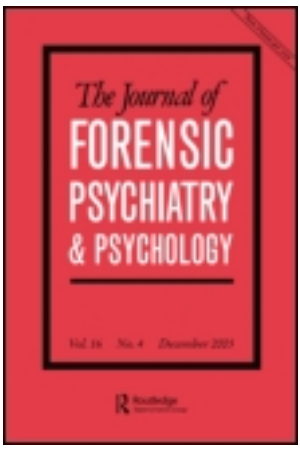

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Emotion regulation in incarcerated young offenders with psychopathic traits

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Core features of psychopathic personality in adults are shallow affectivity and generally low levels of emotional distress. Several studies suggest that these features are also in young people with psychopathic personality traits. The concept of emotion regulation refers to a person's ability to regulate negative emotions to reduce feelings of emotional distress. Since maladaptive emotion regulation has been associated with high levels of emotional distress it may be expected that individuals with psychopathic personality traits show particularly adaptive strategies for the regulation of negative emotionality. On the basis of these expectations, the current study investigated the relationship between psychopathic traits, self-reported degree of emotional problems, and emotion regulation strategies in 104 incarcerated young offenders. Psychopathic traits were not associated with emotional problems or with adaptive emotion-regulation but were positively related to maladaptive emotion regulation strategies. When scores for each psychopathy factor were investigated separately, significant disparities were found in emotional symptoms and emotion regulation.

Keywords: psychopathy; emotion regulation; juvenile offenders; negative emotionality; young offenders; antisocial behavior; forensic setting

Introduction

Psychopathy

The psychopathic personality is characterized by interpersonal features such as a general poverty of affect and low levels of empathy on the one hand and characteristics such as impulsivity and antisocial behavior on the other. Although psychopathy does not necessarily include criminal behavior, research suggests a very close association (Hare, 1991b; Hart, Kropp, &

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Hare, 1988; Serin, 1991). The prevalence of psychopathy in the incarcerated population exhibits marked cross-cultural variations (Cooke, 1998). Recent studies suggest that the prevalence of psychopathic personality ranges from 15 to 30% in the North American prison population (Hare & Neumann, 2008). European prison samples have commonly shown considerably lower rates of psychopathic personality than samples in North America (Cooke & Michie, 1999; Sullivan & Kosson, 2006). Psychopathic personality traits have been found to be linked to various personality disorders (Hare, Hart, & Harpur, 1991; Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). The two most frequently associated are antisocial (Hildebrand & Ruiter, 2004) and narcissistic personality disorder (Dolan & Fullham, 2004; Herpertz & Sass, 2000). Furthermore, psychopathic personality traits have been shown to be correlated with high incidence of substance abuse (Hildebrand & Ruiter, 2004), but rather less frequently with other Axis I disorders (Stalenheim & Knorring, 1996).

The characteristics of psychopathy are usually not represented in an individual as a uniform construct but rather form a complex personality picture (Hicks, Markon, Patrick, Krueger, & Newman, 2004; Karpman, 1941b). It has therefore been proposed that the construct of psychopathy should be subdivided into more specific variants. It was suggested at an early stage that individuals should be described as 'primary' or 'secondary' psychopaths (Cleckley, 1941; Karpman, 1941a). These two forms of psychopathy were supposed to both include hostile antisociality and lack of empathy (Karpman, 1948). 'Primary psychopathy', however, would involve an affective deficit contributing to purposeful antisocial behavior aimed at gaining excitement and enhancing personal profit. Secondary psychopathy, by contrast, was thought to drive the individual to experience strong feelings of anxiety and hatred which, with insufficient impulse control, could lead to impulsive antisocial behavior (Karpman, 1941a). While this early work was based on clinical observations, Hare (2003) introduced an empirical perspective by proposing the two-factor model of psychopathy. The two-factor model of psychopathy according to Hare describes an interpersonal factor (Factor 1) a behavioral factor (Factor 2) of psychopathy and has gained support from numerous studies (Blackburn, 1975; Hare, 2003; Lykken, 1995; Porter, 1996). Aside from the supporting evidence for the two-fold distinction, however, doubts have been raised as to whether this solution is adequate to cover all the variation in psychopathic individuals. Considerations chiefly rely on methodological and definitional arguments against prior investigations (Cooke & Michie, 2001; Cooke, Michie, Hart, & Clark, 2004; Poythress & Skeem, 2006). Hervé, Ling, and Hare (2000) suggested four factors giving a better a framework for detecting psychopathy in the criminal population than the initial two factor solution. Cooke and Michie (2001) proposed a three-factor solution, derived from factor analysis of the pool of psychopathy features, including arrogant and

deceitful interpersonal style, deficient affective experience, and impulsive and irresponsible behavioral style.

A number of instruments have been developed that seek to assess psychopathic personality traits in a standardized way. These are usually based on the different concepts of factor structure. The most commonly used is the Psychopathy Checklist (Hare, 1991a) while other tools like the Psychopathic Personality Inventory (Lilienfeld, 1997) or the Self-Report Psychopathy Scale (Hare, 1985) have shown good reliability and validity. A new instrument has recently been proposed: The Comprehensive Assessment of Psychopathic Pathology (Cooke, Hart, Logan, & Michie, 2004) is currently being validated.

Psychopathy in young individuals

The concept of psychopathy has been extended to young individuals attracting great interest in practice and research. Although manifestations of psychopathic personality traits in young individuals tend to be more heterogeneous and unstable than in adults (Frick & Marsee, 2006) significant similarities were found between the expression of psychopathic traits in adults and young individuals (Herpertz & Sass, 2000). Early indications may include conduct and behavior problems (Herpertz & Sass, 2000), low levels of anxiety (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999), sensation seeking tendencies, and high risk behavior (Frick et al., 2003). A tendency to bully or harm others has also been identified (Frick, Bodin, & Barry, 2000; Frick & Marsee, 2006). Not surprisingly, early psychopathy has shown high comorbidity rates with Oppositional Defiant Disorder (ODD), Conduct Disorder (MacDonald & Iacono, 2006), and Antisocial Personality Disorder (APD). Although not all young individuals with these diagnoses develop psychopathy in later life, all adults meeting the diagnostic criteria for adult psychopathy have shown diagnostic indications for at least one of these diagnoses in early life (Burns, 2000).

