for both under- and over-estimating the reliability of the measures (Raykov, 1998). Thus, the present research assessed the internal reliability of the MDSI using composite reliability (for procedure see Raykov, 1997; for application in empirical research see Boduszek, Dhingra, Hyland, & Debowska, 2015; Debowska et al., 2014). Values greater than .60 are generally considered acceptable (Diamantopoulos & Siguaw, 2000). The formula for calculating Cronbach's alpha is shown below (ρc = reliability of the factor score, λi = standardised factor loading, and θi = standard error variance [Boduszek et al., 2013a]):

$$\rho_c = \frac{\left(\sum_{i=1}^{m} \lambda_i\right)^2}{\left(\sum_{i=1}^{m} \lambda_i\right)^2 + \left(\sum_{i=1}^{m} (\theta_i)\right)}$$

3.5.3 Independent samples t-test

T-tests are used to compare mean scores. Whereas a paired samples t-test compares means for the same group of people at different times, an independent samples t-test compares mean scores between two unrelated groups on the same variable, therefore allowing researchers to identify the chances that the scores would differ between groups (e.g. males and females). In order to conduct an independent samples t-test the following assumptions must be met: (1) the data is continuous; (2) the data follows a normal distribution; (3) random sampling has been adopted; and (4) the variability of scores for each group is similar. The variability of scores is measured using Levene's test for equality of variance (Levene, 1960), where a non-significant value is desired. A statistically significant t-test result (i.e. $p < 0.05$) indicates that males and females score differently on that variable. A higher t value indicates a larger difference. An effect size measures the size of the difference between the mean scores. Cohen's *d* (Cohen, 1988) is usually used to calculate the size of the effect. According to Cohen (1988), a small effect size is 0.2, a medium effect size is 0.5 and a large effect size is 0.8 and above.

3.5.4 Path analysis

Path analysis tests a theoretically/empirically supported specific pattern of relationship among observed variables. In the current analysis the model of DSI was tested in M*plus* version 7.11. The following statistics were used to assess the fit between the data and pre-established theoretical model: Chi Square (χ^2), Tucker Lewis Index (TLI; Tucker & Lewis, 1973), Root-Mean-Square Error of Approximation (RMSEA; Steiger, 1990) with 90% confidence interval (90% CI), Root Mean-Square Residual (RMSR) and Comparative Fit Index (CFI; Bentler,

1990). For a model to be called good fit, the Chi square should be non-significant (Kline, 2005) and CFI and TLI values above .95 for the CFI and TLI (Hu & Bentler 1999; Vandenberg 2002). However, for CFI and TLI, values above .90 indicate adequate fit (Bentler 1990; Hu & Bentler 1999). RMSEA and RMSR values less than .05 suggest good fit and values up to .08 indicate reasonable errors of approximation in the population (Browne & Cudeck 1989). Regression weights indicate the direction and strength of the relationship with higher values representing a stronger relationship.

3.5.5 Moderated regression analyses

Moderated regression analysis tests the effect of the interaction between an independent variable and a third variable (moderator) on a dependent variable. This interaction suggests that the effect of the relationship between the independent variable and dependent variable is moderated by the third variable (Jaccard & Dodge, 2004). Moderated regression analyses were applied in order to explore the moderating role of four psychopathy factors (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) in the relationship between criminal friend index and each of the three facets of DSI (cognitive centrality, in-group affect, and in-group ties), while controlling for gender and age. Simple slopes analysis allows the significance of the moderating effect on the independent and dependent variable to be explored at different levels of the moderator variable. Simple slopes for the relationship between criminal friend index and DSI, were investigated for low (1 *SD* below the mean), medium (mean), and high (1 *SD* above the mean) levels of psychopathic traits (affective responsiveness, cognitive centrality and egocentricity) using ModGraph 3.0 (Jose, 2013). Only standardised solutions were reported.

3.6 SOFTWARE PACKAGES

3.6.1 Statistical Package for the Social Sciences (SPSS)

SPSS is a commonly used software package for inputting and analysing data. Various types of analyses can be conducted using SPSS, e.g. descriptive statistics, t-tests, and correlations. The present thesis used SPSS to input the raw data and generate descriptive statistics (mean, *SD*, mode, median) and to conduct an independent samples t-test. IBM SPSS Advanced Statistics provides the researcher with the option of univariate and multivariate modelling.

3.6.2 M*Plus*

M*Plus* is a statistical modelling programme. M*Plus* is used for SEM as it allows models with all different or a combination of types of latent variables, e.g. continuous, ordinal, nominal, and manages incomplete, i.e. missing data (Wang et al., 2012). Continuous variables are used to represent factors relating to unobserved constructs, whereas categorical latent variables are used to refer to homogeneous groups. M*Plus* also can be used for cross-sectional and longitudinal data and single-level or multi-level data. The system allows researchers to build a modelling framework. The present thesis used M*Plus* to test four alternative models of the measure of delinquent social identity (see chapter 4, Table 4.2).

3.6.3 ModGraph

ModGraph is used for moderated regression analysis. It provides a simple approach to the analyses and computes cell means for the graphical display or moderation analyses. The present thesis used ModGraph 3.0 (Jose, 2013) to investigate simple slopes for the relationship between criminal friends index and delinquent social identity for low (1 *SD* below the mean),

medium (mean), and high (1 *SD* above the mean) levels of psychopathic traits (interpersonal manipulation). Please refer to chapter 6, Figures 6.1, 6.2, 6.3, 6.4, 6.5, and 6.6.

The analysis is conducted by inputting statistics, which can be obtained from SPSS or M*Plus* regression outputs. ModGraph produces a graphical display of the data. This can be done for either continuous moderators or categorical moderators. For the present thesis, continuous moderators were chosen.

CHAPTER FOUR:

Validation of Measure of Delinquent Social Identity within a Community Youth Offending Team Population

Part of this chapter has been published in *Deviant Behavior*

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Abstract

Purpose – The current chapter aimed to develop and validate a measure of delinquent social identity, based on the Measure of Criminal Social Identity (MCSI-R). **Design/methodology/approach** – Dimensionality and construct validity of the Measure of Delinquent Social Identity (MDSI) was investigated among a sample of opportunistically selected youth offenders ($N = 536$). Four alternative models of the MDSI were compared, using M*plus*.

Results – The model identified as being the best fit for the data was a bifactor model with three concepts (cognitive centrality, in-group affect, and in-group ties), while controlling for the general factor. Although high correlations were found between the three subscales of the MDSI, regression analysis highlighted that the three subscales differentially correlated with criminal friend index, self-esteem, parental attachment and peer rejection. Using composite reliability, the three dimensions of the MDSI were shown to have good internal reliability, supporting differential predictive validity of the MDSI.

Conclusions/limitations/implications – This was the first study to devise and validate a measure of delinquent social identity. This provides fruitful contribution to research as future studies can utilise the measure. Due to been a new measure it is recommended that future research test and validate the MDSI across other cultures.

4.1 INTRODUCTION

4.1.1 Social Identity

Due to its complexity, over the years researchers have defined the concept of identity in varying ways. Researchers argue that identity comprises of meanings that an individual assigns to the roles they play in different social contexts (Stryker & Burke, 2000). Early theories of identity focus on the psychosocial development of individuals and how social experiences impact upon this (Erikson, 1963). Expanding on this, Turner (1982) asserts that there are two types of identity; Personal and Social. Personal identity refers to the unique features of individuals that separates them from one another, whereas social identity is concerned with social interactions with others, developing similarities with others' and acknowledging self-perception as a member of certain social groups (Vryan et al., 2003). Unlike personal identity, a social identity is not rigid and individuals can shift between different social identities (Daves, 1992).

The Social Identity Theory (Tajfel & Turner, 1979) arises from theoretical developments concerning intergroup processes and conflicts, based upon established social hierarchies. The SIT focuses on how ones' knowledge of membership in a social group and the value and emotional significance of the group membership contributes towards the development of an individual's self-concept (Tajfel, 1978). The SIT is underpinned by the notion that humans feel the need to have a sense of belonging (Baumeister & Leary, 1995) and through developing group membership, group behaviours are instilled. Taking a different perspective to the existing social psychological theories surrounding intergroup behaviour, the SIT focuses on group attitudes and behaviours as opposed to individual traits within a group (Adorno et al, 1950).

The SIT denotes that individuals strive to achieve and maintain a high sense of self-esteem, which is enhanced by portraying positive evaluations about the social group to which they belong (Rubin & Hewstone, 1998). Drawing on the Social Comparison Theory, group members compare themselves to their respective group members (in-group) and other social groups' members (out-group) in order to acknowledge their social group as more favourable, referred to as in-group favouritism (Tajfel & Turner, 1979). It is argued that generating positive evaluations is more effective for members of social groups that hold a more superior status as a positive social identity is generated (Ellemers et al., 1999). Therefore, if a social group is viewed upon as negatively by society, it is likely to produce a negative social identity, which can lead to varying outcomes, such as choosing to adopt another social group identity, referred to as social mobility (Hogg & Reid, 2006; Tajfel & Turner, 1979). However, this may not always be an available option. Alternatively, individuals may try and change the comparative value of their group through collective activity or they may adopt a 'social creativity' strategy, whereby they compare their group to more deprived/lower class groups, in order to perceive their group as more positive, in turn allowing for positive evaluations (Tajfel, 1978). Whilst the latter strategy can enhance the subjective status of an in-group, it cannot change the reality of disadvantage, as viewed by the wider society (Jackson et al., 1996).

The SIT formed the basis for, the more up to date, Self-Categorisation Theory (SCT; Turner et al., 1987; Turner et al., 1994). The SCT expands on existing constructs, focussing on the social cognitive processes associated with a shift from personal to social identity, suggesting that a social identity becomes salient when individuals categorise themselves as a member of that group. From a young age, people are introduced to social categories, classifying themselves into groups, such as gender, ability and nationality. While noting different social categories, the behaviours and attitudes of such social groups become apparent. As

aforementioned, an individual may have several different social identities, dependent upon which social group they identify themselves with.

Being part of a social group leads to individuals adapting, or completely changing, their views, attitudes and behaviours to fit with the group they now identify with (Hogg, 2001). Through this transition from personal identity to social identity, individuals lose their sense of uniqueness and adopt a social identity, a process known as depersonalization (Hogg & Smith, 2007). By developing a social identity, individuals no longer differentiate between themselves and others as individuals, but differentiate between themselves as a group and other formed groups, within society, based upon the collective identity of the group. Therefore, the group norms, i.e. expectations of how group members behave, act and think, are established and conformed to by group members. Although some theorists may argue that when not in the presence of other group members, behaviours and attitudes alter (Zimbardo, 1970), Boduszek and Hyland (2011) argue that because such behaviours are instilled in the person's identity, the physical presence of others should not alter their behaviours. Through self-categorisation, cognitive aspects are developed, highlighting a social order being imposed, affecting an individual's self-concept and emotions and generating the shift from individual to group beliefs, values and behaviours.

The construct of social identity is viewed as multidimensional, due to complex nature based on emotional and cognitive aspects (Cameron, 2004; Tajfel, 1978). Measures of social identity have therefore tried to incorporate the multidimensionality of the concept to develop a valid measure, yet not all dimensions were adequately identified. The three key areas which were focused on were; awareness of group membership, group evaluation, and emotional aspects of belonging (Brown et al., 1986; Hinkle et al., 1989). One of the more recent and widely used measures of social identity was established by Cameron (2004) and consists of three subscales; cognitive centrality, in-group ties and in-group affect. Cognitive centrality

refers to the psychological prominence and importance of belonging to the social group based on the individuals' thought processes, corresponding to the concept of self-categorization. In-group affect explains the degree of positive feelings the individual has towards the group and its' members, supported by research surrounding the emotional dimension of identity (Ellemers et al. 1999; Hinkle et al. 1989; Jackson 2002). In-group ties relates to the perceived bond, i.e. emotional connection and loyalty, the individual has with the group and its members, supported by previous studies (Ellemers et al. 1999; Hinkle et al. 1989; Jackson 2002).

4.1.2 Criminal Social Identity

In 2003, Walters began to explore social identity within offenders by adapting Cameron's (2004) Social Identity Scale. However, there has been little advancement in this research field, until recently. Expanding on the theory of Criminal Social Identity (CSI; Boduszek & Hyland, 2011), Boduszek et al. (2016a) proposed the integrated psycho-social model of CSI (IPM-CSI), which is based upon empirically tested theories of the origins of CSI. The IPM-CSI is based upon four concepts; (1) an identity crisis that results in weak bonds with society, peer rejection, and is associated with poor parental attachment and supervision; (2) exposure to a criminal/antisocial environment in the form of associations with criminal friends before, during, and/or after incarceration; (3) a need for identification with a criminal group in order to protect one's self-esteem and (4) the moderating role of personality traits in the relationship between criminal/antisocial environment and the development of CSI.

Boduszek et al. (2012c) developed the Measure of Criminal Social Identity (MCSI) specifically for use with offender populations. Using the same principle as Cameron (2004), Boduszek et al. (2012c) devised an eight-item self-report measure, incorporating the three subscales and concepts as in Cameron's (2004) measure (cognitive centrality, in-group affect and in-group ties). Scores are recorded on a 5-point Likert scale (1= *"strongly disagree"* to 5

= *"strongly agree"*), with scores ranging from 8 to 40. Using confirmatory factor analysis, Boduszek et al. (2012c) confirmed that a three-factor model was the best fit for the data, compared with one and two factorial solutions. In support of this, a study utilising a sample of offenders from three different countries (N = 1171) confirmed a three-factor model was the best fit (Sherretts & Willmott, 2016). Boduszek et al. (2012a) identified that high cognitive centrality scores indicate that criminal identity is crucial for their self-concept and infer that they are likely to approve of and behave in a manner consistent with the group norms, even in the absence of other group members.

Studies utilising the MCSI explored correlations between the MCSI facets and external factors. This allowed exploration of the predictive factors of CSI, which is important to the prevention and intervention of developing a CSI. Early research using a sample of 312 male adult reoffenders incarcerated in Nowogard maximum security Prison in Poland, identified that higher scores on cognitive centrality were associated with increased self-esteem (Boduszeket al., 2012a) and that criminal friend index associated significantly with all three dimensions of CSI in the positive direction (Boduszeket al., 2013a). Increased scores on in-group ties facet were also found to serve as a protective factor against suicide ideation within a sample of 415 imprisoned juvenile offenders (Shagufta et al., 2015b). Boduszek et al. (2016b) utilised a male juvenile sample from Pakistan prisons with a sample size of 126. Using correlational analysis, Boduszek et al. (2016) reported a positive significant correlation between CSI and criminal friends, however, the relationship between the separate dimensions of CSI and criminal friends was not reported. In contrast to Boduszek et al. (2016), Sherretts et al. (2016) found, among 501 male and female offenders incarcerated in three prisons in Pennsylvania State, no direct relationship between any of the dimensions of CSI and criminal friend index. Additionally, in-group ties dimension was related with the female gender, indicating that women are more likely to form stronger bonds and identification with in-group members than males, possibly because

of their greater need to be an accepted and supported member of a group (see Brown & Lohr, 1987; Kiesner, Cadinu, Poulin, & Bucci, 2002; Newman, Lohman, & Newman, 2007).

It was recognised that, while useful across different populations, the MCSI has limitations. Inconsistent research findings have been presented regarding the internal consistency (as measured using Cronbach's alpha) of the three subscales and the MCSI total score; ranging from critical (Sherretts et al., 2016), acceptable (Boduszek, Dhingra, & Debowska, 2016b; Sherretts et al., 2016), good (Boduszek et al., 2016c), to strong (Boduszek et al., 2013a). It is also argued that the MCSI is not consistent across different populations. More specifically, whereas most factor loadings for the scale items were strong in Sherretts and Willmott's (2016) study, some factor loadings for the U.S. and Pakistani samples were below the critical value (< .40). Consisting only of eight items, the MCSI may be insufficient to reflect three latent factors (cognitive centrality, in-group affect, and in-group ties) of such a complex psychological construct. It was thus suggested that the MCSI should be revised and extended in order to increase its reliability and provide a better coverage of the theoretical construct (as recommended by Sherretts & Willmott, 2016).

4.1.3 Development of the MCSI-R

Due to the limitations of the MCSI there was a need to review and adapt the measure with a view to extending it. Boduszek and Debowska (2017) developed a revised version of the MCSI - the MCSI-R - whereby the content was extended in order to better reflect the three CSI factors (cognitive centrality, in-group affect, and in-group ties). Alike the MCSI, the MCSI-R was based on previous theory and supporting research on the associations between the three facets of CSI and psychosocial / behavioural consequences (e.g., Boduszek et al., 2013c; Shagufta et al., 2015; Sherretts et al., 2016). Boduszek and Debowska (2017) aimed to create an instrument that would be quick to administer, due to the short attention span of

prisoners and that CSI ought to be explored with other external variables (Boduszek et al., 2016a). Following a pilot of the MCSI-R (for further details please refer to; Boduszek & Debowska, 2017), the final version resulted in 18 items (six for each dimension) measured on a 5-point Likert scale (1 = *"strongly disagree"*, 5 = *"strongly agree"*). In order to avoid any difficulties for offenders, all items were measured in the same direction. Two items from the MCSI were excluded due to low factor loadings.

Boduszek and Debowska (2017), using Confirmatory Factor Analysis, specified and tested a bifactor model, with the aforementioned three factors. The bifactor model was the best fit to the data. Additionally, good composite reliability of the three MCSI-R dimensions was established. The first, and only study to date, using the MCSI-R consisted of a systematically selected sample (N = 2192) of incarcerated male adults in Polish prisons. Findings of Boduszek and Debowska's study also revealed, through regression analyses, a positive significant correlation between cognitive centrality and in-group ties with prisonization; a significant negative correlation between cognitive centrality and self-esteem; a significant positive relationship between in-group ties and self-esteem; and a significant positive relationship between cognitive centrality and in-group ties with violent offending. They found that the only significant predictor of number of incarcerations was the in-group ties factor. This suggests that the strength and type of interaction between external variables and CSI varies according to the CSI dimensions. Boduszek and Debowska noted that future studies should control for other factors associated with in-group affect, since in-group affect dimension did not form any significant correlations with external criteria. They also identified a need to validate the MCSI-R among female offenders, youth offenders, inmates from different cultural backgrounds, as well as non-incarcerated criminal samples in order to verify its factorial invariance.

The MCSI-R is in its' whole is inappropriate to be used on a juvenile sample. Firstly, within youth offending teams they encourage the youths to be referred to as 'young person'

and not be stigmatised by the phrase ‘criminal’. Most of the MCSI-R items (items 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, and 15) use the phrase ‘criminal’ to refer to the offender and/or their offending friends. Therefore, the MCSI-R item wording is not in line with the YOT guidelines and may also cause some confusion to the youth offender. It is therefore suggested that these items should be altered to refer to the youth offender and/or their friend(s) as someone who breaks the law or acts antisocially. Secondly, some of the item wording may be difficult for youths, as young as ten years old, to understand. For example, item 9 refers to ‘forming a bond with other people’ and youths may not understand what this phrase means. It is suggested that this phrase could be amended to ‘making friends’ to make it easier for the youths to understand. Finally, the current MCSI-R contains eighteen-items. The individual items require reviewing and if some are unsuitable it is suggested that they be removed or amended. Removal of some items may be appropriate as eighteen-items may be too long for some youths, who have shorted attention spans, to complete. If the MCSI-R was to be used in a community juvenile sample it would also require some amending. One of the items (item 12) refers to the offender being in prison. Developing a measure to be utilised in the community would require this item to be amended, as the majority of youths would not have been imprisoned.

4.1.4 Aim of the current chapter

In line with the above, the MCSI-R is in need of validation with other offender samples, particularly youths, females and non-incarcerated offenders. This is of particular importance because differences in relationships between CSI and criminal friend index were highlighted for adult and juvenile populations (Boduszek et al., 2016b; Sherretts et al., 2016). Other factors need also to be considered for examining relationships with the CSI factors. To date, other samples and factors have not been explored using the revised MCSI-R and therefore such research is warranted. Consequently, the main objective of the current chapter was to develop an adapted version of the MCSI-R for youth offenders; Measure of Delinquent Social Identity

(MDSI). Another objective was to investigate the factor structure of the MDSI using confirmatory factor analysis. As per Boduszek and Debowska's (2016) recommendations, four competing, theoretically and methodologically sound, factorial solutions, including bifactorial solution. Finally, the internal consistency of the scale using composite reliability was assessed (see Boduszek & Debowska, 2016; Debowska, Boduszek, Kola, & Hyland, 2014; Sherretts & Willmott, 2016) and the differential predictive validity of the MDSI factors was explored.

4.2 METHOD

4.2.1 Sample

In total, five hundred and thirty-six (N = 536) of youth offenders were included in the current analysis (age range from 12 to 17, M = 15.26, SD = 1.13, Mdn = 15, and Mode = 15). The sample comprised of n = 348 (64.9%) males and n = 188 (35.1%) females. Two hundred and three (n = 203, 37.9%) participants were living with one parent, 137 (25.6%) living in a care home, 86 (16%) living with both parents, 54 (10.1%) living in foster care, 34 (6.3%) living with grandparents, 12 (2.2%) living without parents and 10 (1.9%) living with step parents.

4.2.2 Procedure

Printed self-reported anonymous surveys were delivered by the researcher to all YOTs. Data collection took place in each one to one session held between the youth offender and their youth worker. The youth workers, trained by the author, clarified the nature and purpose of the study, explained that data collection was anonymous, and provided a summary of the informed consent to all participating youth offenders. To minimise sampling bias and maximise the generalisability of findings, youth workers conducted structured interviews with the participants based on the surveys. Given youth offenders' standing as a vulnerable population and the potential that they may feel compelled to participate, it was made clear both in the consent form and verbally that participation was voluntary, without any form of reward. They were also provided with details of how to withdraw from the study. Youth offender managers were instructed to place completed surveys in envelopes and place them in the designated area for collection. Completed surveys were collected from all participating YOTs by the researcher.

4.2.3 Materials

The following measures were incorporated in the survey booklet: The Measure of Delinquent Social Identity (MDSI), Self-Esteem Measure for Delinquents (SEM-D) is adapted from the SEM-C (Debowska et al., 2017), The Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999), Peer Rejection (Mikamiet al., 2005), Parental attachment (Ingram et al., 2007), and a demographics questionnaire. Please refer to the methodology chapter (chapter three, sections 3.3.1, 3.3.2, 3.3.3, 3.3.5, 3.3.7 and 3.3.9) for detailed information about the aforementioned measures.

4.2.4 Analysis

The dimensionality and construct validity of the MDSI was investigated using traditional CFA techniques and confirmatory bifactor analysis (see Reise et al., 2010). Four alternative models of the MDSI were specified and tested using M*plus* version 7.4 (Muthén & Muthén, 1998-2015), with weighted least squares means and variance adjusted (WLSMV) estimation.

Model 1 is a one-factor solution where all 15 MDSI items load onto a single latent factor of delinquent social identity. Model 2 is a correlated two-factor solution where items load on cognitive centrality factor (items 1, 2, 3, 4 and 5) and affective traits (all remaining items) factor (this solution was suggested by Jackson, 2002). Model 3 is a correlated three-factor solution where items load on cognitive centrality factor (items 1, 2, 3, 4 and 5), in-group affect factor (items 6, 7, 8, 9 and 10), and in-group ties factor (items 11, 12, 13, 14 and 15) (this solution was suggested by Cameron, 2004). Model 4 (see Figure 4.1) is a bifactor conceptualisation with one general factor of delinquent social identity and three subordinate factors described in Model 3. Testing a bifactor conceptualisation is important because it assists

with assessing the validity of a single general factor, while also acknowledging and incorporating aspects of multidimensionality (Boduszek & Debowska, 2016).

The overall fit of each model and the relative fit between models were assessed using a range of goodness-of-fit statistics: the $\chi 2$ statistic, the Comparative Fit Index (CFI; Cronbach, 1951), and the Tucker Lewis Index (TLI; Tucker & Lewis, 1973). For CFI and TLI, values above 0.95 indicate good model fit (Bentler, 1990; Hu & Bentler, 1999). In addition, the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) with 90% confidence interval is presented. Ideally, this index should be less than 0.05 to suggest good fit however, values equal to or less than 0.08 are acceptable (Bentler, 1990; Hu & Bentler, 1999). Furthermore, the Weighted Root Mean Square Residual (WRMR) was used to evaluate the alternative models, with the smaller value indicating the best-fitting model.

Alpha coefficients as indicators of internal consistency have been criticised within a latent variable modelling context due to their reliance on both the number of items tested as well as correlations between them (see Cortina, 1993; Raykov, 1998). Thus, this research assessed the internal reliability of the MDSI using composite reliability (for procedure see Raykov, 1997; for application in empirical research see Boduszek, Dhingra, Hyland, & Debowska, 2015; Debowska et al., 2014). Values greater than 0.60 are generally considered acceptable (Diamantopoulos & Siguaw, 2000).

For further information about confirmatory factor analysis, composite reliability, bifactor modelling, and Mplus refer to the methodology chapter (chapter three, sections 3.5.1.1, 3.5.1.2, 3.5.1.3, 3.5.1.4, 3.5.2, and 3.6.2).

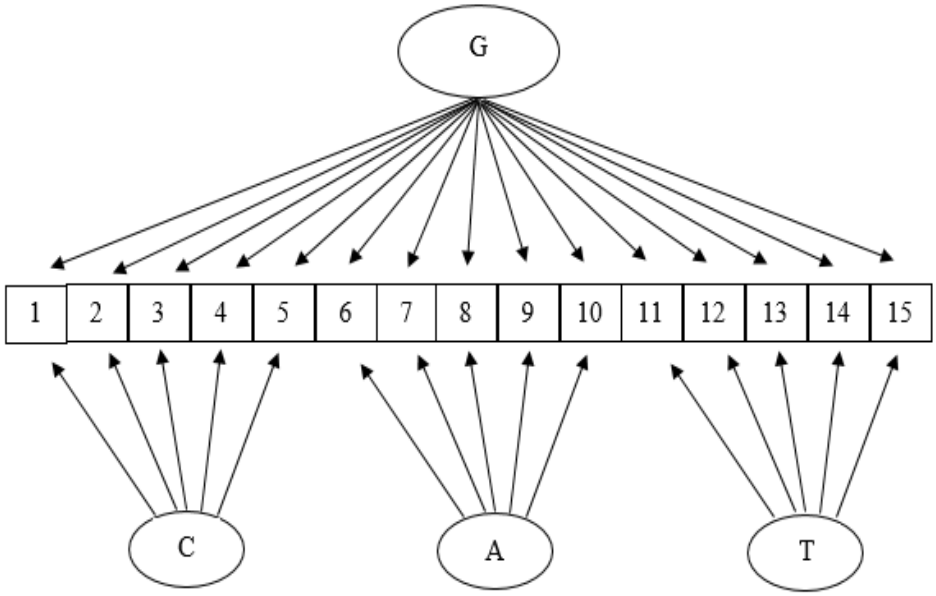

Figure 4.1. Bifactor solution of the MDSI (G = general factor of CSI; C = cognitive centrality; A = In-group affect; T = In-group ties).

4.3 RESULTS

4.3.1 Descriptive statistics

Descriptive statistics for three MDSI factors, Criminal friend index, Attachment, Rejection and Self-esteem are presented in Table 1.

Table 4.1

Descriptive Statistics for the MDSI Factors, Criminal friend index, Attachment, Rejection and Self-esteem

Variables	*M*	*SD*	*Mdn*	Observed Min.	Observed Max.
Cognitive centrality	13.73	3.02	14	5	20
In-group affect	13.80	2.70	14	5	20
In-group ties	14.48	3.07	15	5	20
Criminal Friends Index	19.37	5.66	19	4	33
Attachment	19.70	6.03	18	9	36
Rejection	11.51	2.34	11	6	19
Self-esteem	15.62	2.73	15	7	22

4.3.2 Confirmatory factor analyses

Fit indices for four alternative models of MDSI are presented in Table 4.2. One-factor model, correlated two-factor model, and correlated three-factor model were rejected based on the RMSEA statistic (value above .08). Bifactor model of the MDSI provides the best fit to the

data based on all statistics (CFI = .98, TLI = .97, RMSEA = .08 [90%CI = .07/.09], WRMR = 1.76).

Table 4.2

Fit Indices for Four Alternative Models of the MDSI

Models	χ^2	***df***	**CFI**	**TLI**	**RMSEA**	**90% CI**	**WRMR**
1. One-factor	1335.53	90	0.95	0.95	0.10	0.09-0.11	3.01
2. Correlated 2 factors	1164.17	89	0.96	0.96	0.09	0.08-0.10	2.78
3. Correlated 3 factors	1140.54	87	0.97	0.96	0.09	0.08-0.10	2.74
4. Bifactor	759.42	72	0.98	0.97	0.08	0.07-0.09	1.76

Note. CFI = Comparative Fit Index; CI = Confidence Interval; *df* = degrees of freedom; RMSEA = Root-Mean-Square Error of Approximation; WRMR = Weighted Root Mean Square Residual; TLI = Tucker Lewis Index; χ^2 = chi square goodness of fit statistic. * Indicates χ^2 are statistically significant ($p < .05$).

4.3.3 Factor loading analyses

The appropriateness of the bifactor model of the MDSI can also be determined based on statistically significant factor loadings (Table 4.3). Inspection of the factor loadings for the three delinquent social identity factors provides imperative evidence regarding the correctness of including these latent factors in the scoring of the MDSI. The majority of items loaded more strongly on each of the three delinquent social identity factors and less strongly on general factor. Items 1, 2 and 5 (but not items 3 and 4) loaded more strongly on cognitive centrality than the general factor. Items 7, 9 and 10 (but not items 6 and 8) loaded more strongly on in-group affect than the general factor. Items 11, 12 and 15 (but not items 13 and 14) loaded more strongly on in-group ties than the general factor. This indicates the supremacy of the three factors of delinquent social identity over the general factor in the conceptualisation of the factor

structure of the MDSI. These results advocate that the delinquent social identity is composed of three subscales (cognitive centrality, in-group affect, and in-group ties) while controlling for the general factor.

Table 4.3

Standardized Factor Loadings for the Three MDSI Factors (C = Cognitive centrality, A = In-group affect, T = In-group ties) and General Factor (G)

MCSI-R items	**G**	**C**	**A**	**T**
1. I have a strong sense of security because I personally know people who have broken the law	.67***	.70***		
2. It doesn't bother me that I am/ was involved in antisocial acts	.16	.99***		
3. Most of my opinions and views are similar to those who break the law	.66***	.49***		
4. I get respect from others because I was involved in antisocial activities	.72***	.53***		
5. I'm tougher than the average person because I'm not afraid to break the law from time to time	.20	.92***		
6. I share my personal experiences with others who break the law	.56***		.41***	
7. I care about my friends who break the law	.63***		.63***	
8. Being with my friends who break the law makes me feel stronger	.70***		.55***	
9. I feel comfortable when I am with my friends who break the law	.51***		.60***	
10. When I am with my friends who break the law, I feel I belong somewhere	.37**		.77***	
11. I have a lot in common with other people who have been involved in antisocial acts	.34***			.87***
12. I feel close to other people who have been involved in antisocial acts	.22*			.92***
13. I find it easy to make friends with other people who have been involved in antisocial acts	.71***			.64***
14. I find it relatively easy to get close to those involved in some antisocial activities	.64***			.63***
15. I'm there for my friends even if they have committed a crime	.56**			.65***

Note. Factor loadings are statistically significant at * $p < .05$; ** $p < .01$; *** $p < .001$

4.3.4 Correlations between factors

The correlations between the three delinquent social identity factors were high (cognitive centrality and in-group affect r = .83; cognitive centrality and in-group ties r = .83; in-group affect and in-group ties r = .85), which indicates a significant overlap between the variables. Boduszek and Debowska (2016; see also Carmines & Zeller, 1979) suggested that when the best model fit is multidimensional and some factors are highly correlated ($r \geq .50$), a differential predictive validity has to be established in order to verify whether the dimensions are associated differentially with external variables. Table 4.4 presents the outcome of regression analyses. Based on the results, cognitive centrality and in-group affect form positive significant correlations with criminal friend index, whereas a negative significant relationship is observed between in-group ties and criminal friend index. Both in-group ties and in-group affect associated negatively with self-esteem, whereas cognitive centrality forms a positive correlation with self-esteem. Cognitive centrality and in-group affect are significant predictors of self-esteem, whereas in-group ties do not significantly predict self-esteem. Cognitive centrality and in-group affect form negative significant correlations with parental attachment, whereas a positive significant relationship is observed between in-group ties and parental attachment. Cognitive centrality and in-group ties form positive correlations with peer rejection, whereas a negative significant relationship is observed between in-group affect and peer rejection. Both cognitive centrality and in-group affect form significant predictors of peer rejection, whereas in-group ties is not a significant predictor of peer rejection. These results confirm that cognitive centrality, in-group affect, and in-group ties should be included as separate subscales in the MDSI.