Etiological research on psychopathy has primarily focused on genetic and environmental factors. Karpman (1941a) proposed that the differences between primary and secondary adult psychopathy might result from a primarily biological versus primarily environmentally determined deficit. Although this proposition is not specific it has gained some empirical support in more recent studies. For example, features like under-responsiveness to fear-inducing stimuli, indifference to punishment and lack of emotional distress, known as 'callous unemotional traits', have been detected in children at a very early age and have been proposed to be precedents of the interpersonal component of psychopathy. They seem to carry substantial predictive value for the development of adult psychopathy (Campbell, Porter, & Santor, 2004) and to be significantly determined by genetic influences (Larsson et al., 2007). In contrast, environmental factors

like antisocial family background, early physical abuse or a nonparental living situation tend to be connected with the development of antisocial psychopathic tendencies (Campbell et al., 2004).

In line with these findings it has been proposed that the characteristics of early psychopathy resemble the factorial structure of adult psychopathy and may therefore consist of the same components. Based on this, instruments have been developed that aim to assess psychopathic traits in young individuals such as the youth version of the Psychopathy Checklist (PCL:YV; Forth, Kosson, & Hare, 2003) or the Youth Psychopathic Traits Inventory (Andershed, Kerr, Stattin, & Levander, 2002). Like the adult version, the Psychopathy Checklist Youth Version assumes a two-factor structure of psychopathy while the Youth Psychopathic Traits Inventory (Andershed, Kerr, Stattin, 2002) assesses psychopathic personality traits in juveniles on the basis of a three-factor model of psychopathy (Cooke & Michie, 2001). Despite the heterogeneity of psychopathy in young people these instruments have been shown to possess high validity and acceptable to good reliability (Andershed et al., 2002; Forth et al., 2003).

Negative emotions and emotion regulation

'Negative emotions' refer to the emotional distress that an individual experiences when feeling sad, angry or anxious (Hicks & Patrick, 2006). According to the definition this is usually the case when an individual's expectation does not match with the situation in the environment (Eisenberg, 2004). The ability to regulate negative emotions to reduce feelings of distress is called emotion regulation and reflects one of the most complex domains of human emotionality (Gross, 1998). Because of its complexity there is yet no consensus about the definition and circumscription of the concept. According to the literature, emotion regulation may be defined as involving elaborate processes with cognitive as well as physiological components which modulate long-lasting and complex affective states. This differentiates it from 'coping' – a more immediate mechanism applied to deal with short-term emotional consequences. For example Barrett and Gross (2001) consider emotion regulation to include all strategies that are directed at modifying a current emotional state and do not make any limitation with respect to the strategy itself.

It is often stressed that adequately and adaptively developed emotion regulation strategies in adults require detailed understanding and attribution of emotionality – both in oneself and in others – and of its effect on social interactions (Bradley, 2000). Whether the processes required for emotion regulation are usually activated automatically, or whether they primarily need conscious attention, has been the subject of controversy. Most recent suggestions assume the involvement of both conscious and unconscious

components (Eisenberg, 2004). Recent studies have therefore focused on the separate investigation of conscious and unconscious emotion regulation strategies, in the former case usually via self-report and in the latter case employing psychophysiological measures or implicit testing procedures (Barrett & Gross, 2001; Garnefski, Koopman, Kraaij, & ten Cate, 2009; Gross, 2002).

Emotion regulation strategies are developed by an individual throughout their lifetime, most critically during the early and late years of childhood (Bradley, 2000). They reflect interactions between prior experience and dispositional tendencies (Blair et al., 2006; Hare, 1999). A child's emotional response to the experience of negative emotions is initially a reflex and based directly on the current interaction with caregivers. In later life, however, sophistication of cognitive skills and developing Theory of Mind abilities enable the child to create internal representations of interactional rules and appropriate social behavior. Accordingly, strategies for emotion regulation start simple, primarily representing basic reactions of avoidance (e.g. looking away, covering eyes) and occur in situations of direct confrontation (Kopp, 1989). Later on, they develop to include more sophisticated internal (e.g. shift focus of attention, distracting thoughts) and external (e.g. verbal or physical expression) processes (Eisenberg, Guthrie et al., 2000).

Emotion regulation strategies have been conceptualized in various ways, e.g. according to their function, their source or their nature (Eisenberg, Fabes, Guthrie, & Reiser, 2000; Gross, 2002). A differentiated view of emotion regulation has been recommended (Gross, 2002) and a number of different conceptualizations have been found to be useful when investigating emotion regulation (Deimann, 1984). Views distinguishing internalizing and externalizing strategies (Eisenberg, Guthrie et al., 2000) and antecedent and response focused strategies (Gross, 2002), for example, have been assessed extensively (Gross, 2002). Emotion regulation strategies have also been classified according to their effectiveness in modifying a current aversive emotional state (Gross, 2002; Weber, 1994). This view categorizes strategies that are successful in reducing negative emotions as 'adaptive strategies' and those that are ineffective as 'maladaptive strategies'. This approach has been used in a number of studies and found to be valid in predicting e.g. subjective well-being, psychological maladjustment and behavioral deviancy (Eisenberg & Morris, 2002; Garnefski et al., 2009).

With reference to this categorization, a person's tendency to use maladaptive strategies to attempt to regulate negative emotions has been found to constitute a risk factor for eliciting negative responses from the environment. This can influence the quality of social interaction, which in turn has a negative impact on the child's well-being. Eisenberg and Morris (2002) found disruptive behavior tendencies to be negatively correlated with 'effortful control' and positively correlated with 'reactive control'. Being prone to impulsivity, constantly seeking for immediate reward and being

insensitive to punishment have consistently been associated with maladaptive emotion regulation and an increased likelihood of difficulties arising in early interaction situations (Eisenberg & Fabes, 1990; Koskelainen, Sourander, & Kaljonen, 2001; Kostiuk & Fouts, 2002).