Table 4.4

Associations between the Three MDSI Factors and External Variables (Crim friend = Criminal friend index, Att = Parental attachment, Rej = Peer rejection)

Variable	Crim friend (R^2 = .23) β (95% CI)	Self-esteem (R^2 = .16) β (95% CI)	Att (R^2 = .16) β (95% CI)	Rej (R^2 = .10) β (95% CI)
Cognitive Centrality	.27*** (.12/.42)	.17* (.01/.32)	-.37*** (-.53/-.22)	.16* (.00/32)
In-group Affect	.48*** (.33/.64)	-.49*** (-.66/-.33)	-.26** (-.42/-.10)	-.47*** (-.64/-.30)
In-group Ties	-.30*** (-.46/-.15)	-.04 (-.20/.13)	.25** (.09/.42)	.04 (-.13/.21)

Note. $^{**}p < .01$, $^{***}p < .001$

4.3.5 Composite reliability

Internal reliability of the MDSI factors was investigated using composite reliability instead of Cronbach's alpha, as suggested by Boduszek and Debowska (2016; see also Raykov, 1997). Composite reliability was calculated using the following formula:

$$CR = \frac{\left(\sum \lambda_i\right)^2}{\left(\sum \lambda_i\right)^2 + \sum Var\left(\varepsilon_i\right)}$$

where CR = reliability of the factor score, λ_i = standardized factor loading, and $Var(\varepsilon_i)$ = standard error variance. Results suggest that all three delinquent social identity factors (cognitive centrality = .86, in-group affect = .73, and in-group ties = .86) and general factor (.85) demonstrate good internal reliability.

4.4 DISCUSSION

Existing research supports that criminal social identity correlates with various psychosocial and mental health factors (e.g., Boduszek et al., 2013b; Shagufta et al., 2015b). Most of the research focuses on the predictors of CSI, which is of great value to identifying areas likely to lead to the development of a CSI. This is pertinent to the national offender management service (NOMS), as theoretical underpinnings can be utilised in the development of intervention programmes and risk assessments to be administered in prisons and the community. While Boduszek and Debowska (2017) devised a reliable and valid measure of CSI, some of the items included in the measure were not appropriate for use with youth offender populations. The aim of the current chapter was to create and validate the Measure of Delinquent Social Identity (MDSI), created on the basis of the MCSI-R as well as assess the differential predictive validity of its three dimensions.

Researchers have argued that, when assessing construct validity and dimensionality of a concept, more than one solution should be tested as this explores the true nature of the depth of the measure (Boduszek & Debowska, 2016). In the current chapter, four alternative models of the MDSI (a one-factor model, two-factor model, three-factor model, and a bifactor model with three grouping factors) were investigated, using confirmatory factor techniques. Results indicated that the only acceptable solution (as shown by all fit statistics) for the 15-item MDSI was the bifactor model with three grouping factors (cognitive centrality, in-group affect, and in-group ties), while controlling for a general factor. The three grouping factors explained the majority of covaration and hence were utilised as the basis for constructing the subscales of the measure (see Reise et al., 2010). As aforementioned, bifactor conceptualisation is important because it assists with assessing the validity of a single general factor, while also acknowledging and incorporating aspects of multidimensionality (Boduszek & Debowska, 2016). Thus, this approach to data modelling encompasses the complex, multidimensional

psychological concept of CSI, which is in line with Boduszek and Debowska's (2017) MCSI-R. It is important to acknowledge recent concerns with applying the bifactor model as a structure of psychopathology (Bonifay, Lane, & Reise, 2017). It is argued that the bifactor model has a tendency to fit any data and therefore only appears to fit better than other models and as such 'goodness of fit' statistics should not be over relied on (Bonifay and Cai, 2017). Within the present chapter, not only was the bifactor model shown to provide the best fit to the data based on all statistics, but the bifactor model was based on supporting research that social identity and criminal social identity are made up of three distinct sub factors (Cameron, 2004; Boduszek et al, 2012c; Boduszek & Debowska, 2017). Bonifay et al. (2017) also noted that it is imperative that the group factors are considered as meaningful sub-factors of the general factor and that these sub-factors are distinctively unique. In order to address this, the present thesis tested the differential predictive validity of the factors in order to assess whether the sub-factors were distinctively unique.

The three MDSI facets were found to be highly associated (ranging from .83 – to .85) with one another, indicating that they may measure the same concept (Carmines & Zeller, 1979). Thus, in line with Boduszek and Debowska's (2016) recommendations, a test of differential predictive validity was applied to identify whether the three dimensions of MDSI correlate differently with external factors. Indeed, the present results demonstrated that the three delinquent social identity factors correlated differentially with external measures, confirming their conceptual distinctiveness. Specifically, cognitive centrality and in-group affect associated significantly with criminal friend index in the positive direction, indicating that associations with criminal friends may enhance identification and an emotional attachment (sense of belonging) with other delinquents. In contrast, in-group ties associated significantly with criminal friend index in a negative direction, indicating that associations with criminal friends may decrease the loyalty towards other delinquents. Conversely, previous findings did

not identify a significant correlation between criminal friend index and CSI (Sherretts et al., 2016), whereas other findings revealed a significant positive relationship between criminal friend index and all three dimensions of CSI (Boduszek et al., 2012a). Such contrasts may be due to differences in populations, highlighting the importance of validating measures within different populations. For example, youth offenders may not form strong in-group ties like adult offenders do. Considering that strong in-group ties act as a protective factor against suicidal ideation (Shagufta et al., 2015b), a lack of in-group ties for youth offenders may begin to explain why they are at particular risk from suicide (Simon et al., 2001).

Correlations between self-esteem and CSI were found by Sherretts et al. (2016), which can suggest that imprisoned offenders, through impression management, aim to elicit positive evaluations from others in order to maintain positive self-esteem (see Goffman, 1963, 1990). However, other research shows significant associations between cognitive centrality and negative self-esteem, indicating that identifying with other offenders lowers self-esteem (Boduszek et al., 2013b; Boduszek & Debowska, 2017). Such research is also in support of theories suggesting that self-esteem is generally lowered among low status group members (Ellemers et al., 1999). However, theories also suggest that feeling part of a group can lead to a sense of belonging somewhere and in turn increase self-esteem, introduced by Tajfel and Turner (1979). The current findings, however, show a significant relationship between in-group affect and negative self-esteem, indicating that feeling a sense of belonging does not increase self-esteem within delinquent groups. A significantly positive relationship between self-esteem and cognitive centrality was found suggesting that identifying with other youth offenders increases self-esteem. A recent study also identified a positive relationship between self-esteem and in-group ties (Boduszek & Debowska, 2017). The disparity in findings surrounding self-esteem may be due to the differences in ages between the populations, which reinforces the need for longitudinal studies to identify temporal changes in self-esteem.

Cognitive centrality and in-group affect significantly associated with attachment in a negative direction whilst in-group ties associated significantly with attachment in a positive direction. This suggests that weak parental attachments may increase identification and emotional attachment with other delinquents, but strong parental attachment may increase an emotional connection with other delinquents. Cognitive centrality significantly associated with peer rejection in a positive direction, whereas in-group affect significantly associated with rejection in a negative direction. This indicates that peer rejection may increase an emotional attachment to other delinquents, but a lack of peer rejection may increase identification with other delinquents. There appears to be little connection between peer rejection and in-group ties, as no significant relationship was identified. Due to the scant research into CSI and parental attachment and peer rejection, it is not possible to compare findings of the current chapter to other populations.

4.4.1 Limitations of the current chapter and future directions

When considering the results of the current chapter the following limitations ought to be considered. First, the current sample consisted of youth offenders within the Yorkshire area and hence future studies should seek to validate the MDSI among youth offenders from different cultural backgrounds in order to verify its factorial invariance. Although the present chapter incorporated females, it did not allow for factor invariance as the sample of females was not large enough. Therefore, it is recommended to incorporate a larger sample or a more proportionate sample regarding gender, allowing for comparisons between genders to be made. Second, the current chapter was cross-sectional and therefore temporal order of the associations reported cannot be assured. Longitudinal studies are therefore required to offer support to the temporal order.

Despite the aforementioned limitations, the current chapter expands on existing literature in the area of criminal social identity. An adapted version of MCSI-R was developed and validated for delinquents, being the MDSI. By adapting the existing valid MCSI-R, this allowed the MDSI to measure delinquent social identity and demonstrate its' complex psychological nature through the application of bifactor modelling. It was shown that the MDSI scores are best captured by three grouping factors (cognitive centrality, in-group affect, and in-group ties), whilst controlling for a general factor. The three grouping factors, although highly correlated with one another, evidenced a good differential predictive utility for criminal friend index, self-esteem, parental attachment and peer rejection. This highlights the importance of considering the predictors and consequences of delinquent social identity when implementing risk assessments and interventions within the NOMS.

This is of particular importance within the youth offender population where risk factors, such as parental attachment and peer rejection, are dynamic as these are aspects that can be altered. Therefore, treatment for youth offenders should target two key areas; relationships and self-esteem. Positive relationships should be encouraged by a) developing attachments with parent(s)/guardian(s) in order to prevent criminal cognitive structures and emotional attachments with offenders, b) encouraging integration with friends at school to prevent peer rejection and in turn preventing emotional attachments with offenders and c) encouraging pro-social associations in order to prevent criminal cognitive structures and emotional attachments with offenders. Similar to suggested treatment for adult offenders (Boduszek & Debowska, 2017), treatment should aim to increase youth offenders' self-esteem in order to prevent them from forming criminal cognitive structures. The MDSI can assist practice and further research within the field.

According to Erikson's stages of identity development (1959), juveniles aged between 12 and 18 years of age individuals explore different identities, prior to settling with a more

consistent identity. Throughout this they experience an identity crisis, where those identified in lower status categories face conflict if their personal identity (ideal self) conflicts with their social identity (actual self). Thus, they cannot achieve what they want. As the current chapter focuses on juvenile offenders within this age category, participants may have been at different points within this stage of development; hence the progress of the development of a delinquent social identity may vary. Future research should therefore aim to explore correlations between age and criminal social identity development.

4.4.2 Conclusions

The present chapter aimed to devise and validate a measure of delinquent social identity. Using confirmatory factor techniques, a bifactor model was shown to be the best fit for the data and the three facets of delinquent social identity were shown to have differential predictive validity. Using composite reliability, the three facets of the MDSI (cognitive centrality, in-group affect, and in-group ties) were shown to have good internal reliability. This is the first measure to be devised and validated to assess delinquent social identity. Therefore, it provides great contribution to the research field as it provides a free and easy to implement measure that can be utilised in future research.

CHAPTER FIVE:

Investigating the Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI) within a sample of community youth offenders

Abstract

Purpose – The current chapter aimed to explore the correlates of CSI in a single study, using the validated MDSI (Measure of Delinquent Social Identity).

Design/methodology/approach – Path analysis was conducted among a sample of opportunistically selected youth offenders (N = 536; age range from 12 to 17 years), separately for males (n = 348; M age = 15.28 years) and females (n = 188; M age = 15.23 years).

Results – Findings showed a positive significant relationship between interpersonal manipulation and in-group affect (β = .08) for males, and a positive significant relationship between interpersonal manipulation and in-group ties (β = .21) for females. Among males, the findings revealed a negative significant relationship between self-esteem and cognitive centrality (β = -.13). For females only, a negative significant relationship was identified between living with parents and associating with criminal friends (β = -.20).

Conclusions/limitations/implications – This was the first study to examine the Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI) in a single study. The findings provide some support for aspects of existing interventions programmes while suggesting other target areas. Furthermore, the present chapter supports the implementation of gender specific intervention programmes.

5.1 INTRODUCTION

5.1.1 Social Identity / Criminal Social Identity

Throughout the years there have been developments in the understanding of social identity, in particular group social identity (Erikson, 1963; Stryker & Burke, 2000; Turner, 1982). Chapter two outlined some of the earlier theories surrounding social identity and how these affect group processes (Social Identity Theory [Tajfel & Turner, 1979] and Self Categorisation Theory [Turner et al., 1987]). The theories focus on why someone joins a particular group, e.g. to have a sense of belonging (Baumeister & Leary, 1995) and to increase self-esteem (Rubin & Hewstone, 1998) and how they shift from a personal identity to a social identity.

Social identity research has advanced to consider why people join antisocial/criminal groups, e.g. due to being rejected by peers (Jackson et al., 1996). Boduszek and Hyland (2011) posited that a criminal social identity (CSI) is formed through group membership with other offenders, enduring the same process as highlighted in the social identity theory (for more information on CSI please refer to chapter two). In order to present their theory of CSI, Boduszek et al. (2016a) devised the IPM-CSI that proposes how several factors (per rejection, weak bonds with society, a dysfunctional family, criminal associations, criminal attitudes, self-esteem and personality) interact in the development of a criminal social identity. Chapter two provides full detail on the constructs of the IPM-CSI ([1] an identity crisis that results in weak bonds with society, peer rejection, and is associated with poor parental attachment and supervision; [2] exposure to a criminal/antisocial environment in the form of associations with criminal friends before, during, and/or after incarceration; [3] a need for identification with a criminal group in order to protect one's self-esteem and [4] the moderating role of personality traits in the relationship between criminal/antisocial environment and the development of CSI).

To summarise the factors of the concepts of the IPM-CSI, the identity crisis relates to feelings of frustration and stress experienced during childhood that can be exacerbated by external factors, e.g. negative family factors (Agnews, 1993; Boduszek et al., 2014b; Higgins, 1987; Ingram et al., 2007; Waterman, 1985). During this time in childhood, children begin to develop friendships and associations at school and other social events. Negative effects of dysfunctional parenting and a lack of social control can result in children being rejected by pro-social groups. This can result in the formation or joining of antisocial groups (Bagwell, 2004; Laird et al., 2001; Rubin & Hewstone, 1998). Researchers have proposed that being rejected by peers results in low self-esteem that can be increased through forming a social identity with a group despite it being antisocial or criminal (Downs & Rose, 1991; Juvonen, 1991; Parker & Asher, 1987; Tajfel, 1978). Research supports existing theory (Differential Reinforcement Theory; Akers, 1979; 1985) that associating with other offenders increases the chances of developing a criminal social identity (Boduszek et al., 2012a; Boduszek et al., 2016b). This is partly due to adapting thoughts, attitudes and behaviours to reflect that of the group (Hogg, 2001).

5.1.2 The moderating role of personality traits in the relationship between criminal/antisocial environment and the development of CSI

The IPM-CSI model elucidates that the relationship between environmental factors and CSI may be moderated by an individual's personality traits. Within the model, a special emphasis is placed on psychopathic personality traits. The prevalence of psychopaths within the prison service (9-30%) has been noted to be higher than within the general population (1-3%) (Nicholls, Ogloff, Brink & Spidel, 2005; Vitale, Smith, Brinkley & Newman 2002; Strand & Belfrage, 2005). Therefore, it is not surprising that psychopathy is a widely researched topic in the area of offending behaviour (Declercq et al., 2012; Gendreau, Goggin, & Smith, 2002; Häkkänen & Hare, 2009; Laurell & Dåderman, 2007; Salekin, Rogers, & Sewell, 1996).

Psychopathy has been characterised by interpersonal (e.g. selfishness, grandiose, lying and manipulative behaviour), affective (e.g. lacking empathy/remorse) and behavioural (impulsivity, violating social norms and expectations) traits (Hare, 2003). The callous affect facet (lack of remorse, lack of empathy, shallow; Hare & Newman, 2008) of psychopathy has been shown to act as a moderator between criminal associations and in-group ties (Sherretts et al., 2016). Sherretts et al. also identified that the antisocial behaviour facet of psychopathy correlates with all three aspects of CSI, whereas erratic lifestyle and interpersonal manipulation aspects of psychopathy positively associate with in-group ties. The researchers theorised that individuals utilise interpersonal manipulation skills in order to simulate changes in identity and, using impression management, elicit positive evaluations from others, leading to the maintenance of positive self-esteem (Goffman, 1963, 1990). Based upon this, offenders with low levels of interpersonal manipulation could be expected to have low self-esteem; however, this remains to be empirically tested.

Hare's (2003) concept of psychopathy has been critiqued for including behavioural factors – erratic lifestyle and antisocial/criminal behaviour - as they seem to be an outcome of psychopathy, not an integral part of it (see Boduszek & Debowska, 2016 for a review). Since criminal behaviour can also be an outcome of CSI, the use of a psychopathy measure indexing criminal/antisocial behaviour as a moderator in the IPM-CSI model would be tautological. In considering the above criticisms, Boduszek et al. (2016c) developed a four-factor, personality-based model of psychopathy consisting of affective responsiveness (low empathy and emotional shallowness), cognitive responsiveness (emotional awareness of others' emotional states and an ability to engage with others' emotionally on a cognitive level), interpersonal manipulation (superficial charm, grandiose beliefs and calculating behaviour) and egocentricity (self-centredness). To date, research testing the associations between this personality-based psychopathy model and CSI is missing. Furthermore, all of the above-cited

studies in the area of CSI and psychopathic traits focused on adult populations. Although personality is in the state of flux in childhood and adolescence and, as such, youngsters cannot be diagnosed with a personality disorder, recognising problems early on could be beneficial to designing appropriate interventions (Frick, 2007). In the context of IPM-CSI, targeting malfunctioning personality traits related to CSI development can result in improved outcomes for youth at risk (i.e., those exposed to environmental risk factors for CSI). As such, empirical research testing associations between environmental and personality characteristics and CSI among adolescents may have important practical implications.

Research surrounding gender differences in psychopathy tends to be based upon Hare's (2003) concepts of psychopathy. In studying females, findings showed that correlations between interpersonal and affective facets of psychopathy and recidivism are positive and significant, whereas correlations between behavioural factors of psychopathy and recidivism are non-significant (Salekin et al., 1996). Gender differences have also been acknowledged in criminal social identity, suggesting that females are more likely to form stronger bonds and identification than males due to an increased desire to be accepted by other group members (Brown et al., 1986; Kiesner et al., 2002; Newman et al., 2007). Providing additional support to female offenders, such as additional visits to maintain family bonds, was suggested as a practical implication by Sherretts et al. (2016), however, further research is required to support this notion.

Research concerned with exploring the elements of the IPM-CSI is predominantly based on imprisoned male adults (Boduszek et al., 2012a; 2012b; 2013a; Boduszek & Debowska, 2017; Walters, 2003), with scant research focussing on youth offenders (Boduszek et al., 2016b) and females (Sherretts et al., 2016). To date, all research considers offenders who are imprisoned and there is a void in investigating the developments of CSI in community offenders. As most of the research surrounding CSI is over five years old (Boduszek et al.,

2012a; 2012c; 2013a; Walters, 2003), limited studies utilise up to date measures (Boduszek & Debowska, 2017). For example, only Boduszek and Debowska (2017) used a revised measure of CSI (MCSI-R; Boduszek & Debowksa, 2017), whereas the older studies (Boduszek et al., 2012a; 2012b; 2013a) administered the original CSI measure (MCSI; Boduszek et al., 2012c), which has been critiqued for lacking internal consistency among some participant samples and being too simplistic for such a complex psychological construct (Sherretts et al., 2016).

5.1.3 Aim of the current chapter

Although the IPM-CSI (Boduszek et al., 2016a) offers a comprehensive explanation of the development of CSI, research has not explored all of its elements in one single study. The main aim of the present chapter was to fill this void by testing the following associations: parental factors (parental rejection, parental attachment, parental supervision, presence of a parent/no parent) with criminal associations; parental factors (parental rejection, parental attachment, parental supervision, presence of a parent/no parent) with self-esteem; criminal associations with criminal attitudes; criminal associations with each DSI facet (cognitive centrality, in-group affect and in-group ties), self-esteem with each DSI facet (cognitive centrality, in-group affect and in-group ties), and each psychopathy facet (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) with each DSI facet (cognitive centrality, in-group affect and in-group ties). Since existing studies in the area are predominantly adult male based, the present chapter focused on a mixed gender sample of youth offenders in order to expand the existing scholarship. It is envisaged that this will have a valid contribution towards the development of psychological offender behaviour programmes.

5.2 METHOD

5.2.1 Sample

In total five hundred and thirty six (N = 536) of youth offenders were included in the current analysis, comprising of n = 348 (64.9%) males (age range from 12 to 17 years, M = 15.28, SD = 1.10, Mdn = 15, and Mode = 15) and n = 188 (35.1%) females (age range from 12 to 17 years, M = 15.23, SD = 1.19, Mdn = 15, and Mode = 15).

For males, 128 (36.8%) participants were living with one parent, 90 (25.9%) living in a care home, 60 (17.2%) living with both parents, 36 (10.3%) living in foster care, 18 (5.2%) living with grandparents, 8 (2.3%) living without parents and 8 (2.3%) living with step parents. For females, 75 (39.9%) participants were living with one parent, 47 (25%) living in a care home, 26 (13.8%) living with both parents, 18 (9.6%) living in foster care, 16 (8.5%) living with grandparents, 4 (2.1%) living without parents and 2 (1.1%) living with step parents.

5.2.2 Procedure

Survey booklets were produced and delivered to the youth offending teams. Youth offender managers were trained in the delivery of the surveys by means of a structured interview that took place in a standard one to one session. The youth offenders were provided with an information sheet, whereby the nature and purpose of the study was clarified, and a consent sheet informing of anonymous data collection and how to withdraw from the study. It was made clear both in the consent form and verbally that participation was voluntary, without any form of reward. The survey booklets were collected by the researcher, who inputted the data.

5.2.3 Materials

The following measures were incorporated in the survey booklet: The Measure of Delinquent Social Identity (MDSI), Self-Esteem Measure for Delinquents (SEM-D) is adapted from the SEM-C (Debowska et al., 2017), The Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999), Attitudes towards in-group and out-group members, Peer Rejection (Mikamiet al., 2005), Parental attachment (Ingram et al., 2007), Parental Supervision (Ingram et al., 2007), Psychopathic Personality Traits Scale (PPTS; Boduszek et al., 2016c), and a demographics questionnaire. Please refer to the methodology chapter (chapter three, sections 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 3.3.7, 3.3.8 and 3.3.9) for detailed information about the aforementioned measures.

5.2.4 Analysis

An independent samples t-test was used to compare mean scores between males and females on all continuous variables. Cohens d (Cohen, 1988) was used to calculate the size of the effect. According to Cohen (1988) a small effect is 0.2, a medium effect is 0.5 and a large effect is 0.8 and above.

In the current chapter, the IPM-CSI model was tested via path analysis in MPlus version 7.11. The following statistics were used to assess the fit between the data and pre-established theoretical model: Chi Square (χ^2), Tucker Lewis Index (TLI; Tucker & Lewis, 1973), Root-Mean-Square Error of Approximation (RMSEA; Steiger, 1990) with 90% confidence interval (90% CI), Root Mean-Square Residual (RMSR) and Comparative Fit Index (CFI; Bentler, 1990). For a good model, the Chi square should be non-significant (Kline, 2005) and CFI and TLI values above .95 (Hu & Bentler 1999; Vandenberg 2002). However, CFI and TLI, values above .90 indicate adequate fit (Bentler 1990; Hu & Bentler 1999). RMSEA and RMSR values less than .05 suggest good fit and values up to .08 indicate reasonable errors of approximation

in the population (Browne & Cudeck 1989). Regression weights indicate the direction and strength of the relationship with higher values representing a stronger relationship.

5.3 RESULTS

5.3.1 Descriptive statistics

Descriptive statistics, including means (*M*) and standard deviations (*SD*) for the three MDSI factors, Criminal friend index, Criminal Attitudes, Self-esteem, Peer Rejection, Parental Attachment, Parental Supervision and the four PPTS factors are presented in Table 5.1.

Males scored higher than females on all three facets of MDSI cognitive centrality suggesting that male youth offenders have stronger criminal cognitions, loyalty and emotional attachments towards delinquents than females. Males scored higher than females on both CFI and criminal attitudes, indicating that male youth offenders develop stronger relationships with criminal friends and have stronger criminal attitudes than females. Males also scored higher than females on parental supervision suggesting that male youth offender's parents have more involvement in their child's life than female's parents do. In contrast, females scored higher than males on parental attachment indicating that, despite parents having less involvement, female youth offenders form stronger attachments to their parent(s) than male youth offenders. Females also scored higher than males on self-esteem, indicating female youth offenders have a higher sense of self-belief and self-worth than males. Females scored slightly higher than males on rejection suggesting that female youth offenders face more rejection from classmates than male youth offenders.

Concerned with gender differences in psychopathy traits, males scored higher than females on affective responsiveness and interpersonal manipulation whereas females scored higher than males on cognitive responsiveness and slightly higher on egocentricity. Therefore suggesting that male youth offenders possess more manipulative tendencies and show more empathy than females. Whereas, female youth offenders tend to focus on their own beliefs,

attitudes and interests and are more likely than males to engage with others emotionally at a cognitive level.

5.3.2 Independent samples t-test

An independent t-test was conducted to compare the CFI, Criminal Attitudes, Self-esteem, Peer Rejection, affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity scores of males and females (see Table 5.1). There was a significant difference between both groups on CFI scores, $t(534) = 1.95$, $p < .05$, with males ($M = 19.72$, $SD = 5.54$) scoring higher than females ($M = 18.72$, $SD = 5.85$). The magnitude of the differences in the means of CFI (mean difference = .99, 95% CI: -.01 to 2) was small ($d = .18$). There was a significant difference between both groups on cognitive responsiveness scores, $t(534) = -1.93$, $p < .05$, with females ($M = 2.78$, $SD = 1.34$) scoring higher than males (M = 2.55, SD = 1.28). The magnitude of the differences in the means of cognitive responsiveness (mean difference = -.23, 95% CI: -.46 to .004) was small ($d = .18$).

5.3.3 Path analysis

Due to some significant differences between males and females being found path analysis was conducted separately for males and females. The fit of the proposed model for males was adequate, $\chi^2 (34) = 65.58$, $p < .001$, CFI = .95, TLI = .90, RMSEA = .07 (90% CI = [.05, .10]), RMSR = .05. The fit of the proposed model for females was adequate, $\chi^2 (34) = 64.10$, $p < .01$, CFI = .90, TLI = .80, RMSEA = .10 (90% CI = [.06, .13]), RMSR = .06. Table 5.2 presents the direct path regression weights for males and females. Figure 5.1 present the direct paths for males and figure 5.2 present the direct paths for females.

As can be observed, there was a significant positive correlation between egocentricity and cognitive centrality for both males ($\beta = .84$) and females ($\beta = .80$). There was a significant positive correlation between egocentricity and in-group affect for both males ($\beta = .87$) and

females (β = .82). There was a significant negative correlation between egocentricity and in-group ties for both males (β = -.25) and females (β = -.28). There was a significant positive correlation between interpersonal manipulation and in-group affect for males (β = .08), however, interpersonal manipulation significantly correlated with in-group ties for females (β = .21). There was a significant negative correlation between cognitive responsiveness and in-group ties for both males (β = -.25) and females (β = -.18). There was a significant positive correlation between affective responsiveness and in-group ties for females (β = .25) but no significant relationships were identified between affective responsiveness and any of the three MDSI factors for males.

There was a significant positive correlation between CFI and in-group ties for males (β = .15) but no significant relationships were identified between CFI and DSI for females. There was a significant negative correlation between self-esteem and cognitive centrality for males (β = -.13). However, a significant positive correlation was identified between self-esteem and in-group ties for both males (β = .42) and females (β = .50).

There was a significant negative correlation between parental supervision and CFI for both males (β = -.19) and females (β = -.19). There was a significant negative correlation between living with a parent and CFI for females (β = -.20).

Table 5.1. Descriptive Statistics for males and females for the MDSI Factors, Criminal Friends Index, Attitudes, Self-esteem, Rejection, Parental Attachment and Parental Supervision

	Males					*Females*					
Variables	*M*	*SD*	*Mdn*	*Min.*	*Max.*	*M*	*SD*	*Mdn*	*Min.*	*Max.*	*t-value*
Cognitive centrality	13.79	2.97	14	5	20	13.61	3.10	14	5	20	0.66
In-group affect	13.86	2.65	14	5	20	13.69	2.78	14	5	20	0.72
In-group ties	14.57	3.02	15	5	20	14.30	3.14	15	5	20	0.99
Criminal Friends Index	19.72	5.54	20	4	33	18.72	5.85	19	4	33	1.95*
Criminal Attitudes	13.34	2.28	13	7	18	13.26	2.30	13	7	18	0.38
Self-esteem	15.55	2.76	15	7	22	15.76	2.68	16	7	22	-0.87
Peer Rejection	11.51	2.34	11	6	19	11.52	2.34	11	6	19	-0.02
Parental Attachment	19.69	5.92	18	9	36	19.71	6.24	18	9	36	-0.04
Parental Supervision	12.30	4.31	12	6	24	12.27	4.37	12	6	24	0.09
Affective Responsiveness	2.63	1.31	3	0	5	2.52	1.28	3	0	5	0.96
Cognitive Responsiveness	2.55	1.28	2	0	5	2.78	1.34	3	0	5	-1.93*
Interpersonal Manipulation	2.68	1.40	3	0	5	2.47	1.41	2	0	5	1.69
Egocentricity	3.18	1.35	3	0	5	3.19	1.23	3	0	5	-0.06

Note .* $p \leq 0.05$

Table 5.2. Direct regression weights (and Standard Errors) for males and females

	Males		*Females*	
Variables	*β*	*SE*	*β*	*SE*
Peer Rejection (REJ) ⇒ Self-esteem (SE)	.07	.13	-.01	.17
Parental Attachment (ATT) ⇒ Self-esteem	-.02	.12	-.15	.17
Parental Supervision (SUP) ⇒ Self-esteem	-.07	.08	-.03	.11
Living with parents (PAR) ⇒ Self-esteem	.01	.08	.12	.10
Living without parents (NO) ⇒ Self-esteem	-.09	.08	-.06	.10
Peer Rejection ⇒ Criminal Friends Index	-.18	.12	-.10	.17
Parental Attachment ⇒ Criminal Friends	.16	.12	-.05	.16
Parental Supervision ⇒ Criminal Friends	-.19**	.08	-.19*	.11
Living with parents ⇒ Criminal Friends Index	.09	.07	-.20*	.10
Living without parents ⇒ Criminal Friends	.08	.07	.07	.10
Criminal Friends Index ⇒ Criminal Attitudes	-.10	.08	.06	.10
Criminal Friends Index ⇒ Cognitive	.02	.04	-.02	.07
Criminal Friends Index ⇒ In-group Affect (A)	-.01	.04	-.02	.06
Criminal Friends Index ⇒ In-group Ties (T)	.15*	.07	.12	.09
Self-esteem ⇒ Cognitive Centrality	-.13*	.04	-.11	.07
Self-esteem ⇒ In-group Affect	-.03	.04	-.04	.06
Self-esteem ⇒ In-group Ties	.42***	.06	.50***	.08
Affective Responsiveness (AR) ⇒ Cognitive	.02	.04	.01	.07
Affective Responsiveness ⇒ In-group Affect	-.01	.04	.05	.06
Affective Responsiveness ⇒ In-group Ties	-.01	.06	-.25**	.09
Cognitive Responsiveness (CR) ⇒ Cognitive	.01	.04	-.04	.06
Cognitive Responsiveness ⇒ In-group Affect	.02	.04	-.01	.06
Cognitive Responsiveness ⇒ In-group Ties	-.25***	.06	-.18*	.08
Interpersonal Manipulation (IPM) ⇒	.07	.04	-.02	.07
Interpersonal Manipulation ⇒ In-group Affect	.08*	.04	.04	.06
Interpersonal Manipulation ⇒ In-group Ties	.06	.06	.21*	.09
Egocentricity (E) ⇒ Cognitive Centrality	.84***	.03	.80***	.04
Egocentricity ⇒ In-group Affect	.87***	.02	.82***	.04
Egocentricity ⇒ In-group Ties	-.25***	.07	-.28**	.09

Note .* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

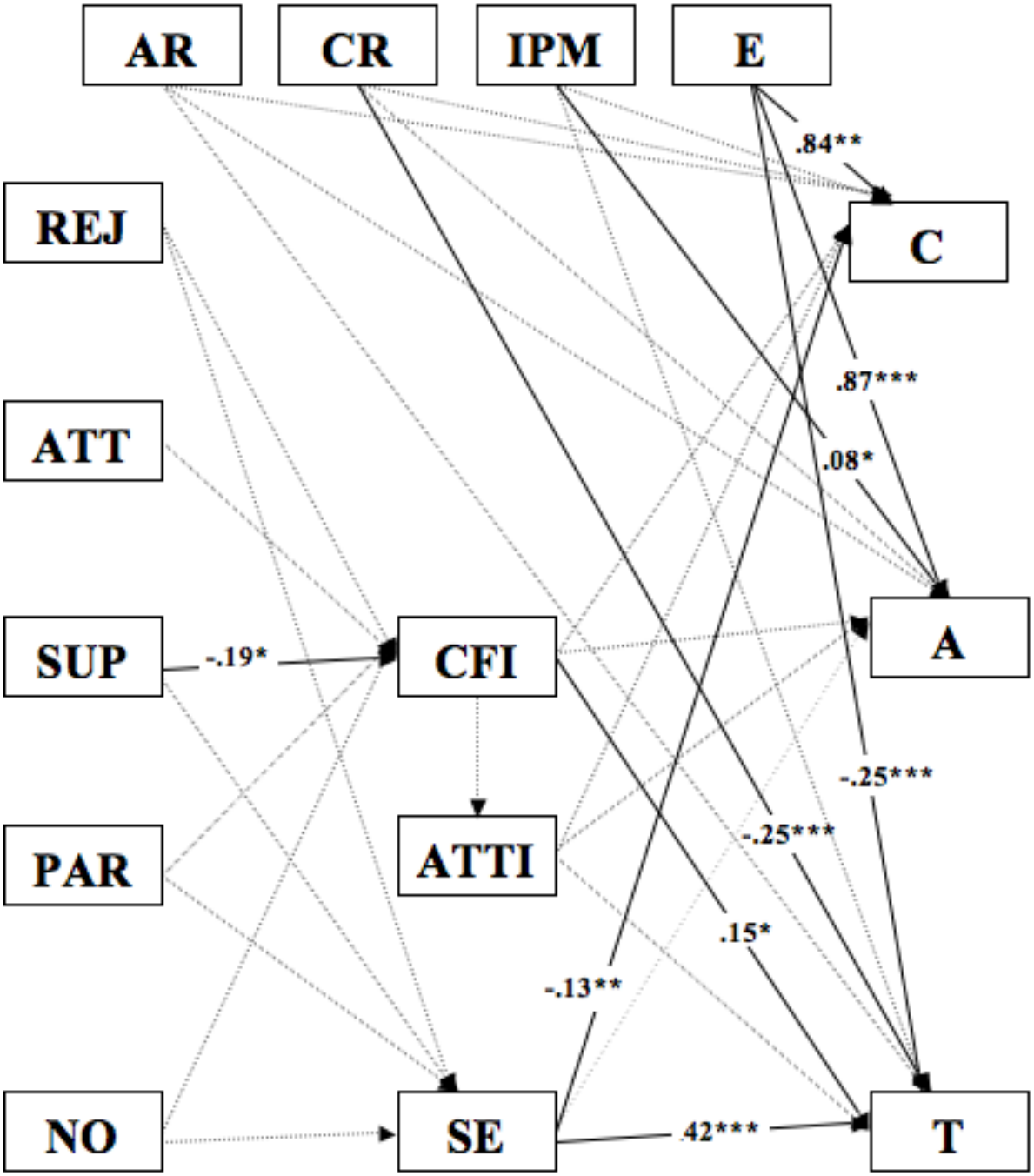

Figure 5.1. Path analysis of the MDSI for males (C = Cognitive centrality; A = In-group affect; T = In-group ties; CFI = Criminal Friends Index; ATTI = Criminal Attitudes; SE = Self-esteem; REJ = Rejection; ATT = Parental attachment; SUP = Parental supervision; PAR = Parent; NO = No parent; AR = Affective responsiveness; CR = Cognitive responsiveness; IM = Interpersonal manipulation; E = Egocentricity).

⟶ = significant correlation; ⋯▸ = non-significant correlation

* p < .05, ** p < .01, *** p < .00

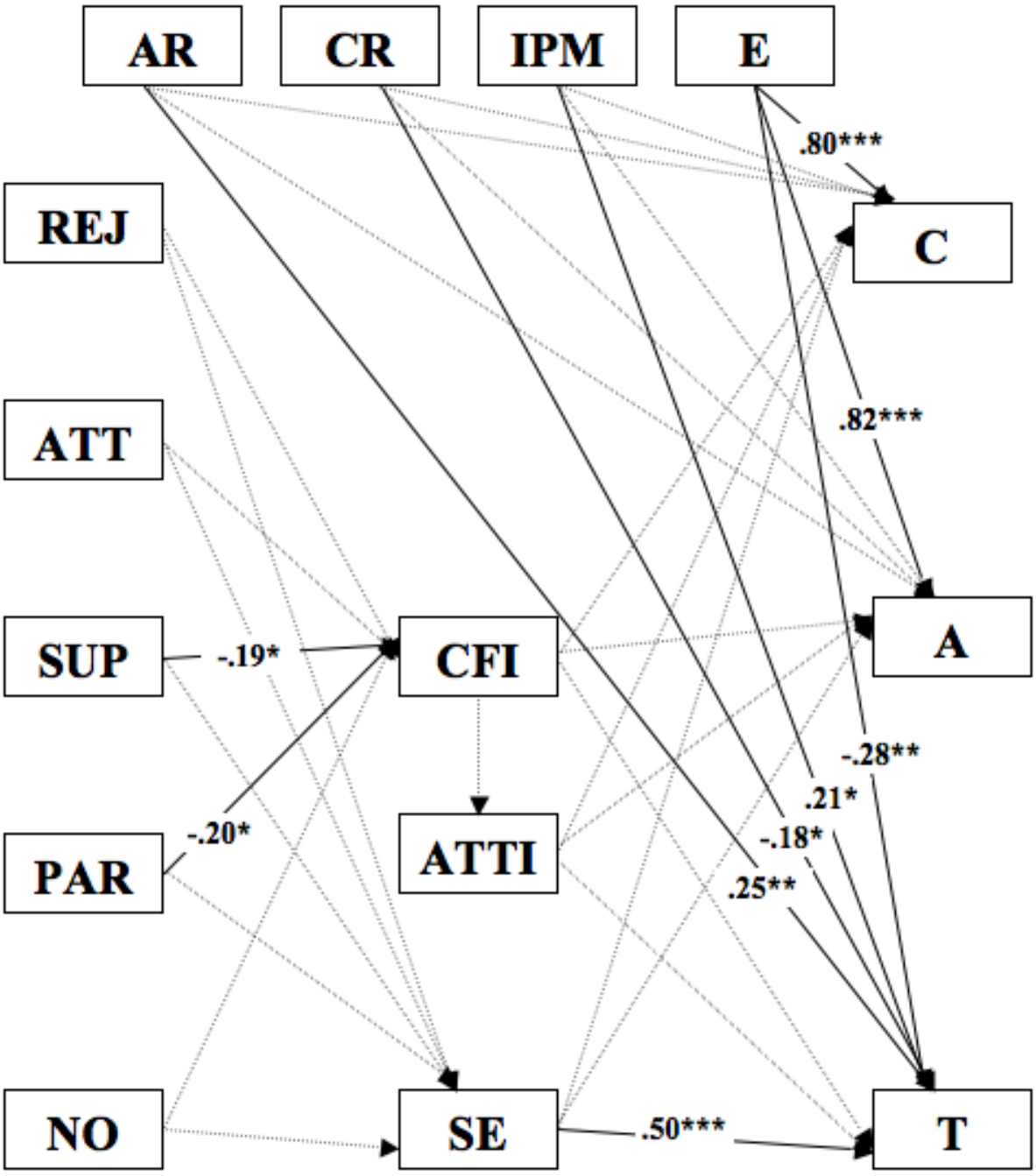

Figure 5.2. Path analysis of the MDSI for females (C = Cognitive centrality; A = In-group affect; T = In-group ties; CFI = Criminal Friends Index; ATTI = Criminal Attitudes; SE = Self-esteem; REJ = Rejection; ATT = Parental attachment; SUP = Parental supervision; PAR = Parent; NO = No parent; AR = Affective responsiveness; CR = Cognitive responsiveness; IM = Interpersonal manipulation; E = Egocentricity).

→ = significant correlation; ⇢ = non-significant correlation

* p < .05, ** p < .01, *** p < .00

5.4 DISCUSSION

The Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI; Boduszek et al., 2016a) was introduced as a theoretical explanation for the development of criminal social identity (CSI), however, research supporting this framework is scarce (Boduszek et al., 2012a; 2013b; Boduszek et al., 2016b; Sherretts et al., 2016). The present research is the first study to consider all of the components of the IPM-CSI in a single study. Further, research surrounding CSI has mainly focussed on adult male populations using a measure of CSI (MCSI; Boduszek et al., 2012c) devised for adults (Boduszek et al., 2012a; 2012b; 2013a). The present study aimed to fill the void in research by utilising a recently validated measure of delinquent identity devised for youth offenders (MDSI; please refer to chapter four) in a sample of mixed gender youth offenders. The findings are also impactive due to identifying the differences in the correlates of delinquent social identity (DSI) between females and males who offend. The main gender differences identified within the chapter surround the effect of psychopathy, criminal friend index (CFI) and self-esteem on DSI, and the effect of presence of a parent on CFI.

First, the effect of four psychopathic personality traits (affective responsiveness, cognitive responsiveness, interpersonal manipulation, and egocentricity) on DSI dimensions (cognitive centrality, in-group affect, and in-group ties) was tested. Interpersonal manipulation was found to significantly correlate with in-group affect for males and with in-group ties for females. This suggests that male youth offenders with increased grandiosity and manipulative tendencies are more likely to develop emotional attachments with other delinquents, whereas females with such tendencies are more likely to be loyal towards other delinquents. The latter is in support of research using mixed-gender samples (Sherretts et al., 2016), despite such research using a measure of psychopathy based on Hare's (2003) concepts (Paulhus, Newman, & Hare, 2015). Sherretts et al. (2016) proposed that the correlation between interpersonal manipulation and in-group ties is falsified through the individual influencing others'

perceptions in a bid to increase their own self-esteem. However, current findings show that females have marginally higher self-esteem scores than males suggesting that this relationship would be expected more in males, yet a weak non-significant correlation was identified between interpersonal manipulation and in-group ties among males. It is suggested that future research considers the moderating effect of self-esteem on the relationship between interpersonal manipulation and in-group ties.

Affective responsiveness was shown to significantly positively correlate with in-group ties for females. Among males, the relationship between affective responsiveness and DSI factors was statistically non-significant. This indicates that female youth offenders who lack empathy are more likely to develop loyal relationships with youth offenders. This is in line with prior research utilising a mixed-gender sample which found that the relationship between criminal associations and in-group ties was moderated by high levels of callous affect (Sherretts et al., 2016) and a characteristic of the callous affect facet is having low empathy. A stronger social identity has been associated with the development of group norms in terms of behaviours and attitudes (Hogg, 2001; Van Veelen, Otten, & Hansen, 2013). For example, criminal groups display rule breaking / illegal behaviour. It could therefore be predicted that possessing a strong delinquent social identity would result in delinquent behaviours by group members. Previous research indicates that females with deficits in affective traits are more likely to reoffend (Salekin et al., 1996) and the present chapter showed a link between affective traits and delinquent social identity. Thus, it could be suggested that there is a link between personality, delinquent social identity and delinquent behaviour. This notion is also supported by research indicating that individuals, particularly youth offenders, are more likely to offend if they lack victim empathy (Eysenck & McGurk, 1980). Further research is directed to explore the moderating effect of in-group ties on the relationship between affective responsiveness and reoffending.

Another psychopathy factor, egocentricity, was shown to have a positive effect on cognitive centrality and in-group affect and a negative effect on in-group ties for both males and females. This result indicates that youth offenders who centralise their own beliefs, attitudes and interests are more likely to have an increased identification and sense of belonging with other delinquents. Findings also indicate that youth offenders who tend to focus on their own beliefs, attitudes and interests are less likely to show loyalty towards other delinquents. This may be because they feel threatened by other delinquents and need to maintain their power within a group.

The model for males did not differ greatly from the model for females in respect of cognitive responsiveness. More specifically, cognitive responsiveness was shown to negatively affect in-group ties, indicating that youth offenders who are able to engage with others emotionally at a cognitive level have decreased loyalty towards other youth offenders. As research surrounding psychopathy and CSI has focussed on Hare's (2003) model of psychopathy, which does not distinguish between affective and cognitive components of responsiveness to others (e.g., Sherretts et al., 2016), it is difficult to compare the current result with prior research findings. In considering the differential associations between affective and cognitive responsiveness and DSI dimensions demonstrated in the present investigation, it is recommended that more future research in the area employs PPTS to assess psychopathy.

The present chapter indicates that interventions should target different psychopathic personality traits among females and males in order to decrease the likelihood of developing a delinquent social identity and, in turn, committing offences. For example, interventions for males should focus on reducing grandiosity and manipulative behaviours in order to prevent or reduce positive feelings towards offending groups and other offenders. Interventions for females should target increasing empathic concern for others in order to prevent or reduce emotional connections towards other offenders. For both genders, interventions should focus

on increasing selflessness to prevent or reduce criminal cognitions and positive feelings towards other offenders.

CFI was shown to significantly correlate with in-group ties for males, but a non-significant relationship was identified between CFI and DSI for females, indicating that associations with criminal friends may increase the loyalty towards other delinquents for males only. This is in line with previous research focussing on male samples (Boduszek et al., 2012a; Boduszek et al., 2016b). Given that the present chapter has highlighted lacking empathy is correlated with loyal relationships only for females, it suggests that males form loyal relationships through other means. It may be that interventions targeting reducing criminal associations would be more beneficial to males, however, further research is required to support this.

Self-esteem was positively correlated to in-group ties for males and females, but also negatively correlated to cognitive centrality in males. Although in light of this finding it appears that interventions aimed at increasing self-esteem would be especially beneficial for males, care must be taken when designing such programmes because they may also have a negative impact on other aspects of delinquent social identity. For example, in line with existing research (Boduszek et al., 2012a; Boduszek & Debowska, 2017), the present chapter shows that both males and females with higher levels of self-esteem are more likely to develop loyal relationships with other youth offenders. It is therefore important to acknowledge the strengths and weaknesses of increasing self-esteem in interventions. Although previous theories (Differential Reinforcement Theory; Aker's, 1979; 1985) suggest that associations with criminal friends stem from exposure to a criminal environment during the process of an identity crisis when self-esteem levels are lower (Downs & Rose, 1991; Juvonen, 1991; Parker & Asher, 1987), the present findings open up the opportunity to explore whether males and females have different experiences during the identity crisis and whether the onset of such

varies between genders. A longitudinal study would also allow the temporal relationship between the three factors to be explored to establish whether delinquent social identity increases or decreases self-esteem to support or contrasts with existing theory (Social Comparison Theory; Festinger, 1954) and research (Ellemers et al., 1999; Juvonen, 1991; Tajfel, 1978).

The model for males did not differ from the model for females in respect of the relationship between parental supervision and CFI. In line with existing research (Boduszek et al., 2012a), the present findings revealed a significant negative correlation between parental supervision and CFI indicating that the involvement of parents in childhood decreases the likelihood of developing criminal friends. This further supports Boduszek et al. (2012a) who emphasised that parental supervision has more importance in the relationship with offending than parental attachment. In addition, the presence of a parent during childhood had a negative effect on CFI but only for females. Thus, living with a parent during childhood decreases the likelihood of developing friendships with delinquents among females. This highlights the importance of providing support in sustaining living conditions with at least one parent among females in particular.

5.4.1 Limitations of current chapter and future directions

The present chapter is not without its limitations, which should be considered when noting the practical implications. A cross-sectional study design was implemented which restricted the ability to test the temporal order of the IPM-CSI. Longitudinal studies are therefore required to offer support to the temporal order. The sample consisted of youth offenders in the community within the Yorkshire area and so future research should explore whether the present results are generalisable across communities and settings. The present study aimed to limit response bias by the youth offender managers conducting structured interviews with the participants. Although this would limit some of the response bias, it did not

eradicate it, as some participants may still provide answers they think their offender manager wants to hear.

It is envisaged that, by contributing to the existing literature, the present chapter will allow advancements to be made within offender behaviour programmes. It is already evident that some offender behaviour programmes, for example Juvenile Enhanced Thinking Skills (JETS), incorporate cognitive behavioural skills related to DSI, such as managing criminal associates (negative influences). However, as the present chapter has identified, there are further specific areas that require targeting and this may differ depending on gender. The current findings provide empirical support for gender specific offender behaviour programmes.

5.4.2 Conclusions

This was the first study to examine the IPM-CSI (Integrated Psychosocial Model of Criminal Social Identity) in a single study. The research was also unique in that it acknowledged gender differences in the constructs of the IPM-CSI. For example, while a significant positive relationship was identified between interpersonal manipulation and in-group affect for males, a positive relationship was found between interpersonal manipulation and in-group ties for females. A significant negative relationship was identified between self-esteem and cognitive centrality for males only. Finally, females who lived with parents were less likely to associate with other offenders. The findings on gender differences are valuable to future theoretical and practical research.

CHAPTER SIX:

Criminal associations and Criminal Social Identity in a Sample of Community-Based Youth Offenders in the U.K: The Moderating Role of Psychopathic Traits

Abstract

Purpose – The aim of the present chapter was to explore the effects of each of the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation, and egocentricity) on the relationship between associations with other offenders and delinquent social identity.

Design/methodology/approach – Adopting a cross-sectional structured interview design, the opportunistic sample of 536 offenders based at community YOTs. All participants took part in a structured interview delivered by their youth offender manager. Moderated regression analyses were conducted to explore the moderating role of four psychopathy factors in the relationship between criminal friend index and each of the three facets of DSI (cognitive centrality, in-group affect, and in-group ties), while controlling for gender and age. Simple slopes for the relationship between criminal friend index and DSI, were investigated for low, medium, and high levels of psychopathic traits (affective responsiveness, cognitive centrality and egocentricity).

Results – Findings revealed the relationship between criminal friends index and cognitive centrality was stronger with decreased levels of cognitive responsiveness and egocentricity. The relationship between criminal friends index and in-group affect was stronger with decreased levels of cognitive responsiveness and egocentricity and increased levels of affective responsiveness. Finally, the relationship between criminal friends index and in-group ties was stronger with increased levels of affective responsiveness.

Conclusions/limitations/implications – The present chapter contributed to the theoretical underpinnings of interventions programmes. It is recommended that future research utilise a larger or more proportionate sample in order to consider gender differences in the moderating role of psychopathy.

6.1 INTRODUCTION

6.1.1 Adolescent Personality and Identity Formation

Adolescence is a challenging time for children, as not only do they endure a process of identity formation but within this also adapt to profound changes in their personality traits (individual characteristics). Erikson's (1950) pioneering research and theory focuses on the processes that occur prior to and during adolescence. Much of Erikson's work is based on earlier Freudian theories. Erikson identified three aspects of identity that develop through interactions with others during development: the ego identity (self), personal identity (unique personal characteristics) and social/cultural identity (social roles adopted). Erikson (1994) details four distinct stages that occur up to adolescence. Erikson explains that the development of the child during these stages is highly dependent upon the way they are treated by others, mainly family. Within the first two years of life children learn to trust and have confidence in others, providing them with security. However, if the child is exposed to distrusting behaviours within the family and society, they are likely to be insecure and experience feelings of worthlessness. Over the next year or so, the child begins to learn the difference between right and wrong and develops self-esteem. Between the ages of three and five children develop an imaginative and curious mind. Erikson (1994) argues that from adolescence (ages 12 to 18), an individual's development is dependent upon how they choose to behave as opposed to earlier in life when their development was mainly influenced by the way they were treated. During adolescence, an individual explores different identities, balancing a need to 'fit in' with their moral compass. This difficulty in defining their identity is referred to as an 'identity crisis' (Erikson, 1959; Waterman, 1985). Feelings of frustration and stress are exhibited during this process (Higgins, 1987; Salovery & Rodin, 1984), in line with the Strain Theory by Agnews (1993). In some cases, children delay their development into adulthood by avoiding life responsibilities, e.g. employment and financial development (Erikson, 1994).

Within these early development stages, as early as the first few years of life, personality development begins and personality traits emerge (McAdams & Olson, 2010). Classic theories view personality as genetically inherited and not susceptible to environmental influences, meaning personality traits do not change over time (McCrae et al. 2000). More recent theorists describe personality as dynamic and influenced by changes in one's life, particularly the transition between different roles and social changes (Lewis, 2001; Roberts, Wood, & Smith, 2005). Research surrounding the stability of personality traits identifies that some levels of continuity are seen in children after the age of three and the level of stability then increases in a relatively linear manner through adolescence and early adulthood (Lewis, 2001). As outlined above, during adolescence there are significant developments in one's identity and thus significant changes to one's personality would be expected (Arnett, 2000). In support of personality not stabilising until later in life, Costa and McCrae (1994) suggest that personality traits tend to be fixed after the age of thirty. The research surrounding personality stability and change has been critiqued for being restricted to adult samples and not testing a comprehensive set of personality traits to characterise young children (Caspi, Roberts, & Shiner, 2005).

6.1.2 Associations between Personality and Behaviour

Individual personality traits are believed to be associated with specific outcome behaviours depending on the level of personality trait an individual possesses. Concerned with negative outcome behaviours, research suggests that a high level of openness to experience can lead to risky behaviour, such as drug taking (Ambridge, 2014). Similarly, extraverts are less susceptible to pain and punishment, tend to display lower levels of anxiety and fear, and need a higher level of stimulation to arouse them (Boduszek et al., 2012b). Low levels of conscientiousness (flexibility and spontaneity) are associated with unreliability (Toegel & Barsoux, 2012). High levels of agreeableness (cooperation ad compassion), in turn, can result in submissive behaviour where they may be easily led. Conversely, those with low levels of

agreeableness (competitive and challenging) can often engage in arguments (Toegel & Barsoux, 2012). Low levels of neuroticism are linked with unstable and insecure behaviours, yet high levels of neuroticism can lead to poor psychological wellbeing (Dwan & Ownsworth, 2017). Longitudinal studies indicate that neuroticism and agreeableness are the strongest and most consistent personality predictors of conflict and abuse (Karney & Bradbury, 1995). The above findings suggest that low and/or high levels of certain personality traits can result in negative outcome behaviours. However, some research is critiqued for considering the personality traits in isolation from one another, in spite of the fact that the interplay between different personality traits is pertinent (Allpot, 1973; Asendorpf, Borkenau, Ostendorf, & Van Aken, 2001; Wiggins, 1979).

Research has also explored the link between personality traits and criminal/antisocial behaviour. For example, Heaven (1996) identified that the best predictors of interpersonal violence, criminal damage and theft are the excitement-seeking aspect of extraversion and the trust element of agreeableness. Heaven, Caputi, Trivelion-Scott, & Swinton (2000) identified that psychoticism had significant direct effects on youth offending but also indirect effects through positive attitudes to delinquent companionship. Studies are generally consistent in that psychoticism is the strongest personality predictor of youth offending (Levine & Jackson, 2004; Mak, Heaven, & Rummery, 2001; Walker & Gudjonsson, 2006). Youths who exhibit psychoticism traits, particularly callousness and lack of emotional awareness, are more likely to offend in groups and be leaders of a group of offenders or gang (Ray, Thornton, Frick, Shulman, Steinberg, & Cauffman, 2016).

6.1.3 Peer Group and Social Identity Development

As aforementioned, developing a social identity in childhood is a key aspect of the self-concept (i.e. beliefs and attributes; Baumeister, 1999). The Social Identity Theory (Tajfel &

Turner, 1979) forms the basis of the group processes that shape formation of a social identity. All humans seek to achieve a social identity as they have an internal need to belong somewhere within society and being part of a group fulfils this need (Baumeister & Leary, 1995). This is of particular importance to adolescents going through a time of physical, emotional and cognitive changes, who require the emotional support that being part of a group can offer (Coles, 1995). Adolescents tend to explore different social groups and settle on one or more social identities. Dependent on how many social identities they form, results in the level of social identity complexity (Roccas & Brewer, 2002). At birth, children are ascribed to certain categories, such as gender and age. They are further placed into categories due to their achievements, such as ability classes and sports teams. This is where children begin to learn to distinguish between different groups with distinct characteristics and classify themselves into such groups (see Self-Categorisation Theory; Turner et al., 1987; Turner et al., 1994). While self-classification to a particular group is something chosen by the child, all groups which they are part of become salient to them during early adolescence (Kinket & Verkuyten, 1999).

It is also suggested that being part of a group and having a positive outlook on that group has the benefit of increasing self-esteem (Rubin & Hewstone, 1998). These positive evaluations are enhanced through social comparisons (favouring respective group members [in-group] to other social groups' members [out-group]; Ellemers et al., 1999; see Social Comparison Theory; Festinger, 1954; Tajfel & Turner, 1979). Research suggests that it is the salience and status of the group which affects how attached someone may feel within the group and the level of identification with that group (Brewer, Manzi, & Shaw, 1993; Ellemers, Spears, & Doosje, 1999; Tajfel, 1981; Dick, Wagner, Stellmacher, & Christ, 2005). Thus, being part of a group that is viewed positively by society, elicits positive feelings and fulfils individuals' needs in achieving a positive social identity (Ellemers et al., 1999).

Some children find it difficult to associate with a pro-social group (e.g., due to the lack of pro-social peers with whom they can connect) and may result in the development of an antisocial / criminal social identity (Jackson et al., 1996). The Integrated Psycho-social Model of Criminal Social Identity (IPM-CSI; Boduszek et al., 2016a) explores several factors that interplay to indicate how a criminal social identity is formed (for full description see Boduszek et al., 2016a). One of these factors is peer rejection. Research suggests that school failure is associated with rejection from other children and can result in the formation of antisocial groups by those rejected youths (Dishion, Patterson, Stoolmiller, & Skinner, 1991). Knight (1997) provides support for this premise identifying that children who fail at school are more likely to engage in rule-breaking and high-risk activities. Identifying with antisocial groups restores the self-esteem and sense of worth the rejected children would have felt through school failure and rejection (Sandstrom & Zakriski, 2004). While antisocial groups tend to be viewed negatively by society, a positive self-esteem and attachment to the new group is achieved by adopting a 'social creativity' strategy (comparing one's group to lower status groups so that it appears more positive; Tajfel, 1978).

A social identity is developed through socialising within the group and adapting, or completely changing, one's views, attitudes, and behaviours to fit with the new group (Hogg, 2001; Van Veelen et al., 2013). This can lead to the process of depersonalization, i.e., a shift from personal identity to social identity, resulting in individuals focusing on their identity as a group as opposed to a unique individual (Hogg & Smith, 2007). Some theorists argue that when not in the presence of other group members, the personal identity takes precedence and individuals drift in and out of the social identity (Interpersonal Social-Cognitive Theory of Self; Andersen & Chen, 2002). This leads to individuals only displaying group behaviours when in the presence of other group members (Turjeman et al., 2008). Conversely, it is argued

that because group behaviours are instilled in one's personal identity, the presence of others should not alter the individual's behaviour (Boduszek & Hyland, 2011; Zimbardo, 1970).

Studies on social identity development and behaviours in youths do not tend to differentiate between what a pro-social and antisocial identity is but tend to focus on the outcome behaviours (pro-social or antisocial) of the social identity adopted. Further, most studies conducted to date focused on pro-social groups, such as sports teams, fraternities/sororities and religious/ethnic groups (Bruner, Boardley, & Côté, 2014; Merrilees et al, 2013; Nezlek & Smith, 2005) and only some aspects of antisocial behaviour were explored within these studies. For example, studies highlight that the strength of social identity is pertinent to the commitment to the group and a strong identification with one particular group is likely to result in antisocial behaviour to out-group members, even among individuals belonging in pro-social groups (Bruner et al., 2014; Merrilees et al, 2013). Studies that have focused on antisocial groups tend to focus on offending groups yet there is little focus on youth offenders and precedence is given to adult offenders (Boduszek et al., 2012a; Boduszek & Debowska, 2017; Sherretts et al., 2016; Walters, 2003).

Studies utilising offender populations tend to refer to offenders possessing a criminal social identity (CSI; Boduszek & Hyland, 2011). Based on Cameron's (2004) measure of social identity, a CSI/DSI comprises of three dimensions: cognitive centrality (how pertinent the social identity is to one's self-concept), in-group affect (the degree of positive feelings towards the group and its' members) and in-group ties (the extent of the emotional connection and loyalty one has with the group) (Boduszek et al., 2012c). Given that associating with delinquent peers is described as the most robust predictor of youth offending (Monahan, Steinberg, & Cauffman, 2009), it is no surprise that research shows that associating with offenders has a direct positive effect on the development of social identity in juvenile settings (Boduszek et al.,

2016b). While behaviour is shaped to an extent by the social role(s) one possesses, it is argued that personal traits also contribute towards behaviour (Kuhn, 1960).

6.1.4 The effect of Personality traits on social identity formation

The interplay of personality traits is believed to affect one's ability to socialise and be accepted by peer groups (Caspi et al., 2005). While certain personality traits (agreeableness and extraverted) predict social competence, other personality traits (negative emotionality, low constraints) predict social incompetence. Those that are less socially competent or socially incompetent are more likely to find it difficult to be accepted by peers (Caspi et al., 2005). Caspi and Heberner (1990) suggest that youths associate with people that have similar personality traits to them, which reinforces initial tendencies and hinders personality development. This could explain why group norms are formed and behaviour is difficult to change.

Individuals who were rejected by their peers are more likely to form bonds with antisocial groups and display antisocial behaviour (Jackson et al., 1996; Knight, 1997). As psychopathic traits are seen as the strongest personality predictor of youth offending (Levine & Jackson, 2004; Mak et al., 2001; Walker & Gudjonsson, 2006), it is of no surprise that research surrounding the associations between personality and social identity focuses on the relationship between different psychopathic traits and criminal social identity. Direct relationships between psychopathic traits and social identity were presented in chapter four and have been identified in prior research using adult offending samples (Sherretts et al., 2016). Recent research has also considered the moderating effect of psychopathy on the relationship between period of confinement and criminal social identity (Boduszek et al., 2016b) and the moderating effect of psychopathy on the relationship between period of incarceration / criminal associations and criminal social identity (Sherretts et al., 2016). This suggests that

psychopathic traits moderate the effect of associations with other offenders and spending time in prison (which could be construed as similar predictors) on criminal social identity. Boduszek et al. (2016b) found that high levels of primary psychopathy (interpersonal and affective traits) moderated the relationship between time spent in prison and criminal social identity. However, as reported by Sheretts et al. (2016), only the callous affect facet of primary psychopathy moderated the relationship between criminal associations and in-group ties. This suggests that the two primary psychopathy facets should be treated as different entities. Sherretts et al. found that while period of incarceration was significantly positively correlated with criminal social identity when levels of interpersonal manipulation were high (1 *SD* above the mean) period of incarceration was significantly negatively correlated with criminal social identity when levels of interpersonal manipulation were low (1 *SD* below the mean). Worthy of note, Boduszek et al. (2016b) and Sherretts et al. (2016) utilised psychopathy measures based on Hare's (2003) concept of psychopathy, which has been critiqued for including behavioural factors – erratic lifestyle and antisocial/criminal behaviour – which appear to be an outcome of psychopathy, not a fundamental part of it (see Boduszek & Debowska, 2016 for a review).

6.1.5 Aims of the current chapter

Empirical evidence supporting the theoretical constructs of the development of an antisocial/delinquent social identity in youth offenders is negligible. As adolescence is the pertinent time for changes to identity and personality, it is key to further explore what factors contribute to developing a social identity with youth offenders. Although research supports a direct relationship between youths associating with offenders and developing a criminal social identity (Boduszek et al., 2016b; Monahan et al., 2009), it appears that this relationship is more complex than it may have initially appeared. Some support exists for the interaction between criminal associations and primary psychopathy resulting in an increased level of criminal social identity (Boduszek et al., 2016b; Sherretts et al., 2016). However, the effect of psychopathy on

this relationship has only been tested in a South Asian juvenile population and using a psychopathy measure indexing criminal behaviour (Boduszek et al., 2016b). It is therefore important to explore the effect of pure psychopathic personality traits in the development of a delinquent social identity. Furthermore, the present chapter is culturally distinct from previous research as it focuses on youth offenders in the UK. The previous chapter showed that the relationship between criminal associations and criminal social identity was only significant for in-group ties and only in the male sample. The previous chapter also showed that there were differences in the significance of the relationship between different psychopathy facets and different criminal social identity facets, suggesting that different psychopathy facets have a different effect upon criminal social identity. The present chapter aimed to explore the moderating effects of each of the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation, and egocentricity) on the relationship between associations with other offenders and delinquent social identity among community youth offenders from the UK.

6.2 METHOD

6.2.1 Sample

The sample comprised of *n* = 348 (64.9%) males (age range from 12 to 17 years, *M* = 15.28, *SD* = 1.10, *Mdn* = 15, and Mode = 15) and *n* = 188 (35.1%) females (age range from 12 to 17 years, *M* = 15.23, *SD* = 1.19, *Mdn* = 15, and Mode = 15).