Standardized methods of assessment of emotion regulation strategies usually include observation and recording of behavior, psychophysiological measures, self-report questionnaires, and interviews (Gross, 1998; Mauss & Robinson, 2009; Thayer, Newmann, & McClain, 1994). As mentioned above, a number of self-report questionnaires have been used to approach the conscious aspects of emotion regulation. These have been shown to be reliable and valid, mainly under consideration of several external correlates (Garnefski & Kraaij, 2007; Gross, 2002). Although no single measurement can take in all areas and processes involved in emotion regulation, it has been emphasized that self-report may be a more representative method of accessing emotion regulation than laboratory study because it refers to generalized natural situations (Garnefski et al., 2009; Garnefski & Kraaij, 2007; Gross, 2002). Also, it has recently been proposed that a direct measurement by self-report may provide a purer insight into the functionality of a person's emotion regulation in reducing negative emotions (Grob & Smolenski, 2005).

Emotion regulation and psychopathic personality traits

The direct link between psychopathy features and the quality of emotion regulation has not yet been assessed. However, such a link may be inferred. Empirical studies have consistently indicated that impulsive and irresponsible personality features (Factor 2 according to the two-factor model, Factor 3 according to the three-factor model) are related to high levels of negative emotions (feelings of sadness, anger or anxiety) and maladaptive emotion regulation (Danziger, Faillenot, & Peyron, 2009). It has been suggested that this relationship may be explained by a heightened reactivity to negative emotional stimuli combined with a tendency to react in impulsive and maladaptive ways that seem ineffective in reducing negative feelings.

By contrast, grandiose and manipulative (Factor 1 of the two-factor model, Factor 1 of the three-factor model), and especially callous and unemotional, traits (Factor 1 of the two-factor model, Factor 2 of the three-factor model) have been shown to be related to low levels of negative emotions (feelings of sadness, anger or anxiety) (Hicks & Patrick, 2006). It seem that individuals with these personality traits are not fully able to process and integrate stimuli that provoke negative emotions (Cappadocia, Desrocher, Pepler, & Schroeder, 2009).

On the basis of these findings it might be expected that narcissistic and grandiose self-perception (Factor 1 of the two-factor model, Factor 1 of the

three-factor model) work as a mechanism guarding against high levels of negative emotions (Bradley, 2000; Hicks & Patrick, 2006) and therefore against maladaptive emotion regulation. Furthermore, it has been suggested that low affective processing as seen in individuals with callous, unemotional psychopathy features (Factor 1 of the two-factor model, Factor 2 of the three-factor model) not only leads to low levels of negative emotions (feelings of sadness, anger or anxiety) but is also associated with inadequate emotion regulation (Cappadocia et al., 2009).

The current study

The current study sought to investigate the relationship between psychopathy, the level of negative emotions and the quality of emotion regulation strategies in individuals serving sentences at a young offenders' facility. Psychopathic personality traits were assessed with the Youth Psychopathic Traits Inventory (Andershed et al., 2002). This questionnaire is based on a three-factor model of psychopathy. Great empirical support has been found for the validity of this model in young and adult samples (Cooke & Michie, 2001). Therefore, the current analyses will be based on this psychopathy concept. Negative emotions and emotion regulation strategies were evaluated using self-report instruments.

On the basis of the findings mentioned above it was predicted that scores on the first psychopathy component (Factor 1; grandiosity, manipulation) and on the second component (Factor 2; callous, unemotional traits) would be negatively or at least not positively related to emotional problems and unrelated to the quality of emotion regulation. On the other hand, it was hypothesized that individuals with high scores for Factor 3 of the psychopathy construct (impulsivity, irresponsibility) would exhibit high levels of emotional problems and use maladaptive rather than adaptive strategies.

Method

Participants

One hundred and four male young offenders newly incarcerated in the juvenile division of Neumünster prison (Germany) were invited to take part in the present study. Offenders incarcerated in the juvenile department of German prisons are between 14 and 18 at the time of the offence, or 19–21 for those with significant developmental deficits. Where court proceedings are prolonged an offender in the juvenile division may be older than 21. On the basis of the legal and psychological classification the current sample was considered juveniles and adolescents. To test if these groups were significantly different one-way ANOVA was carried out to analyze putative differences in negative emotions, emotion regulation, and psychopathy

scores between three age groups (juveniles, adolescents, and young adults). No significant age differences were found. The mean age in the current sample was 18.46 (SD = 1.9) years. Participants were tested while serving their sentence. However, it was ensured that the assessment did not take place during their first few days at the young offender facility in order to avoid any bias resulting from the shock of the trial, sudden isolation or worries about the future (Kopp et al., 2011; Singleton & Meltzer, 2002).

Measurements

Strength and Difficulties Questionnaire, SDQ (German language version SDQ-Deu)

The SDQ is a screening device for children and juveniles assessing emotional well-being and its effect on behavioral outcomes (Goodman, 1997). The self-report version of the test consists of 25 items referring to five subscales (emotional symptoms, conduct problems, hyperactivity, problems with peers, and prosocial behavior). The present study considered SDQ total scores and scores on the 'emotional symptoms' subscale (ESS). This subscale is thought to reflect the construct of negative emotions as described above (Goodman, 2001) and is therefore taken to represent this construct in the following sections. For further elucidation of results the conduct problems subscale scores were included in an additional correlational analysis.