6.2.2 Procedure

The youth offender managers conducted structured interviews with the youth offenders as part of their one to one sessions. They identified to the youth offenders that participation was voluntary, they had a right to withdraw and data was anonymous to the researchers and in any written work. The interviews were formatted on the survey booklets that were provided to the individual youth offending teams. They were then collected and the data inputted and analysed.

6.2.3 Materials

The following measures were incorporated in the survey booklet: The Measure of Delinquent Social Identity (MDSI), The Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999), Attitudes towards in-group and out-group members, Psychopathic Personality Traits Scale (PPTS; Boduszek et al., 2016c), and a demographics questionnaire. Please refer to the methodology chapter (chapter three, sections 3.3.1, 3.3.5, 3.3.6, 3.3.8 and 3.3.9) for detailed information about the aforementioned measures.

6.2.4 Analysis

Moderated regression analyses were applied in order to explore the moderating role of four psychopathy factors (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) in the relationship between criminal friend index and each of

the three facets of DSI (cognitive centrality, in-group affect, and in-group ties), while controlling for gender and age. Simple slopes analysis allows the significance of the moderating effect on the independent and dependent variable to be explored at different levels of the moderator variable. Simple slopes for the relationship between criminal friend index and DSI, were investigated for low (1 SD below the mean), medium (mean), and high (1 SD above the mean) levels of psychopathic traits (affective responsiveness, cognitive centrality and egocentricity) using ModGraph 3.0 (Jose, 2013). Only standardised solution was reported. For further information on moderated regression analyses and Modgraph please refer to methodology chapter (chapter two, sections 3.5.5 and 3.6.3).

6.3 RESULTS

Moderated regression analysis was conducted to investigate the moderating effect of four psychopathy dimension scores (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) on the relationship between criminal friends index and the three DSI facets (cognitive centrality, in-group affect and in-group ties). The results are presented in Table 6.1.

Table 6.1. Moderated Regression Analyses (β with 95% Confidence Intervals) with three outcome variables (Cognitive centrality, in-group affect and in-group ties)

Model and variable	*Cognitive centrality*	*In-group affect*	*In-group ties*
	Model 1		
CFI	.40*** [32, .47]	.43*** [.35, .50]	.29*** [.22, .37]
AR	-.18*** [-.25, -.10]	-.14*** [-.21, -.06]	-.19*** [-.27, -.11]
CR	.23*** [.16, .31]	.20*** [.13, .28]	.21*** [.13, .29]
IPM	-.03 [-.11, .04]	-.02 [-.10, .05]	-.01 [-.08, .07]
E	.06 [-.02, .13]	.08* [-.01, .15]	.12** [.04, .20]
	Model 2		
CFI	.37*** [.30, .45]	.40*** [.33, .48]	.28*** [.20, .36]
AR	-.20*** [-.27, -.12]	-.16*** [-.23, -.08]	-.20*** [-.28, -.12]
CR	.24*** [.16, .31]	.20*** [.12, .28]	.20*** [.12, .28]
IPM	-.05 [-.13, .02]	-.04 [-.12, .04]	-.03 [-.11, .06]
E	.10* [.02, .17]	.11** [.04, .19]	.14 *** [.06, .22]
CFI x AR	.06 [-.01, .16]	.09* [.02, .20]	.09* [.02, .20]
CFI x CR	-.09* [-.17, -.01]	-.08* [-.16, -.02]	-.08 [-.16, .01]
CFI x IPM	.03 [-.04, .10]	-.01 [-.09, .06]	-.03 [-.11, .05]

CFI x E	-.15*** [-.25, -.08]	-.12*** [-.23, -.06]	-.04 [-.13, .05]
	Model 3		
CFI	.37*** [.30, .45]	.40*** [.33, .48]	.28*** [.20, .36]
AR	-.19*** [-.27, -.12]	-.16*** [-.23, -.08]	-.20*** [-.28, -.12]
CR	.24*** [.17, .32]	.20*** [.12, .28]	.20*** [.12, .28]
IPM	-.05 [-.13, .02]	-.04 [-.12, .04]	-.03 [-.11, .06]
E	.09* [.02, .17]	.11** [.03, .19]	.14*** [.06, .22]
CFI x AR	.06 [-.01, .16]	.09* [.02, .20]	.09* [.02, .20]
CFI x CR	-.09* [-.16, -.01]	-.08* [-.16, -.01]	-.08 [-.16, .01]
CFI x IPM	.03 [-.05, .10]	-.01 [-.09, .06]	-.03 [-.11, .04]
CFI x E	-.15*** [-.25, -.08]	-.13*** [-.23, -.06]	-.04 [-.13, .05]
Age	-.05 [-.12, .02]	-.01 [-08, .06]	-.02 [-.10, .06]
Gender (male = 1)	.01 [-.13, .17]	.01 [-.14, .17]	-.02 [-.20, .12]

Note

** $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$*

CFI = criminal friend index; AR = affective responsiveness; CR = cognitive responsiveness; IPM = interpersonal manipulation; E = egocentricity

6.3.1 Moderated Regression Analysis with Cognitive Centrality as outcome variable

Moderated regression analysis was performed to investigate the moderating effect of four psychopathy dimensions scores on the relationship between criminal friends index and cognitive centrality while controlling for gender and age.

In the first step of the analysis, the main effects of five predictors (criminal friends index, affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) on cognitive centrality were explored. This model (Model 1; see model 1 in table 6.1) was statistically significant for cognitive centrality, $F(5, 530) = 40.25$, $p < .001$, ($R^2 = .28$). Criminal friends index (β = .40) and cognitive responsiveness (β = .23) were found to be significant positive predictors of cognitive centrality, whereas affective responsiveness was found to be a significant negative predictor of cognitive centrality (β = -.18).

In the second step of the analysis, four interaction terms were entered coding the interaction between criminal friends index and the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity). This model (Model 2; see model 2 in table 6.1) was statistically significant for cognitive centrality, $F(4, 526) = 26.04$, $p < .001$, ($R^2 = .31$). After the interaction terms were entered, an additional 3% of variance in cognitive centrality was explained compared to model 1. Alike in model 1, criminal friends index (β = .37), cognitive responsiveness (β = .24) and affective responsiveness (β = -.20) were significant predictors of cognitive centrality. Further, egocentricity was identified as being a significant positive predictor of cognitive centrality (β = .10). Interaction terms, criminal friends index by cognitive responsiveness (β = -.09) and criminal friends index by egocentricity (β = -.15) were significantly negatively correlated with cognitive centrality.

In the third step of the analysis, two covariates (gender and age) were added to model 2. This model (Model 3; see model 3 in table 6.1) was statistically significant for cognitive centrality, $F(2, 524) = 21.47$, $p < .001$, ($R^2 = .31$). After the interaction terms and covariates were entered, no additional variance in cognitive centrality was explained compared to model 2. Alike in model 2, criminal friends index (β = .37), cognitive responsiveness (β = .24), affective responsiveness (β = -.19) and Egocentricity (β = .09) were found to be predictors of cognitive centrality. Interaction terms were the same as in model 2, whereby interaction terms criminal friends index by cognitive responsiveness (β = -.09) and criminal friends index by egocentricity (β = -.15) were significantly negatively correlated with cognitive centrality. This indicates that the effect of criminal friends index on cognitive centrality depends on the level of cognitive responsiveness psychopathy factor and the level of egocentricity psychopathy factor.

In order to explore the moderating effect of cognitive responsiveness on the relationship between criminal friends index and cognitive centrality simple slopes for the relationship between criminal friends index and cognitive centrality were investigated for low (1 *SD* below the mean), medium (mean), and high (1 *SD* above the mean) levels of cognitive responsiveness (see Figure 6.1). Although criminal friends index was significantly positively associated with cognitive centrality for low (β = .46, *SE* = .05, $p < 0.001$), medium (β = .37, *SE* = .03, $p < 0.001$) and high levels (β = .28, *SE* = .05, $p < 0.001$) of cognitive responsiveness, the relationship between criminal friends index and cognitive centrality was stronger with decreased levels of cognitive responsiveness.

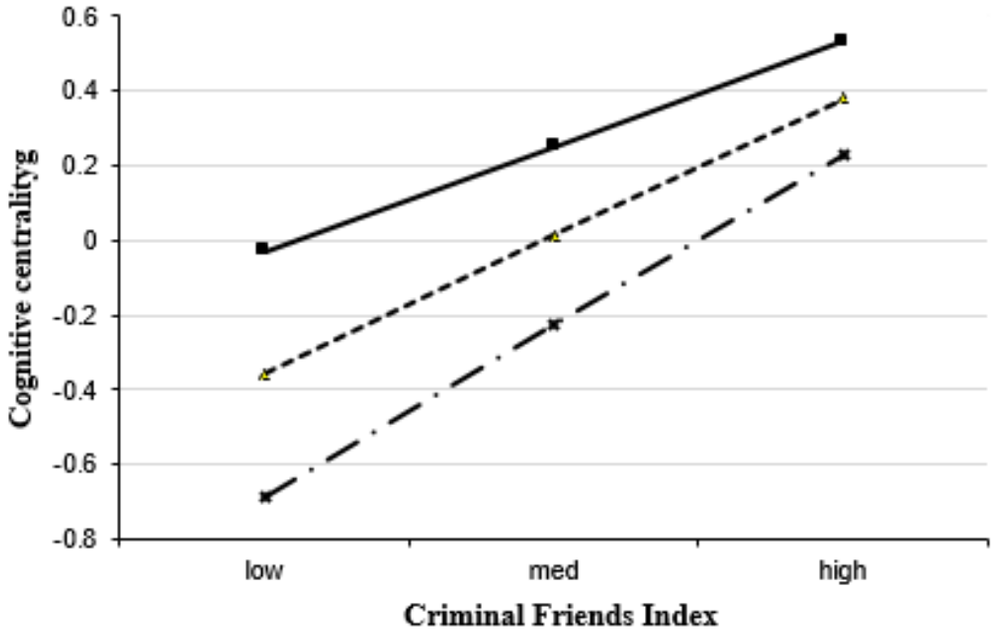

Figure 6.1. The moderating role of cognitive responsiveness in the relationship between criminal friends index and cognitive centrality. The solid line with square markers indicates high (+1 *SD*) cognitive responsiveness. The dotted line with triangle markers indicates medium (mean) cognitive responsiveness and the dashed line with cross markers indicates low (-1 *SD*) cognitive responsiveness. med = medium.

In order to explore the moderating effect of egocentricity on the relationship between criminal friends index and cognitive centrality, simple slopes for the relationship between criminal friends index and cognitive centrality were investigated for low (1 *SD* below the mean), medium (mean), and high (1 *SD* above the mean) levels of egocentricity (see Figure 6.2). Although criminal friends index was significantly positively associated with cognitive centrality for low (β = .52, *SE* = .05, $p < 0.001$), medium (β = .37, *SE* = .03, $p < 0.001$) and high levels (β = .22 *SE* = .05, $p < 0.001$) of egocentricity, the relationship between criminal friends index and cognitive centrality was stronger with decreased levels of egocentricity.

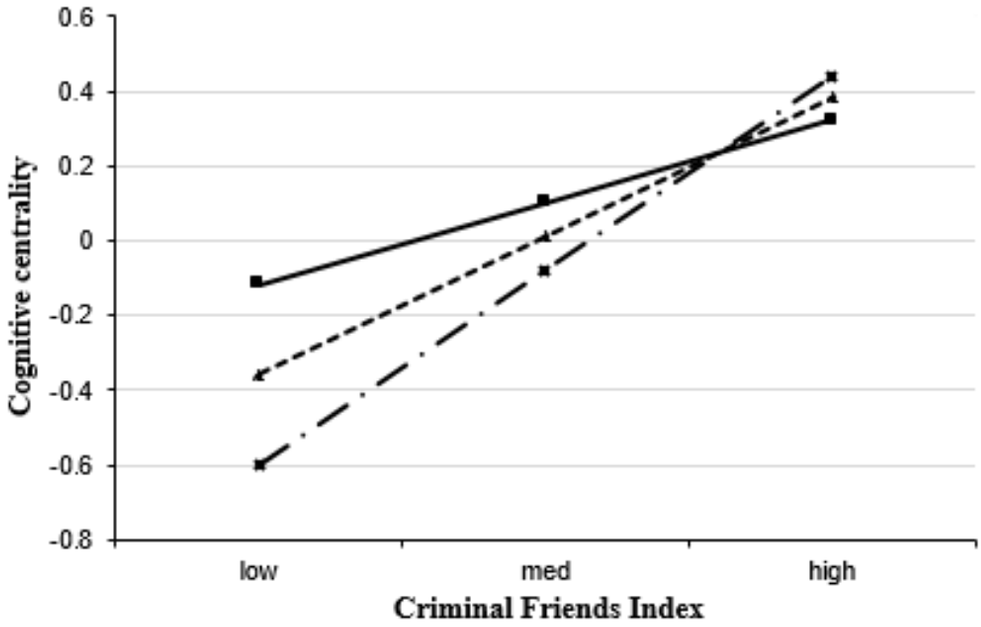

Figure 6.2. The moderating role of egocentricity in the relationship between criminal friends index and cognitive centrality. The solid line with square markers indicates high (+1 *SD*) egocentricty. The dotted line with triangle markers indicates medium (mean) egocentricity and the dashed line with cross markers indicates low (-1 *SD*) egocentricity. med = medium.

6.3.2 Moderated Regression Analysis with In-group Affect as outcome variable

Moderated regression analysis was performed to investigate the moderating effect of four psychopathy dimensions scores on the relationship between criminal friends index and in-group affect while controlling for gender and age.

In the first step of the analysis, the main effects of five predictors (criminal friends index, affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) on in-group affect were explored. This model (Model 1; see Table 6.1) was statistically significant for in-group affect, $F(5, 530) = 39.60$, $p < .001$, ($R^2 = .27$). Criminal

friends index (β = .43), cognitive responsiveness (β = .20) and egocentricity (β = .08) were found to be significant positive predictors of in-group affect, whereas affective responsiveness was found to be a significant negative predictor of in-group affect (β = -.14).

In the second step of the analysis, four interaction terms were entered coding the interaction between criminal friends index and the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity). This model (Model 2; see Table 6.1) was statistically significant for in-group affect, $F(4, 526) = 25.44$, $p < .001$, ($R^2 = .30$). After the interaction terms were entered, an additional 3% of variance in in-group affect was explained compared to model 1. Alike in model 1, criminal friends index (β = .40), cognitive responsiveness (β = .20), egocentricity (β = .11) and affective responsiveness (β = -.16) were found to be significant positive predictors of in-group affect. Interaction terms, criminal friends index by cognitive responsiveness (β = -.08) and criminal friends index by egocentricity (β = -.12) were significantly negatively correlated with in-group affect. Whereas, interaction term cognitive centrality by affective responsiveness was significantly positively correlated with in-group affect (β = .09).

In the third step of the analysis, two covariates (gender and age) were added to model 2. This model (Model 3; see Table 6.1) was statistically significant for in-group ties, $F(2, 524) = 13.73$, $p < .001$, ($R^2 = .30$). After the interaction terms and covariates were entered, no additional variance in in-group affect was explained compared to model 2. Alike in models 1 and 2, criminal friends index (β = .40), cognitive responsiveness (β = .20), egocentricity (β = .11) and affective responsiveness (β = -.16) were found to be significant predictors of in-group ties. Interaction terms were the same as in model 2, whereby interaction terms criminal friends index by cognitive responsiveness (β = -.08)

and criminal friends index by egocentricity (β = -.13) were significantly negatively correlated with in-group affect. Interaction term cognitive centrality by affective responsiveness was significantly positively correlated with in-group affect (β = .09). This indicates that the effect of criminal friends index on in-group affect depends on the level of cognitive responsiveness psychopathy factors, the level of affective responsiveness psychopathy factor and the level of egocentricity psychopathy factor.

In order to explore the moderating effect of cognitive responsiveness on the relationship between criminal friends index and in-group affect simple slopes for the relationship between criminal friends index and in-group affect were investigated for low (1 *SD* below the mean), medium (mean), and high (1 *SD* above the mean) levels of cognitive responsiveness (see Figure 6.3). Although criminal friends index was significantly positively associated with in-group affect for low (β = .48, *S*E = .05, $p < 0.001$), medium (β = .40, *SE* = .03, $p < 0.001$) and high levels (β = .32, *SE* = .05, $p < 0.001$) of cognitive responsiveness, the relationship between criminal friends index and in-group affect was stronger with decreased levels of cognitive responsiveness.

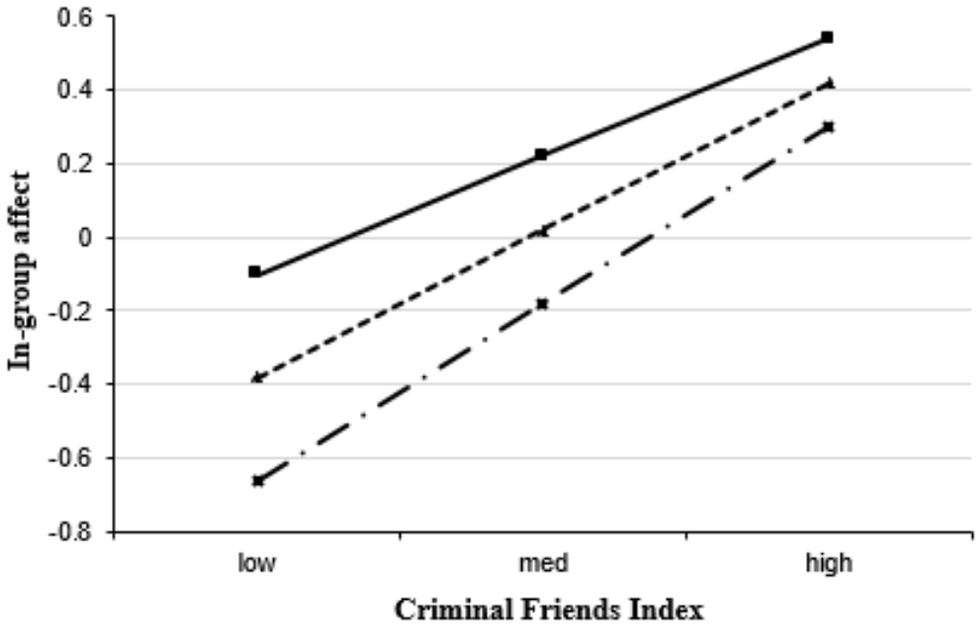

Figure 6.3. The moderating role of cognitive responsiveness in the relationship between criminal friends index and in-group affect. The solid line with square markers indicates high (+1 *SD*) cognitive responsiveness. The dotted line with triangle markers indicates medium (mean) cognitive responsiveness and the dashed line with cross markers indicates low (-1 *SD*) cognitive responsiveness. med = medium.

In order to explore the moderating effect of affective responsiveness on the relationship between criminal friends index and in-group affect, simple slopes for the relationship between criminal friends index and in-group affect were investigated for low (1 *SD* below the mean), medium (mean), and high (1 *SD* above the mean) levels of affective responsiveness (see Figure 6.4). Although criminal friends index was significantly positively associated with in-group affect for low ($\beta = .31$, $SE = .06$, $p < 0.001$), medium ($\beta = .40$, $SE = .03$, $p < 0.001$) and high levels ($\beta = .49$, $SE = .05$, $p < 0.001$) of affective

responsiveness, the relationship between criminal friends index and in-group affect was stronger with increased levels of affective responsiveness.

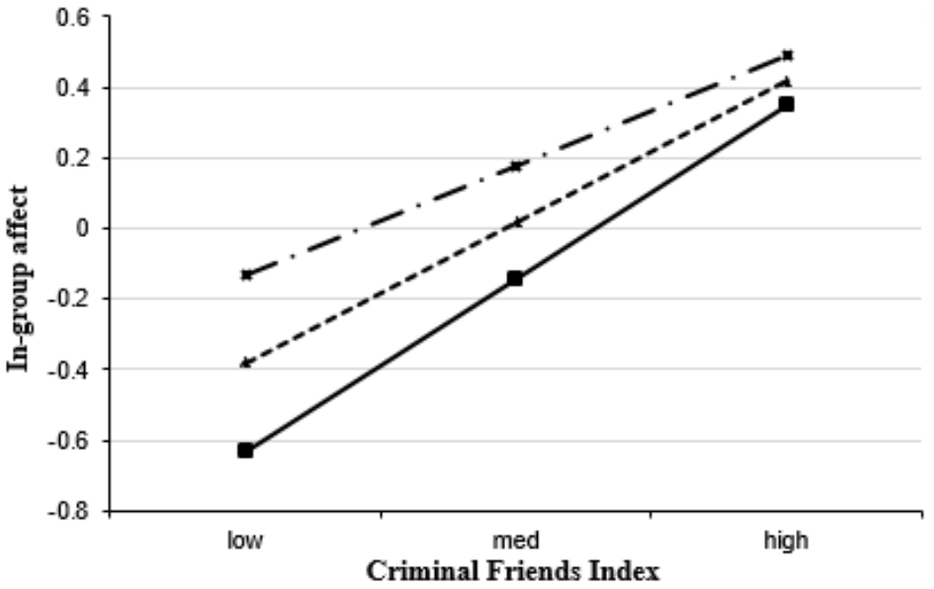

Figure 6.4. The moderating role of affective responsiveness in the relationship between criminal friends index and in-group affect. The solid line with square markers indicates high (+1 *SD*) affective responsiveness. The dotted line with triangle markers indicates medium (mean) affective responsiveness and the dashed line with cross markers indicates low (-1 *SD*) affective responsiveness. med = medium.

In order to explore the moderating effect of egocentricity on the relationship between criminal friends index and in-group affect, simple slopes for the relationship between criminal friends index and in-group affect were investigated for low (1 *SD* below the mean), medium (mean), and high (1 *SD* above the mean) levels of egocentricity (see Figure 6.5). Although criminal friends index was significantly positively associated with in-group affect for low ($\beta = .53$, $SE = .05$, $p < 0.001$), medium ($\beta = .40$, $SE = .03$, $p < 0.001$) and high levels ($\beta = .27$, $SE = .05$, $p < 0.001$) of egocentricity, the relationship between

criminal friends index and in-group affect was stronger with decreased levels of egocentricity.

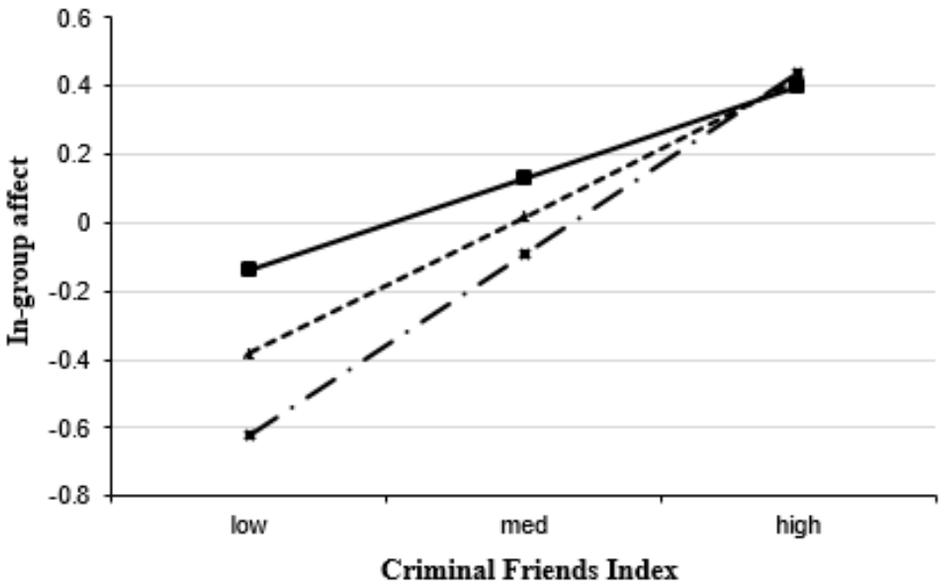

Figure 6.5. The moderating role of egocentricity in the relationship between criminal friends index and in-group affect. The solid line with square markers indicates high (+1 *SD*) egocentricity. The dotted line with triangle markers indicates medium (mean) egocentricity and the dashed line with cross markers indicates low (-1 *SD*) egocentricity. med = medium.

6.3.3 Moderated Regression Analysis with In-group Ties as outcome variable

Moderated regression analysis was performed to investigate the moderating effect of four psychopathy dimensions scores on the relationship between criminal friends index and in-group ties while controlling for gender and age.

In the first step of the analysis, the main effects of five predictors (criminal friends index, affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) on in-group ties were explored. This model (Model 1; see Table 6.1) was

statistically significant for in-group ties, $F(5, 530) = 27.40$, $p < .001$, ($R^2 = .21$). Criminal friends index (β = .29), cognitive responsiveness (β = .21) and egocentricity (β = .12) were found to be significant positive predictors of in-group affect, whereas affective responsiveness was found to be a significant negative predictor of in-group affect (β = -.19).

In the second step of the analysis, four interaction terms were entered coding the interaction between criminal friends index and the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity). This model (Model 2; see Table 6.1) was statistically significant for in-group ties, $F(4, 526) = 16.76$, $p < .001$, ($R^2 = .22$). After the interaction terms were entered, an additional 1% of variance in in-group ties was explained compared with model 1. Alike in model 1, criminal friends index (β = .28), cognitive responsiveness (β = .20), egocentricity (β = .14) and affective responsiveness (β = -.20) were found to be significant positive predictors of in-group affect. Interaction term cognitive centrality by affective responsiveness was significantly correlated with to in-group ties (β = .09).

In the third step of the analysis, two covariates (gender and age) were added to model 2. This model (Model 3; see Table 6.1) was statistically significant for in-group ties $F(2, 524) = 13.73$, $p < .001$, ($R^2 = .22$). After the interaction terms and covariates were entered, no additional variance in in-group ties was explained compared with model 2. Alike in models 1 and 2, criminal friends index (β = .28), cognitive responsiveness (β = .20), egocentricity (β = .14) and affective responsiveness (β = -.20) were found to be significant predictors of in-group ties. Interaction terms were the same as in model 2, whereby interaction term cognitive centrality by affective responsiveness was significantly positively correlated with in-group ties (β = .09). This indicates that the effect of criminal

friends index on in-group ties depends on the level of affective responsiveness psychopathy factor.

In order to explore the moderating effect of affective responsiveness on the relationship between criminal friends index and in-group ties simple slopes for the relationship between criminal friends index and in-group ties were investigated for low (1 *SD* below the mean), medium (mean), and high (1 *SD* above the mean) levels of affective responsiveness (see Figure 6.6). Although criminal friends index was significantly positively associated with in-group ties for low ($\beta = .19$, $SE = .06$, $p < 0.01$), medium ($\beta = .28$, $SE = .04$, $p < 0.001$) and high levels ($\beta = .37$, $SE = .06$, $p < 0.001$) of affective responsiveness, the relationship between criminal friends index and in-group ties was stronger with increased levels of affective responsiveness.

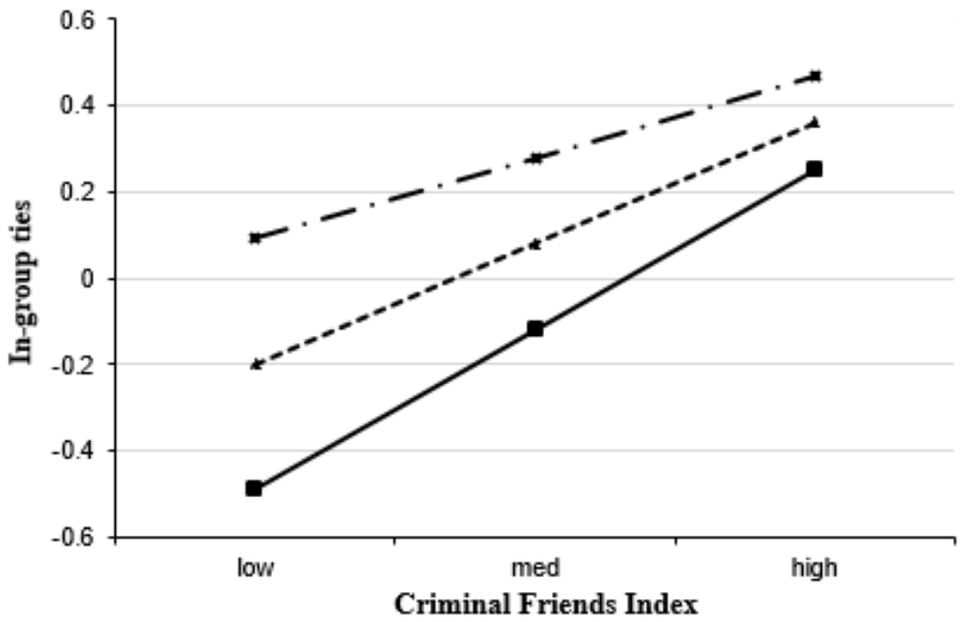

Figure 6.6. The moderating role of affective responsiveness in the relationship between criminal friends index and in-group ties. The solid line with square markers indicates high (+1 *SD*) affective responsiveness. The dotted line with triangle markers indicates medium (mean) affective responsiveness and the dashed line with cross markers indicates low (-1 *SD*) affective responsiveness. med = medium.

6.4 DISCUSSION

The previous chapter identified a significant relationship between criminal associations and the in-group ties facet of delinquent social identity (DSI) for males. The present chapter expanded on this by testing the moderating effect of psychopathy on the relationship between criminal association and DSI. Although few studies have focused on psychopathy influencing the relationship between predictors (time spent in prison / criminal associations) and criminal social identity (Boduszek et al., 2016b; Sherretts et al., 2016), the path of the IPM-CSI tested here (i.e. criminal associations – psychopathy – DSI) has not been tested before.

The previous chapter examined the relationships between criminal friends index and the three facets of DSI for males and female youth offenders. Findings showed that the relationship between criminal associations and criminal social identity was only significant for in-group ties and this was only significant for males. However, the present chapter identified a significant relationship between criminal associations and all three dimensions of DSI (cognitive centrality, in-group affect and in-group ties). Given that previous research (Sherretts et al., 2016) has highlighted that psychopathic traits have an effect on the relationship between criminal associations and criminal social identity, it would be expected that such traits also moderate the relationship between criminal associations and DSI, especially given that the Measure of Delinquent Social Identity (MDSI; please refer to chapter four) is based on the Measure of Criminal Social Identity-Revised (MCSI-R; Boduszek & Debowska, 2017).

As suggested by Sheretts et al. (2016) the primary psychopathy facets (interpersonal and affective traits) should be treated as separate entities from each other. While Boduszek et al. (2016b) identified that primary psychopathy scores moderated the relationship

between time spent in prison and CSI, Sherretts et al. (2016) suggested that only interpersonal traits moderate the relationship between criminal associations and in-group ties. In contrast, the present chapter identified that IPM was the only facet of psychopathy to *not* affect the relationship between criminal associations and any of the DSI facets. One explanation for this is that children can be manipulative, especially when it comes to striving to achieve goals (Underwood, 2003). As outlined in the identity crisis theory, manipulative behaviours would be more prominent in children who are striving to achieve a pro-social identity (Erikson, 1959; Waterman, 1985).

The present chapter highlighted that egocentricity and cognitive responsiveness moderated the relationship between criminal friends index and cognitive centrality. The relationship between criminal friends index and cognitive centrality was stronger with decreased levels of egocentricity and cognitive responsiveness. Thus, youth offenders with strong associations with other offenders tend to focus on the importance of their identity as an offender if they possess characteristics such as being emotionally aware and selfless. Conversely, emotionally shallow people associate and bond with other offenders as it assists in committing offences and they do not develop a change in identity on a cognitive level (Sherretts et al., 2016).

The present chapter highlighted that egocentricity, cognitive responsiveness and affective responsiveness moderated the relationship between criminal friends index and in-group affect. The relationship between criminal friends index and cognitive centrality was stronger with lower levels of egocentricity and cognitive responsiveness and higher levels of affective responsiveness. Thus, youth offenders with strong associations towards other offenders tend to portray positive feelings towards them if they possess an emotional awareness of others, the ability to engage with others on emotional level and are less self-

centered, yet lack empathy towards others. The present chapter also found that affective responsiveness influenced the strength of the relationship between criminal friends index and in-group ties. Affective responsiveness has similar traits to the callous affect facet of the psychopathy measure used in Sheretts et al. (2016) study. While psychopathy was not shown to have a significant effect on the relationship between criminal friends index and cognitive centrality and in-group affect, Sherretts et al. (2016) noted that only the callous affect facet of the four psychopathy dimensions (interpersonal manipulation, callous affect, erratic lifestyle and antisocial behaviour) had an effect on the relationship between criminal friends index and in-group ties. Sherretts et al. (2016) noted that the effect on in-group ties was only significant when levels of callous affect were high, whereas the present chapter identified that the effect of affective responsiveness on the relationship between criminal friends index and in-group ties was significant at all levels of affective responsiveness, albeit stronger when levels were higher. This indicates that youth offenders who associate with other offenders are more likely to develop an emotional connection with other offenders if they lack empathy.