Youth Psychopathic Traits Inventory (YPI)

The Youth Psychopathic Traits Inventory (Andershed et al., 2002) is a self-report instrument for the assessment of psychopathic traits in adolescents, which has gained considerable attention in recent years (Dolan & Rennie, 2003; Skeem & Cauffmann, 2003). Its validity and reliability has been supported in a number of studies (Andershed et al., 2002). Andershed et al. (2002) and others (Cooke & Michie, 2001; Hall, Benning, & Patrick, 2004) found empirical support for their three factor model by using cluster analysis. They found three clusters, representing the three main dimensions of the YPI, to carry meaningful value. In the same study the three main factors all correlated highly with the total score. The YPI consists of 50 items that are rated on four-point Likert scales (ranging from 1 = fully disagree to 4 = fully agree). Items refer to three intercorrelated factors of psychopathy, namely grandiose, manipulative (Factor 1), callous, unemotional (Factor 2) and impulsive, and irresponsible (Factor 3) traits. The three factors can be subdivided into 10 scales, described as dishonest charm, grandiosity, lying, and manipulation (together forming Factor 1); callousness, unemotionality, and remorselessness (together forming Factor 2);

impulsivity, thrill-seeking, and irresponsibility (together forming Factor 3). The instrument is intended to assess psychopathic personality dimensionally, thereby avoiding the diagnostic assumptions implicit in a dichotomous categorization (psychopath/non-psychopath) in young individuals.

Questionnaire for the assessment of emotion regulation in children and juveniles (Fragebogen zur Erfassung der Emotionsregulation bei Kindern und Jugendlichen, FEEL-KJ)

The German questionnaire FEEL-KJ (Grob & Smolenski, 2005) was used to assess the functionality of emotion regulation strategies. This self-report instrument investigates the extent to which emotion-regulation strategies are applied successfully in reducing negative emotional affective states and increasing subjective well-being. The emotion regulation strategies in this questionnaire are exclusively conceptualized according to this characteristic – based on prior evidence showing their effectiveness in decreasing a negative emotional state (Grob & Smolenski, 2005; Gross, 2002). For this, the FEEL-KJ comprises 60 items referring to three emotional states (anxiety, sadness, and anger). Thirty items explore the use of seven emotion regulation strategies that have been shown to be functional, or adaptive, in regulating negative emotions (problem-oriented behavior, distraction, elevation of mood, acceptance, forgetting, and redefining cognitive problem-solving) and five strategies that have been shown to be non-functional, or maladaptive (giving up, aggressive behavior, withdrawal, self-derogation, and perseveration). Three other emotion regulation strategies (social support, expression, and emotional control) could not exclusively be directed to their function. Participants are asked to rate the frequency with which emotion regulation strategies are used to regulate the emotional state. All items are evaluated on four-point Likert scales (ranging from fully disagree to fully agree).

Procedure

The tests were embedded in the diagnostic process. The data were gathered anonymously. Participants were tested in small groups consisting of two to four individuals. The composition of the groups was random. It was stressed that participation was voluntary and that refusal would not result in adverse consequences during their stay in prison. None of the individuals who were invited to participate in the study refused participation. As sufficient reading skills and intellectual capacity are essential for obtaining reliable data, a minimum of 70 IQ points was taken as the cut-off value for inclusion in the assessment. Verbal intelligence scores were measured by means of the German *Mehrfachwahl-Wortschatz Intelligenztest* (Lehrl, 1999) which measures intelligence independently of age and education level. IQ scores

in the current sample ranged from 70 to 124 (mean = 85.9, SD = 7.7). All participants were fully debriefed afterward.

Statistical analyses and results

Sample description

Seventy-four male young offenders who were imprisoned after conviction (mean length of sentence = 17.34 months, SD = 19.42 months) and 57 male young offenders on remand agreed to participate in the current study. Their mean age was 18.8 (SD = 1.87, range: 14–24) years. Nearly eighty percent (78.8%) of the participants were German and the remaining 21.2% were of other nationalities, mainly Turkish, Lebanese, and Albanian. Sixty-one percent of the offenders had no school leaving qualifications and none of the participants had attained the '*Abitur*', the German university entrance qualification. The most common grounds for their arrest or conviction included robbery (around 20%), theft (24%), and violence against other people (around 20%).

Independent sample *t*-tests indicated that emotional symptoms and conduct problems were more common in the current sample than in a community sample of 12,000 children drawn from British Child Benefit Records (Meltzer, Gatward, Goodman, & Ford, 2000). The differences were highly significant on every scale ($3.7 < t < 5.9$; $p < .001$ for all). The three factors of the YPI were significantly intercorrelated (Factors 1 & 2: $r = .43$; Factors 1 & 3: $r = .38$, Factors 3 & 2: $r = .42$; $p < .001$ for all). YPI scores ranged from 14 to 117 (mean = 61.0, SD = 20.2) for YPI total scores, from 1 to 47 for Factor 1 (mean = 17.1, SD = 10.7), from 1 to 36 for Factor 2 (mean = 17.36, SD = 6.8) and from 2 to 45 for Factor 3 (mean = 26.60, SD = 8.3).

Correlational analyses

To illuminate the relationship between each psychopathy factor of the YPI, the variables SDQ emotional symptoms (ESS), and emotion regulation, zero-order correlations were conducted between these variables and the three factors of the YPI. The results are shown in Table 1.

To gain further inside into this relationship a zero order correlation was also conducted for the YPI factors for each of the three FEEL emotions (anxiety, anger, and sadness) separately (Table 2).

Regression

To assess the predictive value of the YPI factors for the three dependent variables (emotional symptoms, maladaptive emotion regulation strategies,

Table 1. Zero order correlation between YPI factors, SDQ, and FEEL-KJ ($N = 104$).

YPI	Emotional symptoms (SDQ)	Maladaptive emotion regulation (FEEL-KJ)	Adaptive emotion regulation (FEEL-KJ)	Conduct problems (SDQ)
Total	–	.35**	–	.62**
Factor 1	–	.27**	–	.53**
Factor 2	−.22*	–	–	.41**
Factor 3	–	.38**	–	.50**

Note: The YPI Factors measure: grandiosity/manipulation (Factor 1), callousness/unemotionality (Factor 2) and impulsivity/irresponsibility (Factor 3).
*The correlation is significant at the .05 level.
**The correlation is significant at the .01 level. (All tests two-tailed).

Table 2. Zero-order correlation between: YPI factors and FEEL separately ($N = 104$).

YPI	Maladaptive anxiety	Maladaptive anger	Maladaptive sadness	Adaptive anxiety	Adaptive anger	Adaptive sadness
Total	.27**	.40**	–	–	–	–
Factor 1	.26**	.33**	–	–	–	–
Factor 2	–	.24**	–	–	–	–
Factor 3	.23*	.35**	.33**	–	–	–

Note: The YPI factors measure: grandiosity/manipulation (Factor 1), callousness/unemotionality (Factor 2) and impulsivity/irresponsibility (Factor 3).
*The correlation is significant at the .05 level.
**The correlation is significant at the .01 level. (All tests one-tailed).

and adaptive emotion regulation strategies) regression analyses were conducted. SDQ conduct problems were analyzed as fourth dependent variable. As mentioned above, the three YPI factors were significantly correlated. Therefore, hierarchical regression was applied to asses the unique contribution of each of the three factors on each dependent variable. For this, two factors of the YPI were regressed on the dependent variable (step 1). As a second step, the third YPI factor was added to the model (step 2). The results are presented in Table 3. The incremental variance attributable to the factor added in step 2, above that accounted for by the other two factors, is indicated by ΔR^2 in this table.

Adaptive emotion regulation strategies were not predicted with significance by any of the YPI factors. Results of this analysis were therefore not included in Table 3. In general, the explained variance indicated by R^2 tended to be low. When looking at the isolated influence of the YPI factors (step 2) emotional symptoms were found to be (negatively)

Table 3. Hierarchical regression analyses: YPI factors, emotional symptoms, Maladaptive emotion regulation, and conduct problems.

Variable	Step	YPI factor	B	SD	Beta	Significance	
Symptoms	1	Factor 2	−.10	.03	−.31	.00	$R^2 = .09$
		Factor 3	.05	.03	.22	.04	
	2	Factor 1	.02	.02	.12	.29	$\Delta R^2 = .01$
	1	Factor 1	.01	.02	.01	.10	$R^2 = .01$
		Factor 3	.02	.03	.08	.45	
	2	Factor 2	−.11	.03	−.35	.00**	$\Delta R^2 = .09$
	1	Factor 1	.03	.02	.16	.13	$R^2 = .07$
		Factor 2	−.09	.03	−.29	.01	
	2	Factor 3	.05	.03	.19	.09	$\Delta R^2 = .03$
Maladaptive emotion regulation	1	Factor 2	−.06	.23	−.03	.79	$R^2 = .14$
		Factor 3	.73	.19	.39	.01	
	2	Factor 1	.26	.15	.18	.09	$\Delta R^2 = .03$
	1	Factor 1	.22	.14	.15	.13	$R^2 = .16$
		Factor 3	.60	.18	.32	.01	
	2	Factor 2	−.20	.24	−.09	.42	$\Delta R^2 = .01$
	1	Factor 1	.38	.15	.26	.01	$R^2 = .08$
		Factor 2	.05	.24	.02	.84	
	2	Factor 3	.65	.19	.35	.01**	$\Delta R^2 = .09$
Conduct problems	1	Factor 2	.07	.03	.24	.01	$R^2 = .30$
		Factor 3	.09	.02	.40	.01	
	2	Factor 1	.07	.02	.37	.01**	$\Delta R^2 = .10$
	1	Factor 1	.07	.02	.40	.01	$R^2 = .39$
		Factor 3	.08	.02	.34	.01	
	2	Factor 2	.04	.03	.12	.18	$\Delta R^2 = .01$
	1	Factor 1	.08	.02	.44	.01	$R^2 = .32$
		Factor 2	.06	.03	.22	.02	
	2	Factor 3	.07	.02	.31	.01**	$\Delta R^2 = .08$

Note: The YPI factors measure: grandiosity/manipulation (Factor 1), callous-ness/unemotionality (Factor 2) and impulsivity/irresponsibility (Factor 3). The row presenting 'Step 1' indicates the result for the regression model in-cluding two of the three YPI factors. The row named 'Step 2' shows results for the regression model after addition of the third YPI factor. ΔR^2 indicates the incremental validity of the YPI factor that was added in step 2.

*The correlation is significant at the .05 level.

**The correlation is significant at the .01 level. (All tests one-tailed).

significantly predicted only by Factor 2 (callous, unemotional), which resembles the results of the correlational analyses. Factor 1 (grandiose, manipulative) and Factor 3 (impulsive, irresponsible) were related to maladaptive emotion regulation in the correlation. In the regression analyses, only Factor 3 (impulsive, irresponsible) made a significant unique contribution to the regression model. Furthermore, the correlational relatedness of all three factors to conduct problems could be specified by regression analyses: only Factor 1 and 3 predicted incremental variance of conduct problems.

One-way analysis of variance (ANOVA)

To examine group differences within the factors of the YPI with respect to emotional symptoms and emotion regulation, a one-way ANOVA was carried out. Participants were divided into three equal sized groups – low, middle, and high scorers – according to their total scores on the YPI. The analyses were conducted for each factor of the YPI separately. The results are shown in Table 4. They revealed no significant differences for adaptive emotion-regulation. Furthermore, results indicated no significant group differences for emotional problems on factor level although differences were significant for total YPI scores. For maladaptive emotion-regulation the groups differed significantly in total YPI score and in their scores for Factors 1 (grandiose, manipulative) and 3 (impulsive, irresponsible) but not in their Factor 2 (callous, unemotional) scores.

Independent sample *t*-tests (Scheffé correction) were carried out for each factor of the YPI. This was intended to illuminate trend-significant relationships between the variables. The analyses indicated the following significant group differences. Maladaptive emotion regulation: YPI Factor 1 low-high scorer (mean difference $= -10.89$; $p < .01$) and moderate-high scorer (mean difference $= -13.43$; $p < .01$); YPI Factor 3 (impulsive, irresponsible) low-moderate scorer (mean difference $= -9.62$; $p < .05$) and low-high scorer (mean difference $= -13.85$; $p < .01$). The results of multiple comparisons are graphically displayed in Figures 1, 2, and 3.