On the surface it seems counterintuitive that offenders who lack empathy can develop an emotional connection with other offenders and portray positive feelings towards them. In line with Cooley's (1998) looking glass theory (the way people see themselves is how others see them) and Goffman's (1963, 1990) concept of impression management (influencing the perceptions of others), individuals may imitate concern towards other group members in order to be liked and accepted within the group. It would be expected that an individual would need a degree of manipulation skills to be successful in such calculating behaviour. However, the present chapter does not show that interpersonal manipulation moderates the relationship between criminal friends index and DSI. Existing research (Sherretts et al., 2016) does suggest that the relationship between period of

incarceration and in-group ties is stronger when levels interpersonal manipulation are high, indicating that forming a CSI for such individuals is an adaptation strategy (Blackburn, 2006), i.e. an attempt to increase their chance of survival in prison. Conversely, in the same study, when IPM levels were low, there was a negative effect on the relationship between period of incarceration and in-group ties (Sherretts et al., 2016), which places prominence on this factor of psychopathy. Perhaps affective responsiveness towards offenders (in-group members) and towards others (out-group members) should be tested separately rather than generally. For example, offenders who have more criminal friends and are affectively unresponsive to others, develop strong in-group affect because they do not feel for the victims of crimes that they commit.

Deficits in affective responsiveness could have developed due to the lack of a healthy emotional relationship with their primary caregiver(s). Studies have shown that a lack of temporal matching of affective behaviour between mother and child (i.e. mother-child synchrony; Reyna & Pickler, 2009) results in the child lacking empathy in adolescence (Feldman, 2007). In particular, maternal warmth and discussions around feelings during early childhood have been shown to encourage the development of empathy later in childhood (Garner, 2003; Zhou et al. 2002). The type of attachment formed between mother and child has also been shown to have an effect upon empathy expressed in adolescence. For example, secure attachments encourage empathic behaviour in children (Kestenbaum, Farber, & Sroufe, 1989; Mikulincer et al. 2001). The ability to empathise with others is important in developing a pro-social identity as associations have been shown between showing empathy and rule compliance and social competence (Aksan & Kochanska, 2005; Eisenberg & Miller, 1987; Waal, 2008).

6.4.1 Limitations of current chapter and future directions

The present chapter has provided some fruitful contribution to existing research by expanding the existing theories to the youth offender population. Yet the present chapter is not without its limitations. Although the surveys were completed in the presence of the YOT worker, there is still some opportunity for response bias as the youths do not have to be honest with their YOT worker and, in some respects, may tell them what they want to hear. In order to contribute to our understanding of gender differences in identity, future research would benefit from comparing the moderating psychopathy behaviours of males with females. This appears crucial, especially considering that the previous chapter showed differences between males and females in the direct relationships between psychopathy factors and DSI facets. Another limitation pertains to the sample used. Specifically, it consisted of youth offenders in the community within the Yorkshire area and so future research should explore whether the present results are generalisable across communities and settings.

The present chapter is beneficial in the development of offender behaviour programmes as it identifies risk factors to forming a delinquent social identity. For example, affective responsiveness forms part of the development of a delinquent social identity. Offender behaviour programmes focusing on increasing empathy are already in existence (e.g. Juvenile Enhanced Thinking Skills) and the present chapter provides further empirical support that this is the right approach. Further, it is suggested that offender behaviour programmes focus on deterring youths away from associating with other offenders to decrease the chances of forming a delinquent social identity. This could be achieved through encouraging the offenders to consider the positive and negative consequences of the influences that a person has on them and developing steps to achieve some distance

from that person. The present chapter indicates that youth offenders may falsify empathy to be accepted by the group and such programmes should aim to reduce manipulative behaviours by addressing the behaviour and making them aware of the negative effects of such. However, further research is required to support the finding that youth offenders possess increased manipulation skills in order to appear selfless and caring to others, and the benefits this has to the individual. The consequences of possessing a delinquent social identity should be explored in future research to identify the exact risks that lacking empathy and associating with other offenders may entail.

The present chapter considered psychopathic traits as a moderator between criminal associations and delinquent social identity, yet prior research suggests that personality affects the ability to form positive associations (Heaven et al., 2000; Toegel & Barsoux, 2012). Thus, future research would benefit from exploring the moderating effects of psychopathic traits on associations formed in childhood, for example, the influence of psychopathy on the relationship between parental attachment and criminal associations. This is important as research suggests that parental factors could affect the development of the child's personality.

6.4.2 Conclusions

The present chapter tested the moderating effect of psychopathic traits on the correlation between criminal friends index and delinquent social identity facets. Findings showed that all psychopathic traits apart from interpersonal manipulation moderated the relationship between criminal friends index and at least one of the constructs of delinquent social identity. These findings provided some fruitful contribution to the field of criminal psychology in community based youth offenders as this research has not been conducted in such a sample previously.

CHAPTER SEVEN:

Conclusion

7.1 OVERVIEW OF CHAPTERS, AIMS AND FINDINGS

7.1.1 Chapter one

Chapter one outlined an introduction to the research area by providing some background to the youth justice system. Statistical information pertaining to the percentage of youth offenders based in the community was presented. The introduction then focussed on the reoffending rates of youth offenders and rehabilitation/intervention programmes and their benefits. This provided a basis for the purpose of the present thesis to provide a theoretical background to be utilised for the development of new and/or adapted interventions programmes. Lastly, the introduction provided a clear set of research aims.

7.1.2 Chapter two

Chapter two provided a rapid evidence assessment of literature surrounding the correlates of criminal social identity (CSI). The purpose of this was to collate research surrounding the correlates of CSI using a systematic approach. The chapter initially focussed on the psychological and criminological theories surrounding the processes involved in social identity and criminal social identity. For example: the Social Identity Theory (Tajfel & Turner, 1979) and Self-Categorisation Theory (SCT; Turner et al., 1987; Turner et al., 1994) were discussed in relation to the developmental process of social identity. Discussions then focussed around failure to achieve a pro-social identity and the theory of criminal social identity (Boduszek & Hyland, 2011) and the more updated, Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI; Boduszek et al., 2016a) were outlined. The IPM-CSI was broken down into sections focussing on the four concepts of CSI; (1) an identity crisis that results in weak bonds with society, peer rejection,

and is associated with poor parental attachment and supervision; (2) exposure to a criminal/antisocial environment in the form of associations with criminal friends before, during, and/or after incarceration; (3) a need for identification with a criminal group in order to protect one's self-esteem and (4) the moderating role of personality traits in the relationship between criminal/antisocial environment and the development of CSI. Each section summarised the theoretical and empirical evidence to date supporting that concept. A discussion took place in relation to the developments in the measures of criminal social identity (MCSI; Boduszek et al., 2012c; MCSI-R; Boduszek & Debowska, 2017).

The aims and purpose of the rapid evidence assessment were outlined, followed by presenting the methodological processes involved (search strategy, selection process, data extraction and analysis). Eleven papers were identified from the rapid evidence assessment and their findings were reported. The results were presented in six sections based on the identified correlates of CSI that had been researched (identity crisis, exposure to criminal environment, self-esteem, personality, offending behaviour, suicidal ideation, and CSI as a moderator). Within each section, papers that had researched correlates within that area were presented including details on sample characteristics, measures utilised, procedure and a summary of findings. A table was also provided which provided a summary of each paper identified (author and year of publication, study population and method of data collection, correlates measured, measure of CSI, type of analysis, and findings). Many papers researched more than one correlate and therefore such papers were included in more than one of the six sections outlined above. The results identified one paper explored a correlate related with the identity crisis (parental supervision), nine papers explored correlates associated with exposure to criminal environment (criminal associations, prisonization/time spent in prison, and criminal attitudes), two papers explored self-esteem as a correlate, two papers explored personality correlates (psychoticism and psychopathy),

six papers studied correlates of offending behavior (number of incarcerations/arrest, violent offending and delinquent behaviour), one paper studied suicidal ideation as a correlate, and one study identified CSI as a moderator. The results showed a variety of populations, measures and procedures adopted in each of the studies making it difficult to compare findings.

The discussion focused around the four concepts detailed in the IPM-CSI (Boduszek et al., 2016a). Support was identified for an indirect relationship between a dysfunctional family and CSI. Support was provided for a relationship between criminal associations and CSI, however, suggest that the relationship may vary between genders. Inconsistent findings showed a difference in the direction of the relationship between self-esteem and CSI. Supporting research was identified to suggest that psychopathy moderates the relationship between criminal associations and CSI. CSI was also shown to have a positive impact on suicidal ideation as a higher CSI was related with lower suicidal ideation scores.

Limitations of the presented papers were discussed identifying that the majority of studies were cross-sectional, adult male focussed and based on offenders who were imprisoned. Recommendations for future research were suggested including adopting a longitudinal design, utilising female/mixed gender, juvenile, community-based samples, being consistent in the use of measures, considering the consequences of CSI, and expanding research on dysfunctional parenting, peer rejection, and societal bonds.

7.1.3 Chapter three

The present thesis prides itself on a robust methodology. Chapter three outlined the detailed methodology and explained statistical procedures to enable the reader to have a full understanding of the procedures used in the subsequent chapters.

Chapter three initially described and explained the research design (cross-sectional, survey/structured interview). Following this, the chapter provided background information on the general YOT population in the UK and the population of each of the five establishments where the research was undertaken (Barnsley, Bradford, Doncaster, Rotherham and Wakefield). The sampling procedure (opportunistic sampling) utilised was discussed prior to details been provided on the participants of the present chapter.

The next section provided detail on the materials used within the subsequent chapters (Measure of Delinquent Social Identity [detailed in chapter four]; Peer Rejection [Mikami et al., 2005]; Parental Attachment [Ingram et al., 2007]; Parental Supervision [Ingram et al., 2007]; The Measure of Criminal Attitudes and Associates [MCAA; Mills & Kroner, 1999]; Attitudes towards in-group and out-group member, Self-Esteem Measure for Delinquents [SEM-D; adapted from the SEM-C; Debowska et al., 2017]; and Psychopathic Personality Traits Scale [PPTS; Boduszek et al., 2016c]. A detailed procedure was outlined to allow the study to be replicated in future.

The analytical procedures used throughout the thesis were explained in chapter two (confirmatory factor analysis, confirmatory bifactor analysis, composite reliability, independent samples t-test, path analysis, and moderated regression analysis). Lastly, the statistical packages utilised (SPSS, MPlus, and Modgraph) in the data analysis were described.

7.1.4 Chapter four

The purpose of chapter three was to validate the measure of delinquent social identity (MDSI). The MDSI was adapted from the MCSI-R (Boduszek & Debowska, 2017) for use with juveniles. It was pertinent to validate the MDSI prior to conducting further research and analysis to ensure reliable and valid results were provided. The chapter

initially provided a background to social identity and criminal social identity before focus was drawn to outlining the limitations of the MCSI (Boduszek et al., 2016c). The MCSI-R's content and validation were discussed along with recommendations for further validation needs. It was important to discuss the developments in the measures and their strengths and limitations in order to provide justification for the development of the MDSI.

Within the methods section of chapter four, the sampling technique (opportunistic sampling) and sample characteristics were explained and the development of the MDSI was outlined. The 15 item MDSI was used to collect data from male (n = 348) and female (n = 188*)* juveniles based at five YOTs (Barnsley, Bradford, Doncaster, Rotherham and Wakefield). The construct validity of the MDSI was tested using confirmatory factor techniques and confirmatory bifactor analysis. Four alternative models of the MDSI were specified and tested using M*plus* version 7.4 (Muthén & Muthén, 1998-2015), with weighted least squares means and variance adjusted (WLSMV) estimation. The four models tested were: (1) a one-factor solution where all 15 MDSI items load onto a single latent factor of delinquent social identity; (2) a correlated two-factor solution where items load on cognitive centrality factor (items 1, 2, 3, 4 and 5) and affective traits (all remaining items) factor; (3) a correlated three-factor solution where items load on cognitive centrality factor (items 1, 2, 3, 4 and 5), in-group affect factor (items 6, 7, 8, 9 and 10), and in-group ties factor (items 11, 12, 13, 14 and 15); (4) a bifactor conceptualisation with one general factor of delinquent social identity and three subordinate factors described in Model 3.

The results showed that models (1) – (3) were rejected based on the RMSEA statistic and the bifactor model provided the best fit. Factor loadings were inspected for the three delinquent social identity factors and the majority of items loaded more strongly on each of the three delinquent social identity factors and less strongly on the general factor,

indicating that delinquent social identity is composed of three subscales while controlling for the general factor.

The Self-Esteem Measure for Delinquents (SEM-D; Debowska et al., 2017), the Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999), Peer rejection (Mikami et al., 2005) and Parental attachment (Ingram et al., 2007) measures were administered to the same sample. Regression analyses showed that the associations between external variables and the three delinquent social identity factors differed, providing further support that the three delinquent social identity factors ought to be treat as separate subscales.

Finally, composite reliability was calculated to assess the internal reliability of the measure of delinquent social identity factors. Findings showed that all three delinquent social identity factors and the general factor demonstrated good reliability.

7.1.5 Chapter five

Chapter five highlighted that previous research had explored the elements of the IPM-CSI. However, research had not explored all of the elements in one single study. The purpose of chapter five was to fill this void by testing the following associations: parental factors (parental rejection, parental attachment, parental supervision, presence of a parent/no parent) with criminal associations; parental factors (parental rejection, parental attachment, parental supervision, presence of a parent/no parent) with self-esteem; criminal associations with criminal attitudes; criminal associations with each DSI facet (cognitive centrality, in-group affect and in-group ties), self-esteem with each DSI facet (cognitive centrality, in-group affect and in-group ties), and each psychopathy facet (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) with each DSI facet (cognitive centrality, in-group affect and in-group ties).

The method section highlighted an opportunistic sampling method and a sample of 536 youth offenders (males *n* = 348; females *n* = 188). To test the IPM-CSI, the following measures were utilised: The Measure of Delqineutn Social Identity (MDSI; validated in chapter four), The Self-Esteem Measure for Delinquents (SEM-D; Debowska et al., 2017), the Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999), Peer rejection (Mikami et al., 2005) and Parental attachment (Ingram et al., 2007), Parental Supervision (Ingram et al., 2007), Attitudes towards in-group and out-group members, and Psychopathic Personality Trait Scale (PPTS; Boduszek et al., 2016c).

Independent samples t-test revealed that there was a significant difference between male and female youth offenders on criminal friends index scores and on cognitive responsiveness scores. Therefore, path analysis was conducted separately for males and females. The significant findings were presented and discussed in relation to the elements of the IPM-CSI.

To summarise, the results showed that interpersonal manipulation correlated with in-group affect for males but correlated with in-group ties for females. While a nonsignificant relationship was identified between affective responsiveness and delinquent social identity factors for males, a significant relationship was identified between affective responsiveness and in-group ties for females. Egocentricty was shown to have a positive effect on cognitive centrality and in-group affect and a negative effect on in-group ties for both males and females. Cognitive responsiveness was shown to have a negative effect on in-group ties for both males and females. Self-esteem was positively correlated to in-group ties for males and females, but also negatively correlated to cognitive centrality in males. Parental supervision was negatively correlated to criminal friends index for both males and

females. However, the present of a parent in childhood had a negative effect on criminal friends index but only for females.

Chapter five provided contributions to existing literature that can be utilised to devise and/or amend interventions programmes. In particular, the development of gender specific programmes for youth offenders.

7.1.6 Chapter six

Chapter six highlighted theoretical approaches to the development of adolescent personality and identity formulation that indicate the importance of researching these areas during adolescence. Research relating to the associations between personality and behaviour are outlined. The focus of the introduction was then based around the difficulties children have in achieving a pro-social identity based on personality, attachment and social competence. Lastly, the introduction outlined research to date based on the associations between personality, i.e. psychopathy, and social identity before introducing research focussed on psychopathy as a moderator of CSI and external factors. Research showed a moderating effect of psychopathy on the relationship between period of confinement and criminal social identity (Boduszek et al., 2016b) and a moderating effect of psychopathy on the relationship between period of incarceration / criminal associations and criminal social identity (Sherretts et al., 2016).

However, the introduction highlighted that research surrounding the relationship between psychopathy and criminal social identity in juvenile samples is negligible and has only been tested in a South Asian population using a psychopathy measure indexing criminal behaviour (Boduszek et al., 2016b). Chapter four showed that the relationship between criminal associations and criminal social identity was only significant for in-group ties and only in the male sample. Thus, the purpose of chapter six was to explore the effects

of each of the four psychopathy facets (affective responsiveness, cognitive responsiveness, interpersonal manipulation, and egocentricity) on the relationship between associations with other offenders and delinquent social identity.

The Measure of Delinquent Social Identity (MDSI; validated in chapter four), The Measure of Criminal Attitudes and Associates (MCAA; Mills & Kroner, 1999) and the Psychopathic Personality Traits Scale (PPTS; Boduszek et al., 2016c) were administered to a sample of a sample of 536 youth offenders (males n = 348; females n = 188).

The results section provided details on the findings of moderated regression analysis. The findings showed that cognitive responsiveness and egocentricity moderated the relationship between criminal friends index and cognitive centrality. Simple slope analyses showed that the relationship between criminal friends index and cognitive centrality was stronger with decreased levels of cognitive responsiveness and the relationship between criminal friends index and cognitive centrality was stronger with decreased levels of egocentricity. Moderated regression analyses showed that cognitive responsiveness, egocentricity and affective responsiveness moderated the relationship between criminal friends index and in-group affect. Simple slope analyses identified that the relationship between criminal friends index and in-group affect was stronger with decreased levels of cognitive responsiveness and egocentricity and increased levels of affective responsiveness. Moderated regression analyses identified that affective responsiveness moderated the relationship between criminal friends index and in-group ties. Simple slope analysis showed that the relationship between criminal friends index and in-group ties was stronger with increased levels of affective responsiveness.

The findings of chapter six contribute to existing literature by expanding on psychopathy research in a youth offender population. This also provides a contribution to the development of psychopathy aspects of intervention programmes with youth offenders.

7.2 LIMITATIONS AND STRENGTHS

When considering the findings presented in the present thesis, the following limitations ought to be considered. First, the sample utilised in the present research consisted of youth offenders within the Yorkshire area of the UK. Although the sampling technique was utilised for practical reasons (i.e. time and travel constraints of the researcher) and there was some variation in ethnicity findings may not be generalisable to other communities and cultures. Thus, future studies should seek to use different sampling techniques (cluster sampling) and to validate the MDSI among youth offenders from different cultural backgrounds in order to verify its factorial invariance. This would allow the measure to be utilised in other cultures and comparisons of findings to be compared with the present thesis.

Although the population in the present research incorporated females, the present thesis did not allow for factor invariance as the sample of females was not large enough. Chapter five enabled for comparisons to be made between genders by using path analysis however chapter six did not due to the sample been too small for the use of moderated regression analysis. Therefore, it is recommended to incorporate a larger sample or a more proportionate sample regarding gender, allowing for comparisons of the moderating psychopathy behaviours of males with females.

The present thesis aimed to limit response bias by the use of structured interviews. The purpose of this was to increase reliability by ensuring the understanding of the questions by the participants and encouraging truthfulness from the participants. Although, this would limit some of the response bias, it did not eradicate it, as youth offenders may be tempted to provide answers that appeared beneficial to them in working with the youth worker. In order to address this it is recommended that future research using the MDSI, in

the form of a structured interview or otherwise, incorporates a Lie scale. For example, a Lie scale (Francis, Brown, & Philipchalk, 1992) was administered to control for social desirability bias in Boduszek and Debowska's (2017) study. However, it must be acknowledged that community based youth offenders in the UK get a period of time in which they are required to attend YOT sessions, for example a 12 month referral order. Despite any progress made the youth offender is required to attend YOT sessions for the required time which will ordinarily not be reduced or extended. Adult prisoners can be rewarded for good behaviour with early release, usually in the form of a home detention curfew, or day release. There are also benefits for good behaviour whilst in prison, such as enhanced accommodation where facilities are improved or been transferred to an open prison where there is more freedom. Research with youth offenders is less likely to elicit response bias as they are likely to gain very little from lying other than social desirability. Therefore, given the present research utilises community based youth offenders, response bias ought not to be considered a major limitation within the research. The current study was cross-sectional and therefore temporal order of the associations reported cannot be assured. Longitudinal studies are therefore required to offer support to the temporal order.

Despite the aforementioned limitations, the current research expands on existing literature in the area of criminal social identity. Firstly, chapter two was the first time that studies focussing on the tenets of the IPM-CSI had been identified and presented together. Research to date surrounding criminal social identity has predominantly focussed on imprisoned adult male samples. An adapted version of MCSI-R, the Measure of Delinquent Social Identity (MDSI), was developed and validated. This allowed for CSI to be reliably assessed among youth offenders. Although the sample was restricted to the Yorkshire area of England, the benefit of using youth community samples is that there are a diverse range of offenders, e.g. sex offenders, violent offenders, dishonesty offenders, which increases

the validity of the measure. This is not reflected in juvenile prison samples because only youths who commit serious offences are imprisoned and therefore the range of offences is limited (Ministry of Justice, 2018).

The present research provides substantial contribution to the research surrounding the development of criminal social identity in youth offenders. The IPM-CSI model has not previously been tested in a single study. The present thesis has also provided some useful findings in relation to gender differences in the correlates of the IPM-CSI, e.g. psychopathy and self-esteem, among juvenile offenders. Although the moderating effects of psychopathy has been explored in juvenile and adult offender samples previously (Boduszek et al., 2016b; Sherretts et al., 2016), the findings of the present thesis have provided original evidence on moderating psychopathy behaviours of youth offenders in the UK.

7.3 CONTRIBUTIONS OF THIS RESEARCH

The present thesis has provided some valuable contributions to the research fields of criminology and forensic psychology. The theoretical developments of providing a further understanding of criminal social identity in juveniles provides fruitful contribution to the development of intervention programmes for youth offenders.

7.3.1 Research implications

Firstly, the present thesis provides contribution to the literature field of criminal social identity by using a rapid evidence assessment to bring together all papers concerned with the tenets of the IPM-CSI. This is useful for practitioners, such as the National Offender Management Service (NOMS), who will benefit from reviewing theoretical and empirical evidence in a timely manner. This also enabled research papers to be summarised and gaps in the research field to be identified in order to direct future research.

Although a validated measure of criminal social identity (MCSI-R; Boduszek & Debowska, 2017) exists, it has only been utilised and tested in an adult forensic population. The more dated MCSI (Boduszek et al., 2012c) was utilised on an imprisoned juvenile sample (Boduszek et al, 2016b; Shagufta et al., 2015a; 2015b). However, the MCSI/MCSI-R is not appropriate for use with juvenile offenders due to the wording of some items. Through the development and validation of the MDSI, the present research addressed this limitation. The present thesis provides support that a bifactor model with one general factor of CSI and three grouping factors (cognitive centrality, in-group affect, in-group ties) best captures scores on the MDSI, similarly to scores on the MCSI-R as identified in prior research (Boduszek & Debowska, 2016).

The constructs included in the IPM-CSI (Boduszek et al., 2016a) have been researched in previous studies (Boduszek et al., 2012a; 2012b; 2013a; 2014a; Boduszek et

al., 2016b; Boduszek & Debowska, 2017; Shagufta et al., 2015a; 2015b; Sherretts et al., 2016; 2017; Walters, 2003). While some studies have tested several constructs in one study, no study has tested all of the constructs of the IPM-CSI in a single study. The present thesis is the first piece of research to encompass all aspects of the IPM-CSI in one analysis. Only one previous study utilised a mixed gender sample (Sherretts et al., 2016). However, the research did not split the sample based on gender for the purpose of analysis. The present thesis used a mixed gender sample and separated the sample into males/females for path analysis which enabled gender comparisons on the whole model of the IPM-CSI. This is a substantial contribution to the research field as findings showed that there were gender differences in the correlates of CSI, including psychopathic traits (affective responsiveness, and cognitive responsiveness), living with a parent and self-esteem.

Previous research has proposed a correlation between psychopathy and criminal social identity (Sherretts et al., 2016). Expanding on this research has also focussed on the moderating effect of psychopathy on criminal social identity (Boduszek et al., 2016; Sherretts et al., 2016). However, only two studies have researched this area to date and only one used a juvenile sample. Specifically, Boduszek et al. (2016) identified moderating effect of psychopathy on the relationship between period of confinement and criminal social identity, while Sherretts et al. (2016) noted a moderating effect of psychopathy on the relationship between period of incarceration / criminal associations and criminal social identity. The present research contributed to this field of research by testing similar relationships (the moderating effect of psychopathy on the relationship between criminal associations and criminal social identity) but in a community juvenile sample. The present research conflicted previous findings (Sherretts et al., 2016) by suggesting that interpersonal manipulation was the only psychopathy facet to not affect the relationship between criminal associations and any of the DSI facets. However, the present research

supported aspects of previous research (Sherretts et al., 2016) by proposing that affective responsiveness influenced the strength of the relationship between criminal friends index and in-group ties.

Past research surrounding criminal social identity has focussed on Polish, Pakistani and American samples and no study has used a UK based sample. Studies have also only focussed on samples of imprisoned juveniles (Boduszek et al., 2016b; Shagufta et al., 2015a; 2015b) and given that the majority of youth offenders are based in the community (Ministry of Justice, 2018), research focussing on community youths is more representable of the population of youth offenders. Within the present thesis, construct validity and dimensionality of the MDSI were confirmed in a large UK community YOT sample.

7.3.2 Practical implications

It is envisaged that, by contributing to the existing literature, the present research will contribute to the theoretical background of offender behaviour programmes. The benefit of conducting interventions with juveniles is that identified risk factors, e.g. parental attachment and peer rejection, are dynamic as these are aspects that can be altered, where within the adult offender population, such aspects are static risk factors and therefore cannot be changed.

To date, the majority of intervention programmes have been based on male dominant research and tested on male offenders. Some intervention programmes (e.g. Enhanced Thinking Skills and Thinking Skills Programme) have then been applied to female offenders without supporting research from female populations. Though the current findings highlight some gender differences, specifically in the relationship between criminal associations and psychopathy (affective responsiveness, interpersonal manipulation) with DSI, many similarities in genders are also presented, for example in the

relationship between self-esteem and psychopathy (cognitive responsiveness and egocentricity) with DSI. As such, it may be argued that interventions programmes for females and males should be based on the common underlying behaviours of developing a DSI, however, ought to be tailored where required to females or males. For example, the current findings indicate that interventions targeting reducing criminal associations would be more beneficial to males and support in sustaining living conditions with at least one parent should be focussed on for females. Lastly, by developing a valid and reliable measure of delinquent social identity, which is free and easy to administer, assists practice and further research within the field. Additionally, the delivery of intervention programmes may need to be tailored to the specific gender.

Two areas highlighted by the present research as being significant predictors of DSI are; relationships and self-esteem. Positive relationships should be encouraged by a) developing attachments with parent(s)/guardian(s) in order to prevent criminal cognitive structures and emotional attachments with offenders, b) encouraging integration with friends at school to prevent peer rejection and in turn preventing emotional attachments with offenders and c) encouraging pro-social associations in order to prevent criminal cognitive structures and emotional attachments with offenders. Similar to suggested treatment for adult offenders (Boduszek & Debowska, 2017), treatment should aim to increase youth offender's self-esteem in order to prevent them from forming criminal cognitive structures.

The present research suggests that offender behaviour programmes should focus on deterring youths away from associating with other offenders to decrease the chances of forming a delinquent social identity. This could be achieved through encouraging the offenders to consider the positive and negative consequences of the influences that a person

has on them and developing steps to achieve some distance from that person. Offender behaviour programmes focusing on increasing empathy are already in existence (e.g. Juvenile Enhanced Thinking Skills) and the present study provides further empirical support that this is the right approach.

The present study also indicates that youth offenders may falsify empathy to be accepted by the group and such programmes should aim to reduce manipulative behaviours. Researchers have previously held the opinion that offenders with psychopathic traits do not respond well to intervention programmes (Felthous, 2011; Salekin, 2002) while some even argued that intervention programmes increased the likelihood of reoffending in those with increased psychopathic traits (Lilienfeld, 2007; Reidy, Kearns, & DeGue, 2013). Such views may be the result of a therapist finding it more challenging to work with someone who possesses psychopathic traits than a recognition of the lack of development in offenders. More recently, researchers have argued that intervention programmes can be beneficial for offenders with increased scores of psychopathic traits when they change dynamic risk factors (Caldwell & Van Rybroek, 2013). In particular, significant decreases in impulsive antisociality (social deviance) have been noted in young offenders (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2006). Though grandiosity, lack of empathy, callousness, and manipulative behaviour may be considered dynamic factors others argue they are stable personality traits (Mann, Hansen, & Thornton, 2010). It seems to be for this reason why intervention programmes targeted for psychopaths tend not to focus directly on changing the personality but focus on the following elements; motivation and engagement, cognitive skills (creative thinking, problem solving, and handling conflict), and schema therapy (encouraging positive beliefs and consequent behaviours) (Chromis; Tew & Atkinson, 2013). Though there is limited supporting research for the success of implementing the three aforementioned elements (Tew, Dixon, Harkins, & Bennett, 2012),

further research ought to consider applying such elements in DSI focussed interventions to address psychopathic traits.

Motivation and engagement elements need not only be incorporated with those with increased psychopathic traits. Though it has been suggested that youth offenders are more malleable and responsive to treatment, it must be acknowledged that despite delivering effective, well researched, intervention programmes some youth offenders will choose not to adopt the skills introduced by the programme. As such, it is advised that practitioners consider introducing a motivational intervention programme (e.g. A-Z), which includes motivational elements such as 'The Good Lives Model' (Ward & Brown, 2004), prior to a specific intervention programme based on DSI. This allows the youth offender to evaluate what they value in life and encourage them to consider making positive changes or developments. Once willing to accept that there are areas of their life and personality/identity that could be developed, the youth offender can then embark on a specific intervention programme.

7.4 FUTURE DIRECTIONS

In considering the above limitations, as well as the restrictions of the present research, a set of recommendations are outlined below. Such recommendations will assist in the application of future research and development of knowledge surrounding the psychosocial processes of CSI and associated consequences.

The MDSI was demonstrated to be a reliable measure to be applied to community juvenile offenders. While the majority of items of the MDSI provide desirable standardised factor loadings (0.45 and higher [Comery & Lee's, 1992]), question 6 (in-group affect; 0.41) fell slightly below this cut-off point.

As the MDSI is a newly developed measure and has only been tested with one population (youth offenders in Yorkshire) it is recommended that it be further validated in different communities and cultures in order to increase the validity. Although it has been noted that the majority of youth offenders are based in the community, the MDSI should be tested and validated in prison samples as there may be significant differences in the populations of youth offenders based in prison compared to those in the community.

The present thesis adopted a cross-sectional design, whereas the IPM-CSI portrays a sequential order in the development of CSI. Therefore, studies should reflect a longitudinal design in order to support the temporal changes proposed by the model. Concerned with theoretical practice, expansion of the model should be sought from longitudinal studies. Already outlined, reduced suicidal ideation may be a consequence of CSI (Shagufta et al., 2015b), yet without such supporting research it is difficult to provide reliable theory on the consequences of CSI.

Existing studies under-represent the female population, with only one study using a mixed-gender sample. As research has proposed gender differences in CSI (Sherretts et al., 2016), it is pertinent to ensure research focuses on female populations as the processes involved in CSI may differ between males and females. Research on female offenders has a huge practical implication as the contribution of females within the offending population is increasing (Ministry of Justice, 2016). While the present study incorporated a mixed gender sample and was able to make gender comparisons by performing two separate path analyses for males and females, structural equation modelling which enables the inclusion of latent variables was not possible due to the size of the sample. Therefore, it is recommended that future research incorporate a larger sample to test the IPSM-CSI model with latent variables.

The present thesis utilised a robust methodology. However, prior research has used a variety of measures and some that are dated and critiqued. Although most previous studies adopt the MCSI (Boduszek et al., 2012a), a new revised measure has also been utilised (Boduszek & Debowska, 2017), along with the earlier measure (Social Identity for Criminals; adapted from Cameron, 1999). The MCSI has been critiqued for their lack of multidimensionality, inconsistent research findings on internal consistency, and lack of content. Psychopathy has also been assessed using various measures (Psychopathy Levenson Self-report Psychopathy Scale [Levenson, et al., 1995]; Self-report Psychopathy Scale – Short Form, [SRP-SF; Paulhus et al., 2016]). These prior measures of psychopathy have been critiqued for including behavioural factors – such as erratic lifestyle and antisocial/criminal behaviour – which appear to be an outcome of psychopathy, not an integral part of it (see Boduszek & Debowska, 2016 for a review). Consistency in use of measures is important when collating and comparing findings from different studies as it allows more reliable analyses to be drawn. It is therefore recommended that future research

use robust up to date measures, e.g. The MDSI (see chapter four) and the PPTS (Boduszek et al., 2016c).

Despite the above-mentioned limitations and recommendations, the thesis has achieved its aims of producing new knowledge in the areas of delinquent social identity. By providing some fruitful empirical evidence into the factors correlated with delinquent social identity, the current thesis provides a premise for developments and advancements in youth offender behaviour programmes. The present thesis introduced a measure of delinquent social identity that can be utilised for future research. It has also advanced on existing research into the correlates of criminal social identity by using an original sample (community youth offenders from the UK).

References

Adorno, Theodor W., Frenkel-Brunswik, Else, Levinson, Daniel J., Sanford, R. Nevitt. (1950). *The Authoritarian Personality*. *New York*: Harper and Row.

Agnew, R. (1993). Why do they do it? An examination of the intervening mechanisms between 'social control' variables and delinquency. *Journal of Research in Crime and Delinquency, 30*, 245–266.

Akers, R. (1985). *Deviant behaviour: A social learning approach*. Belmont: Wadsworth.

Akers, R., Krohn, M., Lonn, L., & Radosevich, M. (1979). Social learning and deviant behaviour: A test of general theory. *American Sociological Review*, *44*, 636–655.

Aksan, N., & Kochanska G. (2005). Conscience in childhood: Old questions, new answers. *Developmental Psychology* 41: 506

Allport, G. W. (1937). *Personality: A psychological interpretation*. New York: Holt.

Ambridge, B. (2014). *Psy-Q: You know your IQ – now test your psychological intelligence. Profile*. Retrieved from http://books.google.com

Andersen, S., & Chen, S. (2002). The Relational Self: An Interpersonal Social-Cognitive Theory. *Psychological Review*, *109*(4), 619-645. doi:10.1037//0033-295X.109.4.619.

Andrews, D.A., Bonta, J. and Hoge, R. (1990) Classification for effective rehabilitation:

Rediscovering psychology. Criminal Justice and Behavior, 17, 19–52.

Andrews, K., & Kandel, D. (1979). Attitude and behavior: A specification of the contingent consistency hypothesis. *American Sociological Review*, *44*:298–310.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480. doi:10.1037/0003-066X.55.5.469

Asendorpf, J. B., Borkenau, P., Ostendorf, F., & van Aken, M. A. G. (2001). Carving personality description at its joints: Confirmation of three replicable personality prototypes for both children and adults. *European Journal of Personality*, 15, 169–198.

Bagwell, C. L. (2004). Friendships, peer networks, and antisocial behavior. In J. B. Kupersmidt & K. A. Dodge (Eds.), *Decade of behavior. Children's peer relations: From development to intervention* (pp. 37-57). Washington, DC, US: American Psychological Association. http://dx.doi.org/10.1037/10653-003

Bagwell, C. L., Newcomb, A. F., & Bukowski, W. M. (1998). Preadolescent friendship and peer rejection as predictors of adult adjustment. *Child Development, 69*(1),140-153. doi:10.1111/j.1467-8624.1998.tb06139.x.

Baumeister, R. F. (1999). The nature and structure of the self: An overview. In R. Baumeister (Ed.), The self in social psychology (pp. 1-20). Philadelphia, PA: Psychology Press (Taylor & Francis).

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497-529. doi:10.1037/0033-2909.117.3.497

Baumeister, R, F., Stillwell, A, M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin, 115*, 243–247. doi:10.1037/0033-2909.115.2.243.

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

Bentler, P. M. (1990). Comparative fit indices in structural models. *Psychological Bulletin, 217*, 238-246.

Blackburn, R. (2006). Other theoretical models of psychopathy. In Patrick, C. J. (Ed.), Handbook of psychopathy (pp. 35–57). New York, NY: Guilford Press.

Blonigen, D. M., Hicks, B. M., Krueger, R. F., Patrick, C. J., & Iacono, W. G. (2006). Continuity and change in psychopathic traits as measured via normal-range personality: A longitudinal-biometric study. *Journal of Abnormal Psychology, 115*(1), 85-95. doi:10.1037/0021-843X.115.1.85

Boduszek, D., Adamson, G., Shevlin, M., & Hyland, P. (2012b). The role of personality in the relationship between criminal social identity and criminal thinking style within a sample of prisoners with learning difficulties. *Journal of Learning Disabilities and Offending Behaviour*, doi:10.1108/20420921211236771.

Boduszek, D., Adamson, G., Shevlin, M., & Hyland, P. (2012c). Development and validation of a Measure of Criminal Social Identity within a sample of Polish recidivistic prisoners. *Criminal Behaviour and Mental Health, 22*(5), 315-324. doi: 10.1002/cbm.1827.

Boduszek, D., Adamson, G., Shevlin, M., Hyland, P., & Bourke, A. (2013a). The role of criminal social identity in the relationship between criminal friends and criminal thinking style within a sample of recidivistic prisoners. *Journal of Behavior in the Social Environment, 23*(1), 14-28. doi:10.1080/10911359.2013.737289.

Boduszek, D., Adamson, G., Shevlin, M., Hyland, P., & Dhingra, K. (2014b). Psycho-sociological investigation of criminal behaviour within a prison sample using retrospective data. *The Howard Journal of Criminal Justice 53*(1), 31–48. doi:10.1111/hojo.12044.

Boduszek, D., Adamson, G., Shevlin, M., Mallett, J., & Hyland, P. (2012a). Criminal social identity of recidivistic prisoners: The role of self-esteem, family and criminal friends. *Journal of Police and Criminal Psychology, 28*(1), 15-25. doi:10.1007/s11896-012- 9105-7.

Boduszek, D., & Debowska, A. (2017). Further insights into the construct of criminal social identity: Validation of a revised measure in a prison population. *The Journal of Forensic Psychiatry & Psychology, 28*(5), 694. doi:10.1080/14789949.2017.1318161.

Boduszek, D., & Debowska, A. (2016). Critical evaluation of psychopathy measurement (PCL-R and SRP-III/SF) and recommendations for future research. *Journal of Criminal Justice, 44*, 1-12. doi:10.1016/j.jcrimjus.2015.11.004

Boduszek, D., Debowska, A., Dhingra, K., & DeLisi, M. (2016c). Introduction and validation of the Psychopathic Personality Traits Scale (PPTS) in a large prison sample. *Journal of Criminal Justice, 46*, 9-17. doi:10.1016/j.jcrimjus.2016.02.004.

Boduszek, D., Dhingra, K., & Debowska, A. (2016a). The Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI). *Deviant Behavior, 37*(9), 1023-1031. http://dx.doi.org/10.1080/01639625.2016.1167433.

Boduszek, D., Dhingra, K., & Debowska, A. (2016b). The moderating role of psychopathic traits in the relationship between period of confinement and criminal social identity in a sample of juvenile prisoners. *Journal of Criminal Justice, 44,* 30- 35. doi:10.1016/j.jcrimjus.2015.11.005.

Boduszek, D., Dhingra, K., Hyland, P., & Debowska, A. (2015). A bifactorial solution to the Psychopathy Checklist: Screening Version in a sample of civil psychiatric patients. *Criminal Behaviour and Mental Health*. doi: 10.1002/cbm.1956

Boduszek, D., & Hyland, P. (2011). The theoretical model of criminal social identity: Psycho-social perspective. *International Journal of Criminology and Sociological Theory, 4*(1), 604-615.

Boduszek, D., Hyland, P., Bourke, A., Shevlin, M., & Adamson, G. (2013b). Assessment of psycho-social factors predicting recidivistic violent offences within a sample of male prisoners. *The Irish Journal of Psychology, 34*(1), 24-34. doi: 10.1080/03033910.2012.754324

Boduszek, D., O'Shea, C., Dhingra, K., & Hyland, P. (2014a). Latent class analysis of criminal social identity in a prison sample. *Polish Psychological Bulletin 45*(2), 192–199. doi:10.2478/ppb-2014-0024.

Bollen, K.A. (1989). *Structural Equations with Latent Variables.* New York: Wiley.

Bollen, K.A., & Long, J.S. (1993). *Testing Structural Equation Models*. London, UK: Sage publications.

Bonifay, W., & Cai, L. (2017). On the complexity of item response theory models. *Multivariate Behavioral Research, 52*(4), 465-484. doi: 10.1080/ 00273171.2017.1309262

Bonifay, W., Lane, S. P., & Reise, S. P. (2017). Three concerns with applying a bifactor model as a structure of psychopathology. *Clinical Psychological Science, 5*(1), 184-186. doi:10.1177/2167702616657069

Brewer, M. B., Manzi, J. M., & Shaw, J. S. (1993). In-group identification as a function of depersonalization, distinctiveness, and status. *Psychological Science, 4*(2), 88-92. doi:10.1111/j.1467-9280.1993.tb00466.x

Brown, R., Condor, S., Mathews, A., Wade, G., & Williams, J. (1986). Explaining intergroup differentiation in an industrial organization. *Journal of Occupational Psychology, 59*(4), 279-304.

Browne, M.W. & Cudeck, R. (1989). Single sample cross-validation indices for covariance structures. *Multivariate Behavioral Research, 24*, 445–455

Brown, B. B., & Lohr, M. J. (1987). Peer group affiliation and adolescent self-esteem: An integration of ego identity and symbolic interaction theories. *Journal of Personality and Social Psychology, 52*(1), 47-55. doi:10.1037/0022-3514.52.1.47

Bruner, M. W., Boardley, I. D., & Côté, J. (2014). Social identity and prosocial and antisocial behavior in youth sport. *Psychology of Sport & Exercise, 15*(1), 56-64. doi:10.1016/j.psychsport.2013.09.003

Burke, P, J. (2006). Identity change. *Social Psychology Quarterly 69*(1), 81–96.

Caldwell, M. F., & Van Rybroek, G. (2013). Effective treatment programs for violent adolescents: Programmatic challenges and promising features. *Aggression and Violent Behavior, 18*(5), 571-578. doi:10.1016/j.avb.2013.06.004

Cameron, J. (2004). A three factor model of social identity. *Self and Identity, 3*(3), 239-262. doi:10.1080/13576500444000047

Cameron, J. E. (1999). Social identity and the pursuit of possible selves: Implications for the psychological well-being of university students. *Group Dynamics: Theory, Research, and Practice, 3*, 179-189

Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment*. Newbury Park, CA: Sage Publications.

Caspi, A., Herbener, E. S. (1990). Continuity and change: assortative marriage and the consistency of personality in adulthood. J. Personal. Soc. Psychol. 58:250–58

Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology*, 56, 453–484.

Clarbour, J. & Roger, D. (2004). The construction and validation of a new scale for measuring emotional response style in adolescents. Journal of Child Psychology and Psychiatry 45:3, 496-509.

Clarke, D. A. (2000). Theory manual for Enhanced Thinking Skills. Prepared for the Joint Prison-Probation Accreditation Panel. London: Home Office.

Clemmer, D. (1966). *The prison community*. New York, NY: Holt, Rinehart, and Winston

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Coles, B. (1995). *Youth and social policy: Youth citizenship and young careers*. London: UCL Press.

Cooley, C. H. (1998). *On self and social organization*. Chicago, IL: University of Chicago Press.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*, 98–104. http://dx.doi.org/10.1037/0021- 9010.78.1.98

Costa, P. T., Jr., & McCrae, R. R. (1994). Set like plaster? Evidence for the stability of adult personality. In T. F. Heatherton & J. L. Weinberger (Eds.), *Can personality change?* (pp. 21–40). Washington, DC: American Psychological Association.

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

Debowska, A., Boduszek, D., & Sherretts, N. (2017). Self-esteem in adult prison population: The development of the Self-Esteem Measure for Criminals (SEM-C). *Deviant Behavior, 38, 1240-1251*. doi: 10.1080/01639625.2016.1246034.

Debowska, A., Boduszek, D., & Sherretts, N. (2016). Self-esteem in adult prison population: The development and validation of the self-esteem measure for prisoners (SEM-P). *Deviant Behavior, 38*(11), 1240-12. doi:10.1080/01639625.2016.1246034

Debowska, A., Boduszek, D., Kola, S., & Hyland, P. (2014). A bifactor model of the Polish version of the Hare Self-Report Psychopathy Scale. *Personality and Individual Differences, 69*, 231–237. doi:10.1016/j.paid.2014.06.001

Declercq, F., Willemsen, J., Audenaert, K., & Verhaeghe, P. (2012). "Psychopathy and predatory violence in homicide, violent, and sexual offences: Factor and facet relations", *Legal and Criminological Psychology*, Vol. 17 No. 1, pp. 59-74.

De Cremer, D., & Van Vugt, M. (1999). Social identification effects in social dilemmas: A transformation of motives. *European Journal of Social Psychology, 29,* 871–893. http://dx.doi.org/10.1002/(SICI)1099-0992(199911)29:7□871::AID-EJSP962□3.0.CO

Diamantopoulos, A., & Siguaw, J. A. (2000). *Introducing LISREL*. London: Sage Publications.

Dick, Wagner, U., Stellmacher, J., & Christ, O. (2005). Category salience and organizational identification. *Journal of Occupational and Organizational Psychology, 78*(2), 273-285. doi:10.1348/096317905X25779

Dishion, T. J., Patterson, G. R., Stoolmiller, M., & Skinner, M. L. (1991). Family, school, and behavioral antecedents to early adolescent involvement with antisocial peers.*Developmental Psychology, 27*(1), 172-180. doi:10.1037/0012-1649.27.1.172

Dixon-Woods, M., Bonas, S., Booth, A., Jones, D. R., Miller, T., Sutton, A. J., . . . Young, B. (2006). How can systematic reviews incorporate qualitative research? A critical perspective. *Qualitative Research, 6*(1), 27 - 44. doi: 10.1177/14687941060588.

Downs, W. R., & Rose, S. R. (1991). The relationship of adolescent peer groups to the incidence of psychosocial problems. *Adolescence*, *26*(102), 473.

Duignan, J. (2016). *A Dictionary of Business Research Methods*.

doi: 10.1093/acref/9780191792236.001.0001

Dwan, T., & Ownsworth, T. (2017). The Big Five personality factors and psychological well-being following stroke: a systematic review. *Disability Rehabilitation,* 22, 1-12. doi: 10.1080/09638288.2017.1419382.

Eisenberg, N., & Miller, P. A. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin, 101*(1), 91-119. doi:10.1037/0033-2909.101.1.91

Ellemers, N., Kortekaas, P., & Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology, 29*(23), 371-389. doi:10.1002/(SICI)1099-0992(199903/05)29:2/3<371::AID-EJSP932>3.0.CO;2-U

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual Review of Psychology, 53*(1), 161-186. doi:10.1146/annurev.psych.53.100901.135228

Erikson, E. H. (1950). *Childhood and society*. New York: Norton.

Erikson, E. H. (1963). *Youth: Change and challenge*. Basic books.

Erikson, E. H. (1994). Identity: Youth and crisis (No. 7). WW Norton & Company.

Erikson, E. H., Paul, I. H., Heider, F., & Gardner, R. W. (1959). *Psychological issues* (Vol. 1). International Universities Press.

Eysenck, S. B. J., & McGurk, B. J. (1980). Impulsiveness and venturesomeness in a detention

center population. Psychological Reports, 47, 1299 – 1306.

Feldman, R. (2007.) Mother-infant synchrony and the development of moral orientation in childhood and adolescence: Direct and indirect mechanisms of developmental continuity *American Journal of Orthopsychiatry* 77: 582-597.

Felthous, A. (2011). The “untreatability” of psychopathy and hospital commitment in the USA. *International journal of law and psychiatry*, 34, 400-405.

Festinger, L. (1954). A Theory of Social Comparison Processes. *Sage journals, 7*(2), 117-140. doi.org/10.1177/001872675400700202.

Francis, L. J., Brown, L. B., & Philipchalk, R. (1992). The development of an abbreviated form of the revised eysenck personality questionnaire (EPQR-A): Its use among students in england, canada, the U.S.A. and australia. *Personality and Individual Differences, 13*(4), 443-449. doi:10.1016/0191-8869(92)90073-X.

Frick, P. (2007). Using the construct of psychopathy to understand antisocial and violent youth. In F. Herve & J. Yuille (Eds.), *The psychopath: Theory, research, and practice* (pp. 343–368). Mahwah, NJ: Erlbaum.

Garner, P. W. (2003). Child and family correlates of toddlers' emotional and behavioral responses to a mishap. *Infant Mental Health Journal* 24: 580-596.

Garrido, V., & Sanchis, J. R. (1991). The cognitive model in the treatment of Spanish offenders: Theory and practice. Journal of Correctional Education, 42, 111-118.

Gendreau, P., Goggin, C., & Smith, P. (2002).Is the PCL-R really the "unparalleled" measure of offender risk? A lesson in knowledge cumulatio, *Criminal Justice and Behavior*, Vol. 29, pp. 397–426.

Gibbs, J. C., Potter, G. B., & Goldstein, A. P. (1995). The EQUIP program: Teaching youth to think and act responsibly through a peer-helping approach. Research Press.

Goethals G.R., Darley J.M. (1987) *Social Comparison Theory: Self-Evaluation and Group Life*. Mullen B., & Goethals G.R. (Ed.). New York, NY: Springer

Goffman, E. (1963). Stigma: Notes on the management of spoiled identity. New York,

NY: Simon & Schuster.

Goffman, E. (1990). The presentation of self in everyday life. London, United Kingdom: Penguin.

Goldstein, A. P., Glick, B. & Gibbs, J. C. (1998). Aggression Replacement Training: A comprehensive intervention for aggressive youth (revised edition). Champaign, IL: Research Press.

Goldstein, A. P. & Glick, B. (1994). Aggression Replacement Training: Curriculum and evaluation. Simulation and Gaming, 25, 9-26.

Hair, J. F., Anderson, R. E., Tatham, R. L. & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Prentice-Hall, New Jersey.

Häkkänen-Nyholm, H., & Hare, R. D. (2009). "Psychopathy, homicide, and the courts working the system", *Criminal Justice and Behavior*, Vol. 36 No. 8, pp. 761-777

Hare, R. D. (2003). *Manual for the Revised Psychopathy Checklist* (2ndEd.). Toronto, ON: Multi-Health Systems.

Hare, R. D., & Neumann, C. S. (2008). Psychopathy as a clinical and empirical construct. *Annual Review of Clinical Psychology, 4,* 217–246. doi:10.1146/annurev.clinpsy. 3.022806.091452.

Heaven, P. (1996). Personality and self-reported delinquency: Analysis of the ''Big Five'' personality dimensions. *Perosnality & Individual Differences,* 20, 47-54.

Heaven, P. C. L., Caputi, P., Trivelion-Scott, D., & Swinton, S. (2000). Personality and group influences on self-reported delinquent behaviour. *Personality and Individual Differences,* 17, 181-189

Heaven, P.C.L., Newbury, K. and Wilson, V. (2004). The Eysenck psychoticism dimension and delinquent behaviours among non-criminals: changes across the lifespan?, *Personality and Individual Differences,* 36, 1817-25.

Henggeler, S. W., Melton, G. B., Brondino, M. J., Scherer, D. G. & Hanley, J. H. (1997). Multisystemic therapy with violent and chronic juvenile offenders and their families: The role of treatment fidelity in successful dissemination. Journal of Consulting and Clinical Psychology, 65, 821-833.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*(3), 319-340. doi:10.1037/0033-295X.94.3.319.

Hinkle, S., Taylor, L. A., Fox-Cardamone, D. L., & Crook, K. F. (1989). Intragroup identification and intergroup differentiation: A multicomponent approach. *British Journal of Social Psychology, 28*(4), 305–317. doi:10.1111/j.20448309.1989. tb00874.x.

Hirschi, T. (1969). *Causes of Delinquency*. Berkeley: University of California Press.

Hogg, M. A. (2001). A social identity theory of leadership. *Personality and Social Psychology Review, 5*, 184-200. doi: 10.1207/S15327957PSPR0503_1.

Hogg, M. A., & Reid, S. A. (2006). Social identity, self-categorization, and the communication of group norms. *Communication Theory, 6*(1), 7-30. doi:10.1111/j.1468-2885.2006.00003.x.

Hogg, M. A., & Smith, J. R. (2007). Attitudes in social context: A social identity Perspective. *European Review of Social Psychology 18*(1): 89-131. doi:10.1080/ 10463280701592070.

Holsinger, A. M. (1999). *Assessing criminal thinking: Attitudes and orientations influence behavior*. Lanham: American Correctional Association, Inc.

Howitt, D., & Cramer, D. (2017). *Research methods in psychology* (Fifth ed.). Harlow, England: Pearson.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.

Ingram, J. R., Patchin, J. W., Huebner, B. M., McCluskey, J. D., & Bynum, T. S. (2007). Parents, friends, and serious delinquency: An examination of direct and indirect effects among at-risk early adolescents. *Criminal Justice Review, 32*(4), 380-400. doi:10.1177/0734016807311436.

Izzo, R. L. & Ross, R. R. (1990). Meta-analysis of rehabilitation programmes for juvenile delinquents. Criminal Justice and Behavior, 17, 134-142.

Jaccard, J. and T. Dodge (2004) Analyzing Contingent Effects in Regression Models. *Handbook of Data Analysis*. Thousand Oaks, CA: Sage

Jackson, J. (2002). Intergroup attitudes as a function of different dimensions of group identification and perceived intergroup conflict. *Self and Identity 1*(1), 11–33. doi:10.1080/152988602317232777

Jackson, L. A., Sullivan, L. A., Harnish, R., & Hodge, C. N. (1996). Achieving positive social identity: Social mobility, social creativity, and permeability of group boundaries. *Journal of Personality and Social Psychology, 70*(2), 241. doi:10.1037/0022-3514.70.2.241.

Jose, P. E. (2013). ModGraph-I: A programme to compute cell means for the graphical display of moderational analyses: The internet version, Version 3.0. Victoria University of Wellington, Wellington, New Zealand. Retrieved from http://pavlov.psyc.vuw.ac.nz/paul-jose/modgraph/

Juvonen, J. (1991). Deviance, perceived responsibility, and negative peer reactions. *Developmental Psychology 27*, 672–681. doi:10.1037/0012-1649.27.4.672.

Kaplan, D. (2009). Structural Equation Modeling (2nd ed.): Foundations and Extensions. New York : Sage.

Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, method, and research. *Psychological Bulletin, 118*(1), 3-34. doi:10.1037/0033-2909.118.1.3

Kelloway, K.E. (2015). *Using Mplus for Structural Equation Modelling: A Researcher's Guide* (2nd ed.). London, UK: Sage Publications.

Kestenbaum, R., Farber, E. A., & Sroufe, L. A. (1989). Individual differences in empathy among preschoolers: Relation to attachment history *New Directions for Child Development*, 44, 51-64

Kiesner, J., Cadinu, M., Poulin, F., & Bucci, M. (2002). Group identification in early adolescence: Its relation with peer adjustment and its moderator effect on peer influence. *Child Development, 73*(1), 196-208. Retrieved from http://www.jstor.org/stable/3696439

Kinket, B., & Verkuyten, M. (1999). Intergroup evaluations and social context: A multilevel approach. *European Journal of Social Psychology, 29*(2-3), 219-237. doi:10.1002/(SICI)1099-0992(199903/05)29:2/3<219::AID-EJSP925>3.0.CO;2-X

Kline, P. (2005). An easy guide to factor analysis. Routledge, New York.

Knight, T. (1997). Schools, delinquency and youth culture. In A. Borowski, and I. O'Conner (Eds.), *Juvenile Crime, Justice and Corrections* (pp. 60-77), Melbourne: Addison Wesley Longman.

Kuhn, M. K. (1960). Self-Attitudes by age, sex, and professional training. The Sociological Quarterly, 1(1), 39-54

Laird, R. D., Jordan, K. Y., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2001). Peer rejection in childhood, involvement with antisocial peers in early adolescence, and the development of externalizing behavior problems. *Development and Psychopathology*, 13, 337–354.

Laurell, J., & Dåderman, A. M. (2007), "Psychopathy (PCL-R) in a forensic psychiatric sample of homicide offenders: Some reliability issues", *International journal of law and psychiatry*, Vol. 30, No. 2, pp. 127-135

Levene, H. (1960). Robust tests for equality of variances. In Ingram Olkin; Harold Hotelling; et al. Contributions to Probability and Statistics: Essays in Honor of Harold Hotelling. Stanford University Press. pp. 278–292.

Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology, 68*(1), 151-158. doi:10.1037/0022-3514.68.1.151.

Levin, K. (2006). Study design III: Cross-sectional studies. *Evidence-Based Dentistry, 7*, 24-25. doi: 10.1038/sj.ebd.6400375

Levine, S.Z., & Jackson, C.J. (2004). Eysenck's theory of crime revisited: factors or primary scales? Legal and Criminological Psychology, 9, 135-152.

Lewis M. (2001). Issues in the study of personality development. Issues in the study of personality development. *Psychological Inquiry, 12*(2), 67-83. doi: 10.1207/S15327965PLI1202_*02*

Lilienfeld, S. O. (2007). Psychological treatments that cause harm. *Perspectives on Psychological Science*, 2 (2007), pp. 53-70, 10.1111/j.1745-6916.2007.00029

Lipsey, M. W. (1999). Can rehabilitative programs reduce the recidivism of juvenile offenders? An inquiry into the effectiveness of practical programs. Virginia Journal of Social Policy & the Law, 6, 611–641.

Littell, J. H. (2005). Lessons from a systematic review of effects of multisystemic therapy. *Children and Youth Services Review, 27(4),* 445-43. doi : 10.1016/j.childyouth.2004.11.009

Losel, F. (2003). *The development of delinquent behaviour*. D. Carson & R. Bull (Ed.). Chichester, UK: John Wiley and Sons.

Luhtanen, R. and Crocker, J. (1992). A collective self-esteem scale: self-evaluation of one's social identity, Personality and Social Psychology Bulletin, 18, 302-18.

Mak, A. S.,Heaven, P., & Rummery, A. (2001) The Role of Group Identity and Personality Domains as Indicators of Self-Reported Delinquency. *Psychology Crime and Law, 9(1), 9-18. Doi:* 10.1080/10683160308144

Mann, R. E., Hanson, R. K., & Thornton, D. (2010) Assessing risk for sexual recidivism: Some proposals on the nature of psychologically meaningful risk factors. *Sexual Abuse: A Journal of Research & Treatment*, 22, 191-217, Doi: 10.1177/10790632103 66039

Marcia, J. E. (1966). Development and validation of ego- identity status. *Journal of Personality and Social Psychology*, 3, 551–558.

McCathie, G. N. (2015). A large scale analysis of the JETS programme using a model of clinically significant change.

McCrae, R. R., Costa, P. T., Ostendorf, F., Angleitner, A., Hřebíčková, M., Avia, M. D., . . . Smith, P. B. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality and Social Psychology*, *78*(1), 173-186. doi:10.1037/0022-3514.78.1.173

Merrilees, C. E., Taylor, L. K., Goeke-Morey, M. C., Shirlow, P., Cummings, E. M., & Cairns, E. (2014). The protective role of group identity: Sectarian antisocial behavior and adolescent emotion problems. *Child Development, 85*(2), 412-420. doi:10.1111/cdev.12125

Mikami, A. Y., Boucher, M. A., & Humphreys, K. (2005). Prevention of peer rejection through a classroom-level intervention in middle school. *The Journal of Primary Prevention*, *26*(1), 5-23. doi:10.1007/s10935-004-0988-7

Mikulincer, M., Gillath, O., Halevy, V., Avihou N., Avidan, S., & Eshkoli, N. (2001). Attachment theory and reactions to others' needs: Evidence that activation of the sense of attachment security promotes empathic responses. *Journal of Personality and Social Psychology* 81: 1205-1224.

Mills, J. F., & Kroner, D. G. (1999). Measures of Criminal Attitudes and Associates (MCAA). Unpublished instrument and user guide.

Mills, J. F., Anderson, D., & Kroner, D. G. (2004). The antisocial attitudes and associates of sex offenders. *Criminal Behaviour and Mental Health, 14*(2), 134-145. doi:10.1002/ cbm.578

Mills, J. F., Kroner, D. G., & Forth, A. E. (2002). Measures of criminal attitudes and associates (MCAA): Development, factor structure, reliability, and validity. *Assessment, 9*(3), 240-253. doi:10.1177/1073191102009003003

Ministry of Justice (2018). *Annual report 2017-2018.* Retrieved from https://www.gov.uk/ government/statistics/announcements/youth-justice-statistics-2017-to-2018

Ministry of Justice (2016). *Annual report 2016 – 2017*. Retrieved from https://www.gov.uk/ government/statistics?departments%5B%5D=ministry-of-justice&keywords=&topics %5B%5D=all&world_locations%5B%5D=all

Ministry of Justice (2015). *Annual report 2015-2016.* Retrieved from *https://www.gov.uk/ government/statistics/youth-justice-statistics-2015-to-2016*

Monahan, K. C., Steinberg, L., & Cauffman, E. (2009). Affiliation with antisocial peers, susceptibility to peer influence, and antisocial behavior during the transition to adulthood.*Developmental Psychology, 45*(6), 1520-1530. doi:10.1037/a0017417

Muthén, L. K., & Muthén, B. O. (1998 – 2015). *Mplus user guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Newman, B.M., Lohman, B.J., & Newman, P.R. (2007). Peer group membership and a sense of belonging: their relationship to adolescent behavior problems. *Adolescence, 42*(166), 241-263.

Nezlek, J., & Smith, C. V. (2005). Social Identity in Daily Social Interaction. *Self and Identity, 4(3),* 243-261. doi: 10.1080/13576500444000308

Nicholls, T. L., Ogloff, J. R., Brink, J., & Spidel, A. (2005),Psychopathy in women: A review of its clinical usefulness for assessing risk for aggression and criminalit, *Behavioral sciences and the law,* Vol. 23 No. 6, pp. 779-802.

Nowicki, S. & Strickland, B. R. (1973). A locus of control scale for children. *Journal of Consulting and Clinical Psychology*, 40, 148-154.

Pandis, N. (2014). Cross-sectional Sudies. *American Journal of Orthodontics & Dentofacial Orthopedics,* 1, 127-129. doi: https://doi.org/10.1016/j.ajodo.2014.05.005

Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin 102*(3):357–389. doi:10.1037/0033-2909.102.3.357

Paulhus, D. L., Neumann, C. S., & Hare, R. D. (2016). *Manual for the Self-Report Psychopathy Scale*. Toronto, Ontario, Canada: Multi-Health Systems.

Petrosino A, Turpin-Petrosino, C., & Buehler, J. (2003). Scared Straight and Other Juvenile Awareness Programs for Preventing Juvenile Delinquency. In The Campbell Collaboration Reviews of Intervention and Policy Evaluations, November. Philadelphia, Pennsylvania: Campbell Collaboration.

Piquero, N. L., & Sealock, M. D. (2010). Race, crime, and general strain theory. *Youth Violence and Juvenile Justice, 8*(3), 170-186. doi:10.1177/1541204009361174

Pullen, S. (1996). Evaluation of the Reasoning and Rehabilitation cognitive skills development program as implemented in Juvenile ISP in Colorado. Unpublished report, Colorado Division of Criminal Justice.

Rasch, G. (1980). Probabilistic models for some intelligence and attainment tests.. Chicago: The university of Chicago Press.

Ray, J. V., Thornton, L. C., Frick, P. J., Steinberg, L., & Cauffman, E. (2016). Impulse control and callous-unemotional traits distinguish patterns of delinquency and substance use in justice involved adolescents: Examining the moderating role of neighborhood context, *Journal of Abnormal Child Psychology*, *44*(3), 599-611. doi:10.1007/s10802-015-0057-0

Raykov, T. (1997). Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement, 21*(2), 173-184.

Raykov, T. (1998). Coefficient alpha and composite reliability with interrelated nonhomogeneous items. *Applied Psychological Measurement, 22*(4), 375–385. doi:10.1177/014662169802200407

Reidy, D., Kearns, M. & DeGue, S. (2013). Reducing psychopathic violence: A review of the treatment literature. *Aggression and violent behaviour*, 18, 527-538.

Reise, S. P., Moore, T. M., & Haviland, M. G. (2010). Bifactor models and rotations: Exploring the extent to which multidimensional data yield univocal scale scores. *Journal of Personality Assessment, 92*, 544–559. doi:10.1080/00223891.2010.496477

Reyna, B. B., & Pickler, R. H. (2009). Mother-infant synchrony. *Journal of Obstetric Gynecologic & Neonatal Nursing, 38(4),* 470-7. doi: 10.1111/j.1552-6909.2009.01044.x.