Discussion

The present study sought to investigate the relationship between emotional symptoms, the quality of emotion regulation and psychopathic personality

Table 4. One-way ANOVA for the three YPI factors in three equal sized groups with low, moderate, and high scorers.

YPI		*F*	*P*
Factor 1	Maladaptive emotion regulation	7.71	.00**
	Emotional symptoms	.34	–
Factor 2	Maladaptive emotion regulation	2.12	–
	Emotional symptoms	2.06	–
Factor 3	Maladaptive emotion regulation	8.28	.00**
	Emotional symptoms	1.17	–
Total	Maladaptive emotion regulation	7.86	.00**
	Emotional symptoms	4.61	.01*

Note: The YPI factors measure: grandiosity/manipulation (Factor 1), callous-ness/unemotionality (Factor 2) and impulsivity/irresponsibility (Factor 3).

The Degrees of Freedom are 103 for each calculation.

*The correlation is significant at the .05 level.

**The correlation is significant at the .01 level. (All tests one-tailed).

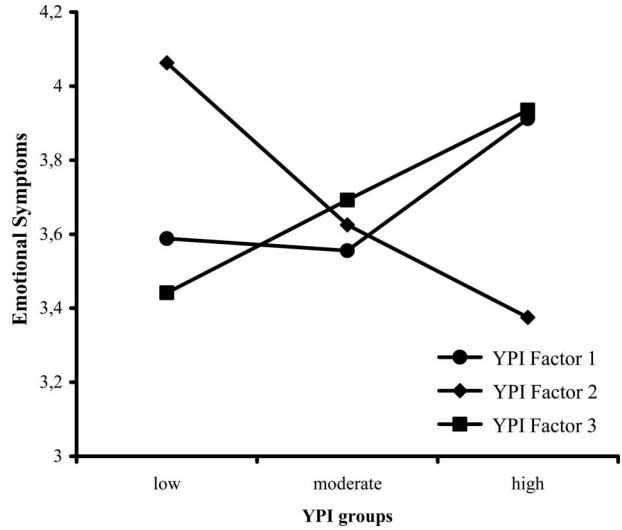

Figure 1. Multiple comparisons: emotional symptoms in the three YPI groups (low, moderate, and high YPI total scores) for each YPI factor.

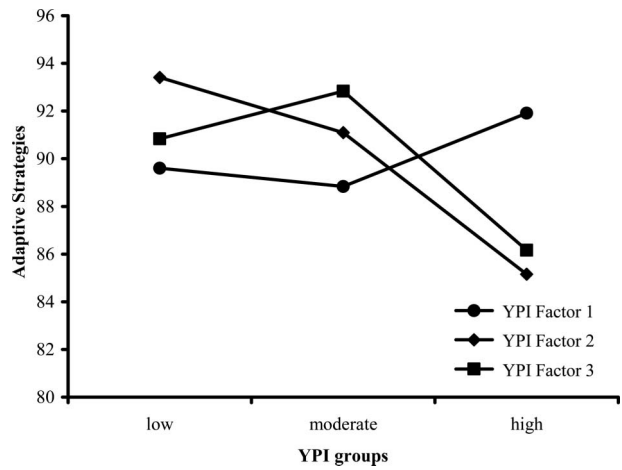

Figure 2. Multiple comparisons: adaptive emotion regulation strategies in the three YPI groups (low, moderate, and high YPI total scores) for each YPI factor.

traits. In part the results confirmed the hypotheses. However, the divergence of the results for each of the three YPI factors also highlighted the need for a differentiated view of psychopathy.

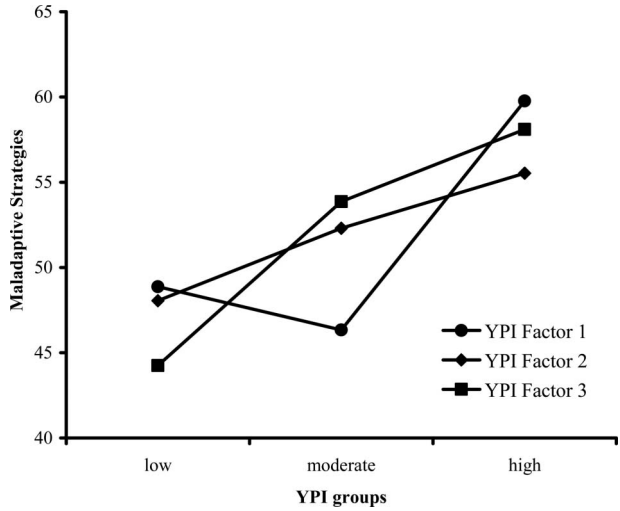

Figure 3. Multiple comparisons: maladaptive emotion regulation in the three YPI groups (low, moderate, and high YPI total scores) for each YPI factor.

Psychopathy and emotional symptoms

Emotional symptoms are thought to reflect the subjective experience of negative emotions. High levels of emotional symptoms have been associated with a number of psychological disorders including conduct disorder (Eisenberg & Morris, 2002; Kopp, 1989). In the current sample, however, total psychopathy scores were highly positively correlated with conduct problems but generally unrelated to emotional symptoms. Hence, the prior empirically founded correlation between conduct problems and emotional symptoms does not seem to be generally true for individuals with psychopathic traits. Results for psychopathy and emotional symptoms could be specified when each of the three psychopathy factors was analyzed separately.

The first factor of the YPI describing grandiose and manipulative personality traits was not correlated with emotional symptoms but was correlated with SDQ conduct problems. However, group comparisons showed that individuals with high scores on this psychopathy factor tended to experience more emotional symptoms then low scorers. This was not in line with our predictions but may be explained by the tendency of grandiose individuals to feel easily insulted and mortified when criticized or questioned. This tendency, reported in the literature as being a characteristic of grandiose and narcissistic personalities, could in turn lead to the subjective experience of negative emotions. For example (Miller, Widiger, & Campbell, 2010) recently referred to 'grandiose and vulnerable variants'

(Miller et al., 2010, pp. 3–4) of these personality types. This may also result in a lower level of social functioning in this group, indicated by high levels of conduct problems.

In contrast, callous unemotional personality traits (Factor 2) seemed to be related to low emotional symptoms, which confirms the hypothesis and is in line with the literature. This factor of psychopathy has often been associated with affective detachment which in turn is associated with low self-reported general affect and emotional symptoms in particular (Blair, Colledge, Murray, & Mitchell, 2001; Herpertz & Sass, 2000; Sutton, Vitale, & Newman, 2002). This was especially prominent in earlier studies when the variance of the other two psychopathy factors was removed (Hall et al., 2004). It has been suggested that the low levels of emotional symptoms may result from inadequate processing and integration of stimuli provoking these negative affects (Cappadocia et al., 2009). The second factor was also not associated with conduct problems, although it is usually associated with severe and persistent antisocial behavior (Hall et al., 2004; Hildebrand, De Ruiter, & Nijman, 2004; Woodworth & Porter, 2002). This result could be due to the fact that the main features of conduct problems reflect impulsive and reactive behavior deviancy and irresponsible behavior which are covered mainly by the third factor of the YPI, whereas the second factor relates to planned and directed aspects of antisociality.

Impulsive and irresponsible personality traits (Factor 3) were significantly positively related to both emotional symptoms and conduct problems. This was found both in regression analysis and in the trends of mean comparisons and matches with the expectations for this factor which were based on prior empirical findings (Garnefski & Kraaij, 2007). This component of psychopathy has consistently been found to share a number of features of conduct disorder and has been associated with low social functioning, low adjustment and low self-reported well being, all of which have been found to be associated with emotional symptoms (Hall et al., 2004; Verona, Patrick, & Joiner, 2001; Vincent, Vitacco, Grisso, & Corrado, 2003).

Psychopathy and emotion regulation

As another goal, the current study aimed to examine the effectiveness of the emotion regulating strategies in reducing negative emotions in individuals with psychopathic traits. The total psychopathy score was related to maladaptive emotion regulation and unrelated to adaptive regulation strategies. These results support other studies' findings of maladaptive emotion regulation in young individuals with conduct problems (Eisenberg, Fabes et al., 2000). However, as mentioned above, the total psychopathy score was not related to emotional symptoms but strongly related to the SDQ conduct problems score. Hence, the relationship between maladaptive

emotion regulation and emotional symptoms does not seem to hold for the population of psychopathic individuals. Again, it was possible to examine these results in more detail by applying the three-fold model of the YPI and assessing each factor independently of the other two.

Individuals with high Factor 1 scores (grandiose, manipulative) claimed to use both maladaptive and adaptive strategies to regulate negative emotional states. It had been hypothesized that this factor would be unrelated to emotion regulation strategies. However, since this factor correlated highly with conduct problems and showed a tendency for elevated emotional symptoms it is not surprising that emotion regulation in this group is often maladaptive. The finding that both adaptive and maladaptive regulation strategies are used is striking as, according to the manual of the FEEL-KJ, the two scales tend to be negatively correlated in normal populations (Grob & Smolenski, 2005). It could mean that regulation strategies work differently in individuals with the grandiose component of psychopathy and that maladaptive emotion regulation is not related to high levels of emotional well-being (D. Horowitz & A. Grob, personal communication, August 17, 2011). It may be suggested, for example, that to investigate emotion regulation in individuals with high Factor 1 scores emotion regulation strategies need to be conceptualized in a different way (e.g. as internalizing and externalizing strategies). It has been suggested that emotion regulation strategies function differently in certain psychopathologies (Kring & Sloan, 2010). This may be an important peculiarity of the manipulative, grandiose factor of psychopathy and may call the usefulness of this self report questionnaire for assessing emotion regulation strategies into question.

Callous, unemotional individuals (Factor 2) showed no tendency to use either of the emotion regulation strategies. Although the comparison of low and high scorers showed a tendency for the use of maladaptive rather than adaptive strategies for regulation this could not be confirmed in regression in terms of significance. This may be seen as supporting the reasons discussed above for the low occurrence of emotional symptoms and conduct problems in this group. Shallow affectivity, emotional detachment, and a tendency to behave in well-planned and goal directed ways are the core features of these individuals. They lead to a low self-reported level of negative emotion and mean that elaborate emotional regulation strategies may not be necessary. In earlier studies, such individuals have been found to show a severe lack of insight when asked to explicitly describe the relevance and impact of their affects and the quality of their regulation and are even known to misclassify the experience of negative emotionality (Hall et al., 2004). The combination between low emotional symptoms, low conduct problems, and no explicit tendency for emotion regulation is different from the correlations found in offenders in general (Eisenberg & Fabes, 1990; Eisenberg & Morris, 2002; Gross, 2002). As suggested above, the affective features of the psychopathic personality may be the ones that characterize the construct and distinguish it

from other profiles found among antisocial offenders (Aguilar, Sroufe, Egeland, & Carlson, 2000; Barry et al., 2000; Edens, Marcus, Lilienfeld, & Poythress, 2006; Poythress & Skeem, 2006).

In contrast, Factor 3 (impulsive, irresponsible) showed a pattern that most closely resembles previous findings for the quality of emotion regulation in antisocial individuals and confirmed the current hypotheses. It was found to significantly predict maladaptive, but not adaptive, regulation strategies and was strongly related to conduct problems. These results, and the finding of high emotional symptoms, are very much in line with the literature. Impulsive and irresponsible features (Factor 3) have consistently been associated with impulsive aggression and a lack of behavioral control (Porter & Woodworth, 2006). Both features may be considered to result from a failure of adaptive emotion regulation and the use of maladaptive strategies. These are not effective in altering the aversive emotional state and thus lead to a high level of emotional symptoms (Eisenberg et al., 2005; Grob & Smolenski, 2005). This relationship has been confirmed in a number of studies and has even been related to neurobiological findings (Cappadocia et al., 2009; Davidson, Putnam, & Larson, 2000).