Reynolds, K.J., Turner, J.C., Haslam, H. and Ryan, M.K. (2001). The role of personality and group factors in explaining prejudice, *Journal of Experimental Social Psychology*, 37, 427-34.

Rhodes, M. L. (1979).The impact of social anchorage on prisonization. *Dissertation Abstracts International, 40*:1694A. (UMI No. 79-19, 101).

Roberts, B. W., Wood, D., & Smith, J. L. (2005). Evaluating five factor theory and social investment perspectives on personality development. *Journal of Research in Personality*, 39, 166–184.

Robins, R. W., Fraley, R. C., Roberts, B. W., & Trzesniewski, K. H. (2001). A longitudinal study of personality change in young adulthood. *Journal of Personality, 69*(4), 617-640. doi:10.1111/1467-6494.694157.

Roccas, S., & Brewer, M. B. (2002). Social identity complexity. Personality and Social Psychology Review, 6, 88-106.

Rosenberg, M. (1989). Society and the adolescent self-image. (Rev. Ed.). Wesleyan University Press, Middeltown

Ross, R. R., Fabiano, E. A., & Ewles, C. D. (1988). Reasoning and rehabilitation. International Journal of Offender Therapy and Comparative Criminology, 32(1), 29-35.

Rubin, Mark., & Hewstone, Miles. (1998). Social identity theory's self esteem hypothesis: A review and some suggestions for clarification. *Personality and Social Psychology Review, 2*, 40-62.

Salekin, R.T. (2002). Psychopathy and therapeutic pessimism: Clinical lore or clinical reality? *Clinical Psychology Review*, 22, 79-112.

Salekin, R. T., Rogers, R., & Sewell, K. W. (1996). "A review and meta analysis of the Psychopathy Checklist and Psychopathy Checklist Revised: Predictive validity of dangerousness", *Clinical Psychology: Science and Practice,* Vol. 3 No. 3, pp. 203215.

Salovey, P., & Rodin, J. (1984). Some antecedents and consequences of social-comparison jealousy. *Journal of Personality and Social Psychology, 47*(4), 780-792. doi:10.1037/0022-3514.47.4.780

Sandstrom, M.J., & Zakriski, A.L. (2004). Understanding the experience of peer rejection. In J.B. Kupersmidt & K.A. Dodge (Eds.), *Children's peer relations* (pp. 101-118). Washington, DC: American Psychological Association.

Schreiber, J. B. (2017). Latent class analysis: An example for reporting results. *Research in Social and Administrative Pharmacy*, *13*(6), 1196-1201. doi:10.1016/j.sapharm. 2016.11.011

Seta, C. E., Seta, J. J. and Goodman, R. C. (1998). Social identity orientation and the generation of compensatory expectations: schema maintenance through compensation, Basic and Applied Social Psychology, 20, 285-91.

Shagufta, S., Boduszek, D., Dhingra, K., & Palmer, D. (2015a). Criminal social identity and suicide ideation among Pakistani young prisoners. *International Journal of Prisoner Health*, *11*(2), 98-107. doi.org/10.1108/IJPH-06-2014-0018.

Shagufta, S., Boduszek, D., Dhingra, K., & Palmer, D. (2015b). Latent classes of delinquent behaviour associated with criminal social identity among juvenile offenders in pakistan. *Journal of Forensic Practice,* doi:10.1108/JFP-08-2014-0026.

Shaughnessy, J., Zechmeister, E., & Zechmeister, J. (2012). *Research methods in Psychology* (9th ed.). New York, NY: McGraw Hill.

Shaw, J. M., & Scott, W. A. (1991). Influence of parent discipline style on delinquent behaviour: The mediating role of control orientation. *Australian Journal of Psychology, 43*(2), 61-67. doi:10.1080/00049539108259101.

Sherretts, N., Boduszek, D., & Debowska, A. (2016). Exposure to criminal environment and criminal social identity in a sample of adult prisoners: The moderating role of psychopathic traits. *Law and Human Behavior, 40*(4), 430-439. doi.org/10.1037/lhb0000188.

Sherretts, N., Boduszek, D., Debowska, A., & Willmott, D. (2017). Comparison of murderers with recidivists and first time incarcerated offenders from U.S. prisons on psychopathy and identity as a criminal: An exploratory analysis. *Journal of Criminal Justice, 51,* 89. doi:10.1016/j.jcrimjus.2017.03.002.

Sherretts, N., & Willmott, D. (2016). Construct validity and dimensionality of the measure of criminal social identity using data drawn from American, Pakistani, and Polish inmates. *Journal of Criminal Psychology, 6*(3), 134-143. http://dx.doi.org/10.1108/JCP-07-2016-0020

Simon, T. R., Swann, A. C., Powell, K. E., Potter, L. B., Kresnow, M., & O'Carroll, P. W. (2001). Characteristics of impulsive suicide attempts and attempters. Suicide and Life-*Threatening Behavior*, 32(Suppl.), 49–59.

Simons, R. L., Whitbeck, L. B., Conger, R. D., & Conger, K. J. (1991). Parenting factors, social skills, and value commitments as precursors to school failure, involvement with deviant peers, and delinquent behavior. *Journal of Youth and Adolescence, 20*(6), 645-664. doi:10.1007/BF01537367.

Spink, A., Boduszek, D., Debowska, A., & Bale, C. (2018). Validation of the measure of delinquent social identity among youth offenders in the UK. *Deviant Behavior*, , 1-12. doi:10.1080/01639625.2018.1456723

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, *25*(2), 173-180. doi:10.1207/s15327906mbr2502_4

Strand, S., & Belfrage, H. (2005). Gender Differences in Psychopathy in a Swedish Offender Sample. *Behavioral Sciences and the Law Behav. Sci. Law* 23: 837–850

Strocka, C. (2008). In Search of Identity. Germany: VDM Verlag.

Stryker, S., & Burke, P. J. (2000). The past, present, and future of an identity theory. *Social Psychology Quarterly*, *63*(4), 284-297.

Sykes, G. M., & Matza, D. (1957). Techniques of neutralization: A theory of delinquency. *American Sociological Review*, *22*(6), 664-670.

Tajfel, H. (1981). Human Groups and Social Categories—Studies in Social Psychology. Cambridge: Cambridge University Press.

Tajfel, H. (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations*. London, England: Academic Press.

Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.

Tew, J. & Atkinson, R. (2013). The Chromis programme: From conception to evaluation. *Psychology, crime & law*.

Tew, J., Dixon, L., Harkins, L. & Bennett, A. (2012). Investigating changes in anger and aggression in offenders with high levels of psychopathic traits attending the Chromis violence reduction programme. *Criminal behaviour and mental health*, 22, 191-201.

Thomas, C. W., & Zingraff, M. T. (1974). Organizational Structure and Prisonization Scale [OSPS]. In S. L. Brodsky & H. O. Smitherman (Eds.), Handbook of scales for research in crime and delinquency (pp. 211–214). New York, NY: Plenum.

Thornberry, T., Krohn, M., Lizotte, A., & Chard-Wierschem, D., (1993). The Role of Juvenile Gangs in Facilitating Delinquent Behavior. *Journal of Research in Crime and Delinquency, 30*, 55-87.

Toegel, G., & Barsoux, J. (2012). How to become a better leader. *MIT Sloan Management Review, 53*(3), 51.

Tucker, L.R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38*, 1-10.

Turjeman, H., Mesch, G., & Fishman, G. (2008). Social identity, identity formation, and delinquency. *International Journal of Comparative Sociology, 49*(2-3), 111-126. doi:10.1177/0020715207088907.

Turner, J. C. (1999). Some current issues in research on social identity and self categorization theory, in Ellemers, N., Spears, R. and Doosje, B. (Eds), Social Identity: Context, Commitment, Content, Blackwell, Oxford, 6-34.

Turner, J. C. (1982). Towards a cognitive redefinition of the social group. In H. Tajfel (Ed.), *Social Identity and Intergroup Relations*. Cambridge: Cambridge University Press.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social groups: A self-categorization theory*. Oxford: Blackwell.

Turner, J. C., Oakes, P. J., Haslam, S. A. & McGarty, C. A. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin, 20*(5), 454-463. Doi.org/10.1177/0146167294205002

Underwood, M. K. (2003). The comity of modest manipulation, the importance of distinguishing among bad behaviors. *Merrill-Palmer Quarterly, 49*(3), 373-389. doi:10.1353/mpq.2003.0016

Vandenberg, R.J. (2002). Toward a further understanding of an improvement in measurement invariance methods and procedures. *Organizational Research Methods*, *5*(2), 139-58.

Van Veelen, R., Otten, S., & Hansen, N. (2013). Social identification when an in-group identity is unclear: The role of self-anchoring and self-stereotyping: Identification

with an unclear in-group. *British Journal of Social Psychology, 52*(3), 543-562. doi:10.1111/j.2044-8309.2012.02110.x

Vryan, K.D., Adler, P.A., & Adler, P. (2003). Identity. In L.T. Reynolds & N.J. Herman-Kinney (Eds.), *Handbook of symbolic interactionism* (pp. 367-390). Lanham, MD: AltaMira Press.

Waal, F. B. M. (2008).Putting the altruism back into altruism: The evolution of empathy. *Annual Review of Psychology* 59: 279-300.

Walker, J. S., & Gudjonsson, G. H. (2006). The maudsley violence questionnaire: Relationship to personality and self-reported offending. *Personality and Individual Differences, 40*(4), 795-806. doi:10.1016/j.paid.2005.09.009

Walters, G. D. (2003). Changes in criminal thinking and identity in novice and experienced inmates: Prisonization revisited. *Criminal Justice and Behavior, 30*(4), 399-421. doi:10.1177/0093854803253137.

Wang, J., Jichuan, W., & Wang, X. (2012). *Structural equation modeling: Applications using mplus* (3. Aufl. ed.). Oxford: Wiley-Blackwell. doi:10.1002/9781118356258

Ward, T. & Brown, M. (2004). The good lives model and conceptual issues in offender rehabilitation. *Psychology, Crime, & Law*, 10, 243-257.

Ware, M. (2008). Peer review: benefits, perceptions and alternatives. Publishing Research Consortium. Available at http://www.publishingresearch.net/documents/ PRCsummary4Warefinal.pdf

Waterman, A. S. (1985). *Identity in the Context of Adolescent Psychology*. New Directions for Child Development., 30, San Francisco: Josey-Bass.

Wiggins, J. S. (1979). A psychological taxonomy of trait- descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology*, 37, 395–412.

Wilson, N. J. (2002). Recidivism study Hawks Bay Young offenders Unit (YOU). New Zealand Department of Corrections Psychological Service: Unpublished Internal memo, 1 November 2002. In Wilson, N. J. (2004). New Zealand high-risk offenders: Who are they and what are the issues in their management and treatment? Department of Corrections.

Youth Justice Board (2008). *Annual Statistics.* Retrieved from https://www.gov.uk/ government/ statistics/ youth-justice-annual-statistics-2008-2009

Youth Justice Board (2009). *Annual Statistics.* https://www.gov.uk/government/ statistics/ youth-justice-annual-statistics-2008-2009

Zhou, Q., Eisenberg, N., Losoya, S. H., Fabes, R. A., Reiser, M., Guthrie, I. K., Murphy, B. C., Cumberland, A. J., & Shepard, S. A. (2002). The relations of parental warmth and positive expressiveness to children's empathy-related responding and social functioning: A longitudinal study. *Child Development* 73: 893-915.

Zimbardo, P. G. (1970). The human choice: Individuation, reason and order versus deindividuation, impulse and chaos. In W. J. Arnold and D. Levine (Eds.). Lincoln: University of Nebraska Press.

Appendices

Appendix A

Survey Booklet for Young Person

(including information sheet, consent form and debriefing form)

Information Sheet for Young Person

Project institution: Department of Psychology, University of Huddersfield.

Project researchers: Alisa Spink (Alisa.Spink@hud.ac.uk) and Dr Daniel Boduszek (supervisor) (D.Boduszek@hud.ac.uk)

You are being invited to take part in this study. Before you decide to take part, it is important that you understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the study about?
The purpose of this research is to provide a better understanding of how young people, like yourself, become involved in offending behaviour. The aim of the study is to improve services provided to young people.

Why I have been approached?
You have been asked to participate because you are working with the youth offending team.

What will I need to do?
If you agree to take part in this study, you will be asked to answer some questions, which will take approximately 20-30 minutes to complete. Questions will be based around the following areas; Personality, Views on offending and offenders, Self-esteem and attachment towards friends and parent/guardian(s).

It is very unlikely that the questions will cause you to become upset or distressed, however, if such topics lead to emotional difficulties, please talk to your YOT worker on 01226 774986 or drop into the office to see them. In case of an emergency ring 999.

What if I don't understand a question?

The questions will be completed as part of a one to one session with your YOT worker. Nobody else will be able to answer a question for you, as you will need to answer the questions yourself. However, your YOT worker will be present to assist you with any difficulties you have in understanding or reading the questions. There are no right or wrong answers to the questions and they are purely based on your experience.

Will my name be disclosed?
Your YOT worker will place the survey in a sealed envelope which will be passed to the researchers. The researchers will not be provided with your names and in any written reports you shall not be named. All information collected from you during this research will be kept secure.

What will happen with my answers?

The answers from all young people will be collected and analysed. The summary of information will then be shared with YOT workers and used in peer-review articles. At no point, will individuals' answers be referred to using identifiable information.

Do I have to take part?
We would be very grateful if you agree to take part in the research, however, it is your decision whether or not you take part. If you decide not to take part, this will be respected as your decision and will not have any effect on the way you are treated by the youth offending team. If you decide to take part you will be asked to give your consent on a form. You will be free to not answer particular questions or to withdraw from the research entirely at a later date and without giving a reason.

What if I want to withdraw?

If you have completed the questionnaires, but change your mind and wish to withdraw, then you can do so as long as it is before 31st December 2016. Each separate question booklet will have a different number. In order to withdraw please take a note of the number on your set of sheets when filling out the questions. Then ask your YOT worker to email the researcher with this number to withdraw.

Who can I contact for further information?
If you require any further information about the research, please contact your YOT worker on 01226 774986.

I would be very grateful if you would take the time to answer the questions, and thank you in advance for your participation.

Alisa Spink.

PHD Criminal Psychology

University of Huddersfield

Consent Form

It is important that you read, understand and consent if you wish to take part in the research. Your contribution to this research is voluntary and you do not have to participate.

If you are happy that you understand the information and are happy to take part in this project, please complete the following:

	Yes	No
I have been told about what this research is about		
I consent to taking part in it		
I understand that I can withdraw from the research at any time, before 31st December 2016, without giving any reason		
I understand that the researcher will not know my name or personal details. Such information collected will be kept in secure conditions for a period of five years at the University of Huddersfield		
I am happy for the researcher to use my answers for reports, journal articles and conference presentations		

Question Booklet

Please write your age: __ years
Gender? (Please tick one box). [ ] Male [ ] female
I live [ ] with both parents [ ] with one parent [ ] without parents (i.e. on my own) [ ] with step parents [ ] with grandparents [ ] with foster parents [ ] in a care home

Please indicate to what extent you agree or disagree with the following statements:

		Agree	Disagree
1	I don't care if I upset someone to get what I want.		
2	Before criticizing somebody, I try to imagine and understand how it would make them feel.		
3	I know how to make another person feel guilty.		
4	I tend to focus on my own thoughts and ideas rather than on what others might be thinking.		
5	What other people feel doesn't concern me.		
6	I always try to consider the other person's feelings before I do something.		
7	I know how to pay someone compliments to get something out of them.		
8	I don't usually appreciate the other person's viewpoint if I don't agree with it.		
9	Seeing people cry doesn't really upset me.		
10	I am good at predicting how someone will feel.		
11	I know how to fake emotions like pain and hurt to make others feel sorry for me.		
12	In general, I'm only willing to help other people if doing so will benefit me as well.		
13	I tend to get emotionally involved with a friend's problems.		
14	I'm quick to spot when someone is feeling awkward or uncomfortable.		
15	I sometimes provoke people on purpose to see their reaction.		
16	I believe in the motto: "I'll scratch your back, if you scratch mine" (which means that I will only help people if they help me)		
17	I get filled with sorrow when people talk about the death of their loved ones.		
18	I find it difficult to understand what other people feel.		
19	I sometimes tell people what they want to hear to get what I want from them.		
20	It's natural for human behaviour to be motivated by self-interest.		

	Completely Disagree	Disagree	Agree	Completely Agree
1. I have a strong sense of security because I personally know people who have broken the law				
2. It doesn't bother me that I am/ was involved in antisocial acts				
3. Most of my opinions and views are similar to those who break the law				
4. I get respect from others because I was involved in antisocial activities				
5. I'm tougher than the average person because I'm not afraid to break the law from time to time				
6. I share my personal experiences with others who break the law				
7. I care about my friends who break the law				
8. Being with my friends who break the law makes me feel stronger				
9. I feel comfortable when I am with my friends who break the law				
10. When I am with my friends who break the law, I feel I belong somewhere				
11. I have a lot in common with other people who have been involved in antisocial acts				
12. I feel close to other people who have been involved in antisocial acts				
13. I find it easy to make friends with other people who have been involved in antisocial acts				
14. I find it relatively easy to get close to those involved in some antisocial activities				
15. I'm there for my friends even if they have committed a crime				

	Please read the following questions and indicate how often you think in those ways about yourself:	Never	Sometimes	Most of the time	Always
1	How often do you feel you are worse than most of the people you know?				
2	How often do you feel that you can't do anything well?				
3	When in a group of friends, do you have trouble thinking of the right things to say?				
4	How often are you bothered about what other people think of you?				
5	How often do you think that you are worthless?				
6	How often do you dislike yourself?				
7	How often do you worry that other people might have a bad opinion of you?				

Think of 3 friends you spend most of your time with and then answer four questions about them. Please DO NOT write the name of any of your friends (just think of them in your head)

Friend 1: How much of your free time do you spend with this person? (Please tick one)

Not a lot	quite a lot	lots of time

Please circle Yes or No

(a) Has this person ever committed a crime? Yes No

(b) Does this person have a criminal record? Yes No

(c) Has this person ever been to prison? Yes No

(d) Has this person tried to involve you in a crime? Yes No

Friend 2: How much of your free time do you spend with this person? (Please tick one)

Not a lot	quite a lot	lots of time

Please circle Yes or No

(a) Has this person ever committed a crime? Yes No

(b) Does this person have a criminal record? Yes No

(c) Has this person ever been to prison? Yes No

(d) Has this person tried to involve you in a crime? Yes No

Friend 3: How much of your free time do you spend with this person? (Please tick one)

Not a lot	quite a lot	lots of time

Please circle Yes or No

(a) Has this person ever committed a crime? Yes No

(b) Does this person have a criminal record? Yes No

(c) Has this person ever been to prison? Yes No

(d) Has this person tried to involve you in a crime? Yes No

Think about your school. Please mark an "X" on the line to the left of the answer that is most like how you feel for each question.

1. How many students in your class do you get along with?
_____I get along with everybody in this class
_____I get along with most of them
_____I get along with half of them
_____I get along with few of them

_____I get along with nobody in my class

2. How many students in your class do you NOT get along with? These are people who you don't like and don't want to be around.
_____I get along with everybody in this class
_____I don't get along with a few of them
_____I don't get along with half of them
_____I don't get along with most of them
_____I don't get along with anybody in this class

3. How many students in your class respect you and listen to what you have to say?
_____Nobody
_____Only a few of them
_____Half of them
_____Most of them
_____All of them

4. How many students in this class tease you, put you down, or pick on you?
_____Nobody
_____Only a few of them
_____Half of them
_____Most of them
_____All of them

	Please answer the following questions about your parents or guardians:	Not at all	Somewhat	Quite a bit	Very much
1	They are persons I can count on to provide emotional support when I feel troubled.				
2	They support my goals and interests				
3	They understand my problems and concerns				
4	They are available to give me advice or guidance when I want it				
5	They give me as much attention as I want				
6	They ignore what I have to say				
7	They are sensitive to my feelings and needs				
8	They make me feel loved and important				
9	They discipline me when necessary				

	How much do your parents/guardians know about certain aspects of your life?	Almost nothing	Very little	Something	Almost everything
1	How much do your parents know about your close friends				
2	How much do your parents know about what you are doing with your friends				
3	How much do your parents know about your close friends' parents				
4	How much do your parents know about who you are with when you are not at home				
5	How much do your parents know about what you are doing at school				
6	How much do your parents know about your teachers				

	Please rate the degree to which you agree with the following statements.	Completely disagree	Mostly disagree	Mostly agree	Completely agree
1	In general, the people who have committed a crime have some very bad characteristics.				
2	I do not mind people committing crimes.				
3	I think this country would be better off without so many people who have committed a crime				
4	I don't understand people having a negative attitude to people who have committed a crime.				
5	People in general are no better in any way than my friends who have committed a crime				

Debriefing Form

Thank you for participating in this study. The contributions that were made are very much appreciated and would not be possible without your help.

The purpose of this study was to develop a better understanding of offending behaviour in young people to provide better support. In order to investigate this, you and other participants filled out a questionnaire about yourself and your attitudes.

Additionally, should you feel that you require any support after completing this, please consult your YOT worker.

Thank you once again for participating in this study. Without the active role participants played there would not be such advancement in science developing more every day.

Alisa Spink.

Appendix B

Information Sheet for YOT workers

Information sheet for YOT workers

Thank you for assisting with the present research project into reasons behind offending behaviour of young people. It would be appreciated if you could support and encourage the young people you work with as this will assist our ability to help them.

What do I have to do?

As outlined in the training, as part of a usual one to one session please conduct a structured interview based on the questionnaire booklet. You are not there to provide answers for the young person, but your presence is to ensure their understanding.

Do they have to give consent?

Prior to completing the questionnaires, please ensure that you go through the first 3 pages of the booklet, outlining details of the research, and obtain a completed consent form if the youth wishes to partake in the research.

What does the questionnaire booklet entail?

- Information sheet for the young person
- Consent Form
- Questionnaires
- Debrief Form

The above sheets will be supplied in an unsealed envelope. Please place the completed questionnaire in the envelope and collate them for the designated research assistant at your office. Please also include the completed consent form in the envelope.

If you wish to know further information on the research project please do not hesitate to contact me, using the details below.

When do they have to be completed by?

All forms will ideally be required by myself by 1st December 2016, so I can analyse information in time for submission. Therefore, if some young people require more time, then there is flexibility in this.

Who do I give the questionnaires to?

I shall be collecting questionnaires on several occasions throughout the data collection period. Please hand completed questionnaire booklets to DESIGNATED PERSON, where I shall collect them from.

All I require back is the consent form and completed questionnaires, in their sealed envelopes.

Do I need to put the young person's name on any documents?

Researchers shall not require names of individuals as they are to remain unidentifiable throughout the research project. Each questionnaire booklet shall be provided a number and young persons will be requested to take a note of that number, in case they wish to withdraw from the research at a later date. It may also be useful for you to note the number of the booklet in case the young person loses the number.

What if the young person wishes to withdraw?

If a young person tells you they wish to withdraw please obtain their unique number from them and email myself with the number stating that they wish to withdraw. The cut-off date for this being 31st December 2016. Please do not include any personal information of the young person, i.e. their name.

What if the young person doesn't want to take part / can't answer a question?

The young persons are not obliged to take part and this is discussed in their information sheet. If they struggle to answer any questions, please assist in their understanding, but remember they are not obliged to answer.

What if the young person is upset or distressed by the questionnaire?

There is a low risk of any distress experienced by the young person from completing the questionnaires. If the young person experiences any distress, please handle this in line with your current procedures.

Who to contact should I have any questions?

Please do not hesitate to contact myself on the following numbers/email (**Please do not disclose contact details as these are confidential)**;

Phone: - - - - - - - - -

Email: alisa.spink@hud.ac.uk

Thank you very much for your assistance. It is of great help to myself for research opportunities and also for the YOT to enhance their services.

Alisa Spink (BSc, MSc)

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Appendix C

Publication: Validation of the Measure of Delinquent Social Identity Among Youth Offenders in the UK

DEVIANT BEHAVIOR
https://doi.org/10.1080/01639625.2018.1456723

Validation of the Measure of Delinquent Social Identity Among Youth Offenders in the UK

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ABSTRACT

The current study aimed to develop and validate the Measure of Delinquent Social Identity (MDSI). Dimensionality and construct validity of the MDSI was investigated in a sample of youth offenders (N = 536). Four alternative models of the MDSI were estimated using Mplus. The model identified as being the best fit for the data was a bifactor model with three dimensions (cognitive centrality, in-group affect, in-group ties) while controlling for the general factor. The three subscales differentially correlated with criminal friend index, self-esteem, parental attachment, and peer rejection. Limitations and advantages, including practical implications, of the current research are discussed.

ARTICLE HISTORY

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The construct of social identity is viewed as multidimensional, due to its complex nature combining emotional and cognitive aspects (Cameron 2004; Tajfel 1978). Measures of social identity have therefore tried to incorporate the multidimensionality of the concept to develop a valid measure, yet not all dimensions were adequately represented. The three key areas which were focused on were as follows: awareness of group membership, group evaluation, and emotional aspects of belonging (Brown et al. 1986; Hinkle et al. 1989). One of the more recent and widely used measures of social identity was established by Cameron (2004). The measure consists of three subscales: cognitive centrality, in-group ties, and in-group affect. Cognitive centrality refers to the psychological prominence and importance of belonging to the social group based on the individuals' thought processes, corresponding to the concept of self-categorization. In-group affect explains the degree of positive feelings the individual has toward the group and its members. In-group ties relate to the perceived bond, i.e., emotional connection and loyalty, the individual has with the group and its members (Jackson 2002).

Criminal social identity model

In 2003, Walters began to explore social identity within offenders by adapting Cameron's (2004) Social Identity Scale. However, there has been little advancement in this research field, until recently. Expanding on the theory of Criminal Social Identity (CSI; Boduszek and Hyland 2011), Boduszek, Dhingra, and Debowska (2016b) proposed the integrated psycho-social model of CSI (IPM-CSI), which is based upon empirically tested theories of the origins of CSI. The IPM-CSI is a multistage

model based upon four concepts; (1) an identity crisis that results in weak bonds with society, peer rejection, and is associated with poor parental attachment and supervision; (2) exposure to a criminal/antisocial environment in the form of associations with criminal friends before, during, and/or after incarceration; (3) a need for identification with a criminal group in order to protect one's self-esteem and (4) the moderating role of personality traits in the relationship between criminal/antisocial environment and the development of CSI.

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Boduszek, Adamson, Shevlin and Hyland (2012) developed the Measure of Criminal Social Identity (MCSI) specifically for use on offender populations. Using the same principle as Cameron (2004), Boduszek et al. (2012) devised an eight-item self-report measure, incorporating the three subscales and concepts as in Cameron's (2004) measure (cognitive centrality, in-group affect, and ingroup ties). Responses are recorded on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with scores ranging from 8 to 40. Using confirmatory factor analysis, Boduszek et al. (2012) confirmed that a three-factor model was the best fit for the data. In support of this, a study utilizing a sample of offenders from three different countries (N = 1171) confirmed the three-factor model as the best fit (Sherretts and Willmott 2016). Boduszek et al. (2012) identified that high scores on the MCSI indicate that criminal identity is crucial for an individual's self-concept. Individuals with increased MCSI scores are likely to approve of and behave in a manner consistent with the group norms, even in the absence of other group members.

Studies utilizing the MCSI explored correlations between the MCSI facets and external factors. This allowed exploration of the predictive factors of CSI, which is important to the prevention and intervention of developing a CSI. Early research using a sample of 312 male adult reoffenders incarcerated in maximum security Prison in Poland, identified that higher scores on cognitive centrality were associated with increased self-esteem (Boduszek et al. 2013b) and that criminal friend index was significantly positively associated with all three dimensions of CSI (Boduszek, Hyland, Bourke, Shevlin and Adamson 2013a). Increased scores on in-group ties facet were also found to serve as a protective factor against suicide ideation within a sample of 415 imprisoned juvenile offenders (Shagufta et al. 2015). Boduszek, Dhingra, and Debowska (2016a) utilized 126 male juvenile offenders from Pakistan. Using correlational analysis, they reported a significant positive correlation between CSI and criminal friend index; however, the relationship between the separate dimensions of CSI and criminal friend index was not reported. In contrast to Boduszek et al. (2016), Sherretts, Boduszek, and Debowska (2016) found, among 501 male and female offenders incarcerated in three prisons in Pennsylvania State, no direct relationship between any of the dimensions of CSI and criminal friend index. Additionally, in-group ties dimension was related with the female gender, indicating that women are more likely to form stronger bonds and identification with in-group members than males because of their greater need to be an accepted and supported member of a group (see Brown and Lohr 1987; Kiesner et al. 2002; Newman, Lohman, and Newman 2007).

It was recognized that, while useful across different populations, the MCSI has limitations. Inconsistent research findings have been presented regarding the internal consistency (as measured using Cronbach's α) of the three subscales and the MCSI total score; ranging from critical (Sherretts, Boduszek, and Debowska 2016), acceptable (Boduszek, Dhingra and Debowska 2016; Sherretts, Boduszek, and Debowska 2016), good (Boduszek, Debowska, Dhingra and DeLisi 2016a), to strong (Boduszek et al. 2013a). It is also argued that the MCSI is not consistent across different populations.

More specifically, whereas most factor loadings for the scale items were strong in Sherretts and Willmott's (2016) study, some factor loadings for the US and Pakistani samples were below the critical value (<.40). Consisting only of eight items, the MCSI may be insufficient to reflect three latent factors (cognitive centrality, in-group affect, and in-group ties) of such a complex psychological construct. It was thus suggested that the MCSI should be revised and extended in order to increase its reliability and provide a better coverage of the theoretical construct (as recommended by Hair et al. 2010).

Development of the Measure of Criminal Social Identity – revised (MCSI-R)

CSI appears to be a crucial concept within the criminal justice system and hence further research into developing a reliable and valid measure of CSI was warranted (e.g., Boduszek et al. 2013c; Shagufta et al. 2015; Sherretts, Boduszek, and Debowska 2016). Boduszek and Debowska (2017), using a systematically selected sample of 2,192 male adult prisoners, developed a revised version of the MCSI, the MCSI-R, whereby the content was extended in order to better reflect the three CSI factors (cognitive centrality, in-group affect, and in-group ties). Item generation for the MCSI-R relied on the theoretical conceptualization of CSI and its three dimensions, as well as discussions with a panel of experts. The new 18-item scale includes eight original items of the MCSI, with each dimension measured with six items and responses indexed on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Confirmatory factor analysis revealed a bifactor model, with the aforementioned three factors, was the best fit for the data. Good composite reliability of the three MCSI-R dimensions was also established. Furthermore, through regression analyses, a significant positive correlation between cognitive centrality and in-group ties with prisonization; a significant negative correlation between cognitive centrality and self-esteem; a significant positive relationship between in-group ties and self-esteem; and a significant positive relationship between cognitive centrality and in-group ties with violent offending. The only significant predictor of number of incarcerations was the in-group ties factor. This suggests that the strength and type of interaction between external variables and CSI varies according to the CSI dimension. Boduszek and Debowska identified a need to validate the MCSI-R among female offenders, youth offenders, inmates from different cultural backgrounds, as well as non-incarcerated criminal samples in order to verify its factorial invariance. Furthermore, they also noted that future studies should control for other factors associated with in-group affect, since in-group affect dimension did not form any significant correlations with external criteria.

The current study

Although the MCSI-R appears to be a valid measure of CSI among adult male prisoners, the instrument is in need of validation with other offender samples, particularly youths, female and non-incarcerated offenders. However, not all MCSI-R items designed with adults in mind may be appropriate for use with youths. Consequently, the first objective of the current study was to adapt the MCSI-R for youth offenders and the resultant measure will be referred to as the Measure of Delinquent Social Identity (MDSI). The second objective was to investigate the factor structure of the MDSI using confirmatory factor analysis. In line with Boduszek and Debowska's (2016) recommendations, a comprehensive approach to the assessment of scale dimensionality was adopted by testing four competing models, including bifactorial solution. Finally, the internal consistency of the scale using composite reliability was assessed (see Boduszek and Debowska 2016; Debowska et al. 2014; Sherretts and Willmott 2016) and the differential predictive validity of the MDSI factors was explored.