Clearly, emotion regulation strategies are complex and include an enormous number of processes that may vary with emotional state. The correlates of each of the three emotions addressed by the FEEL KJ questionnaire – anger, sadness, and anxiety – were therefore examined. This analysis confirmed that the three psychopathy factors were not related to adaptive emotion regulation for all three emotions. However, maladaptive emotion regulation in angry states was related to all three factors of psychopathy. It seems obvious that, in a sample of violent offenders, anger may be the most prominent and well-known feeling that is regulated with low functionality. This applies for individuals with and without psychopathic personality traits. Numerous studies have found that offender samples show severe deficits in affective naming and attribution of all basic emotions expect the one of anger (Blair et al., 2001; Davidson et al., 2000). It has even been suggested that, due to a neural dysfunction, maladaptive emotion regulation in angry states may even constitute a 'possible prelude to violence' (Davidson et al., 2000, p. Title). Grandiose, manipulative (Factor 1), and impulsive, irresponsible (Factor 3) characteristics were also related to maladaptive emotion regulation in anxious states, but callous, unemotional (Factor 2) characteristics were not. Factor 3 (impulsive/irresponsible) was the only factor that was consistently and highly significantly associated with maladaptive regulation of all three emotions. These results are in line with the finding that especially psychopathic individuals with characteristics of callous unemotional psychopathic individuals (Factor 2) show impaired performance in detection, naming, and attribution of stimuli provoking sadness and anxiety but not those provoking anger (Blair et al., 2001;

Blair et al., 2002). The fact that regulating strategies did not seem to be used in states of sadness and anxiety may point to a special deficit in these affects.

General discussion

Our results indicate that the three psychopathy factors addressed by the YPI differ in important ways in their relationships with negative emotions and emotion regulation study. They thus uphold the view that psychopathy should be investigated according to its sub-constructs and demonstrate the external validity of the three-factor model of psychopathy. Since the current study investigated a sample of young offenders it is especially striking that substantial differences were so prominent at this early stage of life. The findings for individuals with grandiose, manipulative psychopathy traits (Factor 1) indicated a tendency for negative emotions, a significantly high incidence of conduct problems but no relationship with maladaptive emotion regulation. It remains to be discussed if this may reflect the influence of manipulation tendencies. Besides this consideration it should be taken into account that the constitution of grandiose, manipulative psychopathic individuals is the least investigated one within the construct of psychopathy and that close examinations are few. Therefore, it may be hypothesized that these individuals exhibit a particular pattern of emotional processing that has an explicit influence on subjective well-being and the regulation of negative emotions. Callous, unemotional psychopathy features (Factor 2) correlated with low negative emotions, low conduct problems, and no tendency for maladaptive emotion regulation. These results crucially differ from earlier results from the general antisocial population and point to an important distinction between emotionality and its regulation in antisocial individuals and callous, unemotional ones. The low occurrence of conduct problems in this group should be further discussed. The results for impulsive, irresponsible traits (Factor 3), defined by a tendency for high negative emotions, high conduct problems and maladaptive emotion regulation, come closest to the characteristics of the description of the general population of antisocial individuals (Eisenberg & Morris, 2002). This is in line with previous findings and implies the relevance of a clear distinction between these traits of psychopathy and common antisociality (Cooke & Michie, 2001).

Limitations and future implications

The following general remarks have to be considered when discussing the current results. With reference to the entire sample the implementation of the FEEL-KJ revealed that these young men stated not to be familiar with the emotional states in question, or with the idea of regulating them. The associations that came up during the assessment were sometimes plain and

their descriptions tended to lack affective words. This has been described as one primary feature of psychopathic individuals (Cleckley, 1988), but was not restricted to these individuals in the current sample. This may have influenced the current analysis. Future investigations should therefore focus on customizing the assessment of emotion regulation to the special challenges of the incarcerated population. It would also be interesting to test differences between the group of offenders and clinically depressed or anxious people to gain a deeper insight into the processes of emotion regulation in different groups.

Methodological limitations of the study concern the assessment of negative emotions, psychopathy, and emotion regulation by self-report, which always carries several risks. Firstly, assessing emotion regulation via self-report implies that only conscious (or cognitive) components of emotion regulation are being accessed. This means that all conclusions from these results can only refer to the conscious components of emotion regulation. It has been emphasized that emotion regulation is highly complex and includes many levels and multiple processes (4). Self report is therefore a useful method for accessing the cognitive component but cannot give a complete picture of emotion regulation. To make the assessment more coherent, future research should therefore include external or behavioral measures of emotion regulation. Secondly, the FEEL-KJ's focus on adaptive and maladaptive emotion regulation strategies represents just one of many ways in which emotion regulation can be assessed. A number of other conceptualizations have also been proposed (Gross, 1998, 2002). Their suitability for assessing emotion regulation and yielding differentiated results needs to be considered with regard to psychopathy.

Under consideration of these limitations the current findings may have important implications for the development of prevention and intervention methods. It has been stated that around 75% of all psychological disorders are associated with dysfunctions in emotions or emotion regulation (Kring & Sloan, 2010). This also seems apply for psychopathy. The details of these dysfunctions may vary depending on the disorder, or – as in the current study – may even vary between the manifestations of one disorder. Therefore, the relevance of affective experience and the improvement of emotion regulation skills should generally be considered a crucial part of therapeutic interventions (Kring & Sloan, 2010) and should be tailored to the peculiarities of each specific manifestation. With reference to young incarcerated individuals it should be kept in mind that maladaptive emotion regulation is thought to contribute to the development of violent and aggressive behavior (Hall et al., 2004). It should also be remembered that subjective well-being has been shown to be helpful in preventing recidivism (Weiner & Goldstein, 2003) and that emotional detachment has been consistently associated with re-offending (Patrick & Zempolich, 1998). It is therefore recommended that intramural treatment programs, especially

those targeting offenders with psychopathic personality traits, include tailored training in affectivity and emotion regulation.

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