Method

Sampling procedure

An opportunistic sampling procedure was applied in the present research. Youth offending teams (YOTs) within the Yorkshire area were approached, of which five teams agreed to take part in the research. Printed self-reported anonymous surveys were delivered by the authors to all YOTs. Data collection took place during one to one sessions held between the youth offender and their youth worker. The youth workers, trained by the authors, clarified the nature and purpose of the study, explained that data collection was anonymous, and provided a summary of the informed consent to all participating youth offenders. To minimize sampling bias and maximize the generalizability of findings, participants were encouraged to complete the survey in the presence of their youth worker. This allowed the youth offender and their worker to discuss the content of the survey. The youth workers had already developed a professional relationship with their youth offenders, encouraging an open and honest approach. Given youth offenders' standing as a vulnerable population and the potential that they may feel compelled to participate, it was made clear both in the consent form and verbally that participation was voluntary, without any form of reward. Youth offenders consenting to participate were instructed to place completed surveys in envelopes and return them to their youth worker, or their youth worker would do this on their behalf. Completed surveys were collected from all participating YOTs by the authors.

Sample

The only inclusion criterion was that participants were currently serving a sentence with the YOT and were aged between 12 and 17 years old. Although the YOT engages with young persons from the age of 10, it was deemed that the nature of the questionnaires could cause some unnecessary discomfort or distress to those under the age of 12. They could also struggle to understand certain concepts. The authors approached N = 624 youth offenders in total and N = 536 returned completed surveys (response rate = 85.9%). There was no missing data, which is likely due to youth workers assisting youth offenders in the completion of the survey. Therefore, N = 536 of youth offenders were included in the current analysis (age range from 12 to 17, M = 15.26, SD = 1.13, Mdn = 15, and Mode = 15). The sample comprised of n = 348 (64.9%) males and n = 188 (35.1%) females. Two hundred and three (n = 203, 37.9%) participants were living with one parent, 137 (25.6%) living in a care home, 86 (16%) living with both parents, 54 (10.1%) living in foster care, 34 (6.3%) living with grandparents, 12 (2.2%) living without parents and 10 (1.9%) living with step parents.

Measures

MDSI is adapted from the MCSI-R (Boduszek and Debowska 2017). The MCSI-R consists of 18 items (six for each dimension of CSI) and responses are measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). In the development of the MDSI, discussions took place with a panel of professionals, consisting of youth workers, YOT managers, and a mental health worker based at the YOT. Based on the panel's advice, the wording of some MSCI-R items was altered to be more adaptable to the age group of the participants and the number of items was reduced by one per each dimension, due to the likely short attention span of those under 18 years of age. Therefore, the

MDSI consists of 15 items scored in the same direction. The Likert scale was also reduced to 4 points rather than 5. The proposed scale was initially administered to N = 10 youth offenders to test their ability and understanding in completion of the measure. Participating youth offenders provided feedback on item comprehension and response format. Generally, youth offenders understood the content but had difficulties with two items. As such, the problematic items were re-written to increase their clarity. The final version of the MDSI consists of 15 items scored on a 4-point Likert scale (1 = completely disagree to 4 = completely agree). Scores range from 15 to 60, with higher scores suggesting enhanced levels of delinquent social identity. The scale consists of three subscales: cognitive centrality (five items) subscale measures the psychological salience of a delinquent's group identity; in-group affect (five items) subscale measures a delinquent's felt attitude toward other in-group criminals; and in-group ties (five items) subscale assesses the level of personal bonding with other delinquents.

Self-Esteem Measure for Delinquents (SEM-D) is adapted from the Self-Esteem Measure for Prisoners (SEM-P; Debowska, Boduszek, and Sherretts 2017). The SEM-P is an 8-item self-report measure assessing self-esteem among incarcerated adult populations. The measure consists of two subscales: prison-specific self-esteem (four items), looking at self-esteem in a specific context, and personal self-esteem (four items), inquiring into self-esteem in a context-free manner. Responses are indexed on a 4-point Likert scale (1 = never, 4 = always). The items of the measure were adapted to suit the non-prison population and youth age group. Due to this, one of the items was removed as it was not deemed suitable for the sample population. Scores for the total scale range from 7 to 28, with higher scores indicating increased levels of self-esteem.

The Measure of Criminal Attitudes and Associates (MCAA; Mills and Kroner 1999) is a two-part self-report measure of associations with criminal friends and criminal thinking style. For the purpose of this study only Part A will be used. Part A of the measure intends to quantify criminal associations. Participants are asked to recall three individuals with whom they spent most of their time and then answered four questions regarding the degree of criminal involvement of their associates: (a) "Has this person ever committed a crime?", (b) "Does this person have a criminal record?", (c) "Has this person ever been to prison?", and (d) "Has this person tried to involve you in a crime?". This measure is referred to as the criminal friend index, calculated by assigning 1 through 3 to the amount of time spent with each friend (1 = not a lot, 2 = quite a lot, and 3 = lots of time). That number is then multiplied by the number of "yes" responses to the four questions of criminal association. All answers are summed as the criminal friend index.

Peer rejection (Mikami, Boucher, and Humphreys 2005) is a 4-item self-report/retrospective inventory with a 5-point Likert scale response format ranging from a positive (5) to a negative (1) answer, with one reverse-scored question. Thus, the possible total score can range from a minimum of 4 to a maximum of 20, with higher scores reflecting more positive peer relations and lack of rejection. Participants are asked to indicate the number of peers they like versus dislike in the class they attend (Sample question: "How many students in your class did you get along with?"). In addition, participants are asked to estimate the number of peers who respected them versus those who tended to pick on them (sample question: "How many students in your class teased you, put you down, or picked on you?").

Parental attachment (Ingram et al. 2007) is a 9-item self-report measure of the nature of the relationship between offenders and their parents, asking questions about both positive and negative aspects of attachment to parents. Participants were asked how often they felt each statement was true (e.g., positive relationship "They support my goals and interests"; negative relationship "They ignore what I have to say"). Answers were based on a 4-point Likert type scale ranging from 1 (not at

all) to 4 (very much). Thus, the possible total score can range from a minimum of 9 to a maximum of 36, with higher values indicating stronger parental attachment.

Demographics questionnaire
Furthermore, the following data were obtained: age, gender and living condition (with both parents, with one parent, without any caregivers, with step parents, with grandparents, with foster parents, in a care home).

Analytical procedure

The dimensionality and construct validity of the MDSI was investigated using traditional CFA techniques and confirmatory bifactor analysis (see Reise, Moore, and Haviland 2010). Four alternative models of the MDSI were specified and tested using Mplus version 7.4 (Muthén and Muthén 19982015), with weighted least-squares means and variance-adjusted (WLSMV) estimation.

Model 1 is a one-factor solution where all 15 MDSI items load onto a single latent factor of delinquent social identity. Model 2 is a correlated two-factor solution where items load on cognitive centrality factor (items 1, 2, 3, 4, and 5) and affective traits (all remaining items) factor (this solution was suggested by Jackson 2002). Model 3 is a correlated three-factor solution where items load on cognitive centrality factor (items 1, 2, 3, 4, and 5), in-group affect factor (items 6, 7, 8, 9, and 10), and in-group ties factor (items 11, 12, 13, 14 and 15) (this solution was suggested by Cameron 2004). Model 4 is a bifactor conceptualization with one general factor of delinquent social identity and three subordinate factors described in Model 3. Considering bifactor conceptualization is important because it assists with assessing the validity of a single general factor while also acknowledging and incorporating aspects of multidimensionality (Boduszek and Debowska 2016).

The overall fit of each model and the relative fit between models were assessed using a range of goodness-of-fit statistics: the $\chi 2$ statistic, the comparative fit index (CFI; Cronbach 1990), and the Tucker Lewis Index (TLI; Tucker and Lewis 1973). For CFI and TLI, values >0.95 indicate good model fit (Bentler 1990; Hu and Bentler 1999). In addition, the root-mean-square error of approximation (RMSEA; Steiger 1990) with 90% confidence interval is presented. Ideally, this index should be <0.05 to suggest good fit however, values equal to or <0.08 are acceptable (Bentler 1990; Hu and Bentler 1999). Furthermore, the weighted root-mean-square residual (WRMR) was used to evaluate the alternative models, with the smaller value indicating the best-fitting model.

Alpha coefficients as indicators of internal consistency have been criticized within a latent variable modeling context due to their reliance on both the number of items tested as well as correlations between them (see Cortina 1993; Raykov 1998). Thus, this research assessed the internal reliability of the MDSI using composite reliability (for procedure see Raykov 1997; for application in empirical research see Boduszek et al. 2016c; Debowska et al. 2014). Values >.60 are generally considered acceptable.

Results

Descriptive statistics for three MDSI factors, criminal friend index, attachment, rejection and selfesteem are presented in Table 1.

Fit indices for four alternative models of MDSI are presented in Table 2. One-factor model, correlated two-factor model, and correlated three-factor model were rejected based on the RMSEA statistic (value >.08). Bifactor model of the MDSI provides the best fit to the data based on all statistics (CFI = .98, TLI = .97, RMSEA = .08 [90%CI = .07/.09], WRMR = 1.76).

The appropriateness of the bifactor model of the MDSI can also be determined based on statistically significant factor loadings (Table 3). Inspection of the factor loadings for the three delinquent social identity factors provides imperative evidence regarding the correctness of including these latent factors in the scoring of the MDSI. Most items loaded more strongly on each of the three delinquent social identity factors and less strongly on general factor. Items 1, 2, and 5 (but not items 3 and 4) loaded more strongly on cognitive centrality than the general factor. Items 7, 9, and 10 (but not items 6 and 8) loaded more strongly on in-group affect than the general factor. Items 11, 12, and 15 (but not items 13 and 14) loaded more strongly on in-group ties than the general factor. This indicates the supremacy of the three factors of delinquent social identity over the general factor in the conceptualization of the factor structure of the MDSI. These results advocate that the delinquent social identity is composed of three subscales (cognitive centrality, in-group affect, and in-group ties) while controlling for the general factor.

Table 1. Descriptive statistics for the MDSI factors, criminal friend index, attachment, rejection, and self-esteem.

Variables	M	SD	Mdn	Observed min.	Observed max.
Cognitive centrality	13.73	3.02	14	5	20
In-group affect	13.80	2.70	14	5	20
In-group ties	14.48	3.07	15	5	20
Criminal friend index	19.37	5.66	19	4	33
Attachment	19.70	6.03	18	9	36
Rejection	11.51	2.34	11	6	19
Self-esteem	15.62	2.73	15	7	22

Table 2. Fit indices for four alternative models of the MDSI.

Models	χ^2	df	CFI	TLI	RMSEA	90% CI	WRMR
1. One-factor	1335.53	90	0.95	0.95	0.10	0.09–0.11	3.01
2. Correlated 2 factors	1164.17	89	0.96	0.96	0.09	0.08–0.10	2.78
3. Correlated 3 factors	1140.54	87	0.97	0.96	0.09	0.08–0.10	2.74

4. Bifactor	759.42	72	0.98	0.97	0.08	0.07–0.09	1.76

Note. χ^2 = chi-square goodness-of-fit statistic; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker Lewis Index; RMSEA = root-mean-square error of approximation; CI = confidence interval; WRMR = weighted root-mean-square residual.

Table 3. Standardized factor loadings for the three MDSI factors (C = cognitive centrality, A = in-group affect, T = in-group ties) and general factor (G).

MCSI-R items	G	C	A	T
1. I have a strong sense of security because I personally know people who have broken the law	.67***	.70***		
2. It doesn't bother me that I am/was involved in antisocial acts	.16	.99***		
3. Most of my opinions and views are similar to those who break the law	.66***	.49***		
4. I get respect from others because I was involved in antisocial activities	.72***	.53***		
5. I'm tougher than the average person because I'm not afraid to break the law from time to time	.20	.92***		
6. I share my personal experiences with others who break the law	.56***		.41***	
7. I care about my friends who break the law	.63***		.63***	
8. Being with my friends who break the law makes me feel stronger	.70***		.55***	
9. I feel comfortable when I am with my friends who break the law	.51***		.60***	
10. When I am with my friends who break the law, I feel I belong somewhere	.37**		.77***	
11. I have a lot in common with other people who have been involved in antisocial acts	.34***			.87***
12. I feel close to other people who have been involved in antisocial acts	.22*			.92***
13. I find it easy to make friends with other people who have been involved in antisocial acts	.71***			.64***
14. I find it relatively easy to get close to those involved in some antisocial activities	.64***			.63***
15. I'm there for my friends even if they have committed a crime	.56**			.65***

Note. Factor loadings are statistically significant at *p < .05, **p < .01, and ***p < .001.

The correlations between the three delinquent social identity factors were high (cognitive centrality and in-group affect r = .83; cognitive centrality and in-group ties r = .83; in-group affect and in-group ties r = .85), which indicates a significant overlap between the variables. Boduszek and Debowska (2016; see also Carmines and Zeller 1979) suggested that when the best model fit is multidimensional and some factors are highly correlated ($r \geq .50$), a differential predictive validity has to be established in order to verify whether the dimensions are associated differentially with external variables. Table 4 presents the outcome of regression analyses. Based on the results, cognitive centrality and in-group affect form positive significant correlations with criminal friend index, whereas a negative significant relationship is observed between in-group ties and criminal friend index. Both in-group ties and in-group affect associated negatively with self-esteem, whereas cognitive centrality forms a positive correlation with self-esteem. Cognitive centrality and in-group affect are significant predictors of self-esteem, whereas ingroup ties do not significantly predict self-esteem. Cognitive centrality and in-group affect form negative significant correlations with parental attachment, whereas a positive significant relationship is observed between in-group ties and parental attachment. Cognitive centrality and in-group ties form positive correlations with peer rejection, whereas a negative significant relationship is observed between in-group affect and peer

rejection. Both cognitive centrality and in-group affect form significant predictors of peer rejection, whereas in-group ties are not a significant predictor of peer rejection. These results confirm that cognitive centrality, in-group affect, and in-group ties should be included as separate subscales in the MDSI.

Internal reliability of the MDSI factors was investigated using composite reliability instead of Cronbach's α, as suggested by Boduszek and Debowska (2016; see also Raykov 1998). Composite reliability was calculated using the following formula:

$$CR = \frac{\left(\sum \lambda_i\right)^2}{\left(\sum \lambda_i\right)^2 + \sum Var\left(\varepsilon_i\right)}$$

Table 4. Associations between the three MDSI factors and external variables.

Variable	CF (R^2 = .23) β (95% CI)	SE (R^2 = .16) β (95% CI)	ATT (R^2 = .16) β (95% CI)	REJ (R^2 = .10) β (95% CI)
Cognitive centrality	.27*** (.12/.42)	.17* (.01/.32)	−.37*** (−.53/−.22)	.16* (.00/32)
In-group affect	.48*** (.33/.64)	−.49*** (−.66/−.33)	−.26** (−.42/−.10)	−.47*** (−.64/−.30)
In-group ties	−.30*** (−.46/−.15)	−.04 (−.20/.13)	.25** (.09/.42)	.04 (−.13/.21)

Note. ATT = parental attachment; CF = criminal friend index; REJ = peer rejection *p < .05, **p < .01, and ***p < .001.

where CR is the reliability of the factor score, λ_i is the standardized factor loading, and $\mathrm{Var}(\varepsilon_i)$ is the standard error variance. Results suggest that all three delinquent social identity factors (cognitive centrality = .86, in-group affect = .73, and in-group ties = .86) and general factor (.85) demonstrate good internal reliability.

Discussion

Existing research indicates that CSI correlates with various psychosocial and mental health factors, such as self-esteem, suicidal ideation, and violent offending (e.g., Boduszek and Debowska 2017; Boduszek et al. 2013c; Shagufta et al. 2015). Such research is pertinent to prison services, including the national offender management service (NOMS) in the United Kingdom, as theoretical underpinnings can be utilized in the development of intervention programs and risk assessments to be administered in prisons and the community. While Boduszek and Debowska (2017) devised a reliable and valid measure of CSI for adult male offenders, such measures have not been validated with youth offenders or females. In considering that existing risk assessments and offender behavior programs differ for youth offenders compared with adult offenders, the aim of the current study was to adapt the Measure of Criminal Social Identity – revised (MCSI-R) for youths, resulting in the development of the MDSI. Another aim was to validate the MDSI as well as assess the differential predictive validity of its three dimensions.

Researchers have argued that, when assessing construct validity and dimensionality of a concept, more than one solution should be tested as this explores the true nature of the depth of the measure (Boduszek and Debowska 2016). In the current study, four alternative models of the MDSI (a onefactor model, two-factor model, three-factor model, and a bifactor model with three grouping factors) were investigated, using confirmatory factor techniques. Results indicated that the only acceptable solution (as shown by all fit statistics) for the 15-item MDSI was the bifactor model with three grouping factors (cognitive centrality, in-group affect, and in-group ties) while controlling for a general factor. The three grouping factors explained the majority of covariation and hence were utilized as the basis for constructing the subscales of the measure (see Reise, Moore, and Haviland 2010). As aforementioned, bifactor conceptualization is important because it assists with assessing the validity of a single general factor while also acknowledging and incorporating aspects of multidimensionality (Boduszek and Debowska 2016). Thus, this approach to data modeling encompasses the complex, multidimensional psychological concept of CSI, which is in line with Boduszek and Debowska's (2017) MCSI-R.

The three MDSI facets were found to be highly associated (ranging from .83 – to .85) with one another, indicating that they may measure the same concept (Carmines and Zeller 1979). Thus, in line with Boduszek and Debowska's (2016) recommendations, a test of differential predictive validity was applied to identify whether the three dimensions of MDSI correlate differently with external factors. Indeed, the present results demonstrated that the three delinquent social identity factors correlated differentially with external measures, confirming their conceptual distinctiveness. Specifically, cognitive centrality and in-group affect associated significantly with criminal friend index in the positive direction, indicating that associations with criminal friends may enhance identification and an emotional attachment (sense of belonging) with other delinquents. In contrast, in-group ties associated negatively with criminal friend index, indicating that youths with fewer friends may value the friendships they develop more, resulting in stronger bonds with them. Conversely, previous findings failed to identify a significant correlation between criminal friend index and CSI (Sherretts, Boduszek, and Debowska 2016), whereas other findings revealed a significant positive relationship between criminal friend index and all three dimensions of CSI (Boduszek et al. 2013b). Such contrasts may be due to differences in samples recruited, highlighting the importance of validating measures within different populations.

It has been proposed that feeling part of a group can lead to a sense of belonging somewhere and, as a result, increase self-esteem (Tajfel and Turner 1979). In support of this, a recent study identified a positive relationship between self-esteem and in-group ties (Boduszek and Debowska 2017). However, it was also demonstrated that cognitive centrality CSI dimension forms an association with negative self-esteem, indicating that identifying with other offenders lowers self-esteem (Boduszek et al. 2013b; Boduszek and Debowska 2017). The latter finding is supportive of theories suggesting that self-esteem is generally lowered among low-status group members (Ellemers, Kortekaas, and Ouwerkerk 1999). In the current study, we reported a significant relationship between in-group affect and negative self-esteem, indicating that positive emotional valence of belonging to a delinquent group does not increase self-esteem among youth offenders. The measure of self-esteem utilized in the current research reflects a person's subjective emotional evaluation of one's self-worth in the prison context (prison-specific self-esteem) as well as outside of any context (personal self-esteem). Therefore, it may be that the above association was affected by the inclusion of personal self-esteem items, indicating that a delinquent's positive feelings toward other delinquents do not protect them against feeling inferior to other high-status group members. This supposition should be explored further by testing associations between in-group affect and delinquent self-esteem as well as personal self-esteem separately. Furthermore, a significant positive relationship between self-esteem and cognitive centrality was found suggesting that identifying with other youth offenders increases self-esteem. The disparity in findings surrounding self-esteem and cognitive centrality among youth and adult populations may be due to the differences in cognitive abilities between the two groups. More specifically, it appears that younger individuals who strongly identify with other offenders may glamorize crime, which can be affected by the exposure to appealing crime fiction and violent video games. As such, belonging to a criminal group can appear desirable to them, leading to positive self-esteem. Future research should aim to empirically explore these suppositions.

Additionally, cognitive centrality and in-group affect associated with parental attachment in a negative direction. These results demonstrate that weak parental attachment may increase identification and emotional attachment with other delinquents, which may be an attempt to replace an emotional void by youngsters who do not feel loved by their caregivers. In line with the IPM-CSI (Boduszek et al. 2016), this suggests that a positive relationship with parental figures is crucial for preventing the development of CSI. Interestingly, in-group ties formed a positive association with parental attachment. One possible explanation of this result is that individuals who positively bond with their parents use the same processes to bond with other individuals, even in criminal settings. Furthermore, cognitive centrality was associated with positive peer relations, whereas in-group affect associated with peer rejection. This indicates that peer rejection is especially damaging at affective, but not cognitive, level and may increase an emotional attachment to other delinquents.

When considering the results of the current study the following limitations ought to be considered. First, the current sample consisted of youth offenders within the Yorkshire area and hence future studies should seek to validate the MDSI among youth offenders from different social and cultural backgrounds. Although the present study incorporated females, we could not test for factor invariance as the sample of females was not large enough. Therefore, it is recommended to incorporate a larger sample of females in future research. Second, the present study aimed to limit response bias by encouraging participants to undertake the self-report measures in the presence and with the assistance of their youth offender worker. Although this would limit some of the response bias, it did not eradicate it, as youth offender workers reported that some participants completed the study by themselves. Third, the current study was cross-sectional and therefore temporal order

of the associations reported cannot be assured. Longitudinal studies are therefore required to offer support to the temporal order.

Despite the aforementioned limitations, the current research expands on existing literature in the area of CSI. An adapted version of MCSI-R, the MDSI, was developed and validated for youth offenders. It was shown that the MDSI scores are best captured by three grouping factors (cognitive centrality, in-group affect, and in-group ties) while controlling for a general factor. The three grouping factors, although highly correlated with one another, evidenced a good differential predictive utility for criminal friend index, self-esteem, parental attachment, and peer rejection. This highlights the importance of considering the predictors and consequences of delinquent social identity when implementing risk assessments and interventions within the NOMS.

This is of particular importance within the youth offender population where risk factors, such as parental attachment and peer rejection, are dynamic factors which can still be altered. Therefore, treatment for youth offenders should target two key areas: relationships and selfesteem. Positive relationships should be encouraged by (1) developing positive attachments with parent(s)/guardian(s) in order to prevent formation of criminal cognitive structures and emotional attachments with offenders and (2) encouraging integration with pro-social friends at school to prevent peer rejection and the development of emotional attachments with offenders. The MDSI, which is free and easy to administer, can be used as an outcome measure to evaluate such interventions.

Conflict of interest

Authors declare that they have no conflict of interest.

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References

Bentler, Peter M. 1990. “Comparative Fit Indices in Structural Models.” Psychological Bulletin 217:238–46. doi:10.1037/ 0033-2909.107.2.238.

Boduszek, Daniel, Gary Adamson, Mark Shevlin, and Philip Hyland. 2012. “Development and Validation of a Measure of Criminal Social Identity within a Sample of Polish Recidivistic Prisoners.” Criminal Behaviour and Mental Health 22(5):315–24. doi:10.1002/cbm.v22.5.

Boduszek, Daniel, Gary Adamson, Mark Shevlin, Philip Hyland, and Ashling Bourke. 2013a. “The Role of Criminal Social Identity in the Relationship between Criminal Friends and Criminal Thinking Style within a Sample of Recidivistic Prisoners.” Journal of Behavior in the Social Environment 23(1):14–28. doi:10.1080/ 10911359.2013.737289.

Boduszek, Daniel, Gary Adamson, Mark Shevlin, John Mallett, and Philip Hyland. 2013b. “Criminal Social Identity of Recidivistic Prisoners: The Role of Self-Esteem, Family and Criminal Friends.” Journal of Police and Criminal Psychology 28(1):15–25. doi:10.1007/s11896-012-9105-7.

Boduszek, Daniel and Agata Debowska. 2016. “Critical Evaluation of Psychopathy Measurement (PCL-R and SRP-III/ SF) and Recommendations for Future Research.” Journal of Criminal Justice 44:1–12. doi:10.1016/j. jcrimjus.2015.11.004.

Boduszek, Daniel and Agata Debowska. 2017. “Further Insights into the Construct of Criminal Social Identity: Validation of a Revised Measure in a Prison Population.” The Journal of Forensic Psychiatry & Psychology 28 (5):694–710. doi:10.1080/14789949.2017.1318161.

Boduszek, Daniel, Agata Debowska, Katie Dhingra, and DeLisi. Matt. 2016. “Introduction and Validation of the Psychopathic Personality Traits Scale (PPTS) in a Large Prison Sample.” Journal of Criminal Justice 46:9–17. doi:10.1016/j.jcrimjus.2016.02.004.

Boduszek, Daniel, Katie Dhingra, and Agata Debowska. 2016a. “The Moderating Role of Psychopathic Traits in the Relationship between Period of Confinement and Criminal Social Identity in a Sample of Juvenile Prisoners.” Journal of Criminal Justice 44:30–35. doi:10.1016/j.jcrimjus.2015.11.005.

Boduszek, Daniel, Katie Dhingra, and Agata Debowska. 2016b. “The Integrated Psychosocial Model of Criminal Social Identity (IPM-CSI).” Deviant Behavior 37(9):1023–31. doi:10.1080/01639625.2016.1167433.

Boduszek, Daniel, Katie Dhingra, Philip Hyland, and Agata Debowska. 2016c. “A Bifactorial Solution to the Psychopathy Checklist: Screening Version in A Sample of Civil Psychiatric Patients.” Criminal Behaviour and Mental Health 26(3):174–85. doi:10.1002/cbm.v26.3.

Boduszek, Daniel and Philip Hyland. 2011. “The Theoretical Model of Criminal Social Identity: Psycho-Social Perspective.” International Journal of Criminology and Sociological Theory 4(1):604–15.

Boduszek, Daniel, Philip Hyland, Ashling Bourke, Mark Shevlin, and Gary Adamson. 2013c. “Assessment of PsychoSocial Factors Predicting Recidivistic Violent Offences within a Sample of Male Prisoners.” The Irish Journal of Psychology 34(1):24–34. doi:10.1080/03033910.2012.754324.

Bradford, Brown, B. and Mary J. Lohr. 1987. “Peer-Group Affiliation and Adolescent Self- Esteem: An Integration of Ego-Identity and Symbolic-Interaction Theories.” Journal of Personality and Social Psychology 52(1):47–55. doi:10.1037/0022-3514.52.1.47.

Brown, Rupert, Susan Condor, Audrey Mathews, Gillian Wade, and Jennifer Williams. 1986. “Explaining Intergroup Differentiation in an Industrial Organization.” Journal of Occupational and Organizational Psychology 59(4):273–86. doi:10.1111/j.2044-8325.1986.tb00230.x.

Cameron, James E. 2004. “A Three Factor Model of Social Identity.” Self and Identity 3(3):239–62. doi:10.1080/ 13576500444000047.

Carmines, Edward G. and Richard A. Zeller. 1979. Reliability and Validity Assessment. Newbury Park, CA: Sage Publications.

Cortina, Jose M. 1993. “What Is Coefficient Alpha? an Examination of Theory and Applications.” Journal of Applied Psychology 78:98–104. doi:10.1037/0021-9010.78.1.98.

Cronbach, Lee. J. 1990. Essentials of Psychological Testing. New York, NY: Harper & Row.

Debowska, Agata, Daniel Boduszek, Susanna Kola, and Philip Hyland. 2014. “A Bifactor Model of the Polish Version of the Hare Self-Report Psychopathy Scale.” Personality and Individual Differences 69:231–37. doi:10.1016/j. paid.2014.06.001.

Debowska, Agata, Daniel Boduszek, and Nicole Sherretts. 2017. “Self-Esteem in Adult Prison Population: The Development of the Self-Esteem Measure for Criminals (SEM- C).” Deviant Behavior 38:1240–51. doi:10.1080/ 01639625.2016.1246034.

Ellemers, Naomi, Paulien Kortekaas, and Jaap W. Ouwerkerk. 1999. “Self-Categorization, Commitment to the Group and Social Self-Esteem as Related but Distinct Aspects of Social Identity.” European Journal of Social Psychology 29 (23):371–89. doi:10.1002/(SICI)1099-0992(199903/05)29:2/3<371::AID-EJSP932>3.0.CO;2-U.

Hair, Joseph F., William C. Black, Barry J. Babin, and Rolph E. Anderson. 2010. Multivariate Data Analysis: A Global Perspective. New Jersey: Pearson Prentice Hall.

Hinkle, Steve, Laurie A. Taylor, D. Lee Fox-Cardamone, and Kimberly F. Crook. 1989. “Intragroup Identification and Intergroup Differentiation: A Multicomponent Approach.” British Journal of Social Psychology 28(4):305–17. doi:10.1111/j.2044-8309.1989.tb00874.x.

Ingram, Jason R., Justin W. Patchin, Beth M. Huebner, John D. McCluskey, and Timothy S. Bynum. 2007. “Parents, Friends, and Serious Delinquency: An Examination of Direct and Indirect Effects among At-Risk Early Adolescents.” Criminal Justice Review 32(4):380–400. doi:10.1177/0734016807311436.

Jackson, Jay. 2002. “Intergroup Attitudes as a Function of Different Dimensions of Group Identification and Perceived Intergroup Conflict.” Self and Identity 1:11–33. doi:10.1080/152988602317232777.

Kiesner, Jeff, Mara Cadinu, François Poulin, and Monica Bucci. 2002. “Group Identification in Early Adolescence: Its Relation with Peer Adjustment and Its Moderator Effect on Peer Influence.” Child Development 73(1):196–208. doi:10.1111/cdev.2002.73.issue-1.

Li-Tze, Hu and Peter M. Bentler. 1999. “Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives.” Structural Equation Modeling 6:1–55. doi:10.1080/10705519909540118.

Mikami, Amori Yee, Margaret A. Boucher, and Keith Humphreys. 2005. “Prevention of Peer Rejection through a Classroom-Level Intervention in Middle School.” Journal of Primary Prevention 26(1):5–23. doi:10.1007/s10935004-0988-7.

Mills, Jeremy F and Daryl G. Kroner. 1999. Measures of criminal attitudes and associates. Unpublished User Guide.

Muthén, Linda K. and Bengt O. Muthén. 1998 – 2015. Mplus User Guide. 7th ed. Los Angeles, CA: Muthén & Muthén.

Newman, Barbara M., Brenda J. Lohman, and Philip R. Newman. 2007. “Peer Group Membership and a Sense of Belonging: Their Relationship to Adolescent Behavior Problems.” Adolescence 42(166):241–63.

Raykov, Tenko. 1997. “Estimation of Composite Reliability for Congeneric Measures.” Applied Psychological Measurement 21(2):173–84. doi:10.1177/01466216970212006.

Raykov, Tenko. 1998. “Coefficient Alpha and Composite Reliability with Interrelated Nonhomogeneous Items.” Applied Psychological Measurement 22(4):375–85. doi:10.1177/014662169802200407.

Reise, Steven P., Tyler M. Moore, and Mark G. Haviland. 2010. “Bifactor Models and Rotations: Exploring the Extent to Which Multidimensional Data Yield Univocal Scale Scores.” Journal of Personality Assessment 92:544–59. doi:10.1080/00223891.2010.496477.

Shagufta, Sonia, Daniel Boduszek, Katie Dhingra, and Derrol Palmer. 2015. “Criminal Social Identity and Suicide Ideation among Pakistani Young Prisoners.” International Journal of Prisoner Health 11(2):98–107. doi:10.1108/ IJPH-06-2014-0018.

Sherretts, Nicole, Daniel Boduszek, and Agata Debowska. 2016. “Exposure to Criminal Environment and Criminal Social Identity in a Sample of Adult Prisoners: The Moderating Role of Psychopathic Traits.” Law and Human Behavior 40(4):430–39. doi:10.1037/lhb0000188.

Sherretts, Nicole and Dominic Willmott. 2016. “Construct Validity and Dimensionality of the Measure of Criminal Social Identity Using Data Drawn from American, Pakistani, and Polish Inmates.” Journal of Criminal Psychology 6 (3):134–43. doi:10.1108/JCP-07-2016-0020.

Steiger, James H. 1990. “Structural Model Evaluation and Modification: An Interval Estimation Approach.” Multivariate Behavioral Research 25(2):173–80. doi:10.1207/s15327906mbr2502_4.

Tajfel, Henri. 1978. Differentiation between Social Groups: Studies in the Social Psychology of Intergroup Relations. London, England: Academic Press.

Tajfel, Henri and John C. Turner. 1979. “An Integrative Theory of Intergroup Conflict.” Pp. 33–47 in The Social Psychology of Intergroup Relations, edited by William G. Austin and Stephen Worchel. Monterey, CA: Brooks/Cole.

Tucker, Ledyard R. and Charles Lewis. 1973. “A Reliability Coefficient for Maximum Likelihood Factor Analysis.” Psychometrika 38:1–10. doi:10.1007/BF02291170.