

The development of a rating scale to screen social and emotional detachment in children and adolescents

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Abstract

Rating scales to assess psychopathic characteristics in children and adolescents show a considerable item overlap with rating scales to assess attention deficit hyperactivity disorder (ADHD), oppositional-defiant disorder (ODD) and conduct disorder (CD) symptoms. The aim of this study is to preliminary test a short questionnaire clinicians can use to screen the unique characteristics of psychopathy. Parental ratings of psychopathic characteristics and symptoms of ADHD, ODD and CD were gathered in a community sample of 2535 4–18-year-old Dutch children. The dimensionality of the ratings was determined by factor analysis and related to ADHD, ODD and CD. Two factors emerged covering egocentric-narcissistic and callous-unemotional characteristics. To avoid unnecessary stigmatization of youngsters the first factor is referred to as the “social detachment dimension” and the second as the “emotional detachment dimension”. Parental ratings were reliable across all age and gender groups, and correlated moderately with ODD and CD, but not with ADHD. Preliminary findings support a two-dimensional syndrome depicting respectively narcissistic and unemotional characteristics. The syndrome is associated with ODD and CD symptoms and possibly depicts a subtype of the ODD/CD childhood disorder. Copyright © 2007 John Wiley & Sons, Ltd.

Key words: childhood, psychopathy, ADHD, ODD/CD, assessment

Introduction

The psychopathic syndrome has been documented as a specific set of personality traits in adults characterized by at least three dimensions: an egocentric and deceitful interpersonal style, expression of deficient affect (callous and unemotional), and an impulsive and irresponsible behavioural style (Cleckley, 1941; Hare et al., 1999; Cooke et al., 2004). A substantial body of evidence suggests that the syndrome is linked to severe social dysfunction, as psychopathic offenders account for a disproportionate amount of crime, commit more violent crimes and have higher rates of recidivism (Harris et al., 1991; Hemphill et al., 1998).

Recently, researchers have also begun to investigate psychopathy in youths. Studies have not only linked persistent adult criminality to oppositional-defiant,

aggressive and anti-social behaviour in childhood (Moffit, 1993; Loeber et al., 1998), but have also shown that callous, unemotional characteristics in childhood are associated with future anti-social behaviour (Loeber et al., 2002). This opens the door for prevention, as early detection and treatment of psychopathic tendencies in children may possibly combat the rise of serious and violent offending behaviour witnessed among youngsters in Western societies (Loeber and Farrington, 1998). This notion of prevention is particular appealing because adult psychopathic criminals are barely amenable to treatment (Ogloff et al., 1990; Rice et al., 1992; Seto and Barbaree, 1999).

However, the early identification of psychopathic traits is not without debate. A first criticism is that there is as yet no evidence supporting the validity of

stable personality disorders in general and of a psychopathic personality disorder in particular, let alone in childhood and adolescence. For example, many psychopathic characteristics during childhood and adolescence, like defying rules, can be transient phenomena appearing in the course of relatively normal development (Seagrave and Grisso, 2002). Yet, this does not undermine the idea that the expression of psychopathic traits during childhood and adolescence can be conceived of as a risk factor possibly relevant for diagnosis and treatment.

A second criticism is that the defining characteristics of psychopathy were derived from research among adult criminals, with many characteristics not being applicable to children, e.g. the presence of behavioural problems during childhood and violations of conditional release. Although there is still debate as to what dimensions make up the core, instruments measuring psychopathic traits in children and adolescents, like the 20-item Hare P-scan Youth Version (Forth et al., 2003) and the 20-item Anti-social Process Screening Device (Frick and Hare, 2001), largely revealed the same three dimensions also found in adulthood (Frick et al., 2000; Cooke & Michie, 2001; Kossos et al., 2002; Lee et al., 2003): an interpersonal factor covering narcissistic traits, an affective factor covering callous-unemotional traits, and a behavioural factor covering impulsive, irresponsible and law-breaking behaviour.

Although it can be argued that these three dimensions provide a valid representation of the adult construct of psychopathy tailored to children and adolescents (Frick, 2000), concerns can be raised regarding the content overlap of these dimensions with the major disruptive behavioural disorders found in childhood (Burns, 2000). Contents like impulsivity and aggressive and law-breaking behaviour closely resemble the symptoms of attention deficit hyperactivity disorder (ADHD), oppositional-defiant disorder (ODD) and conduct disorder (CD), which results in a poor discriminatory validity. The limited ability to screen for the unique psychopathic characteristics makes the existing instruments less efficient for the identification of these characteristics in children displaying disruptive behavioural disorders.

To match needs and services for children with ADHD and ODD/CD appropriately, clinicians must, however, not only be able to assess the symptoms of the disruptive behavioural problems correctly (Angold

et al., 1999; Farmer et al., 2002), but also screen the narcissistic and callous-unemotional trait associated with psychopathy, as research has suggested that the behaviourally difficult children also displaying these traits need a different kind of treatment than the behaviourally difficult children not showing these traits (Goldstein et al., 1998). Although many valid and reliable rating scales exist to assess the disruptive behavioural problems in children (Meyers and Winters, 2002; Collet et al., 2003) and most clinicians consider the use of such scales as standard practice for the diagnosis and treatment, none of these instruments measure also the egocentric and callous-unemotional characteristics associated with psychopathy. The purpose of this study therefore was to develop a rating scale to be filled in by parents that only covers these characteristics. In the future clinicians possibly can use this scale to screen whether children displaying disruptive behavioural disorders are also specifically at risk with regard to the egocentric and callous-unemotional characteristics assumed to be associated with psychopathy.

The sub-goals of the study were: (1) to test the dimensionality of this parental rating scale; (2) to assess the reliability of the parental ratings; (3) to explore the associations with the major disruptive behavioural disorders of childhood (ADHD, ODD and CD).

The general Dutch population of children and adolescents was taken as the unit of investigation because a sample of this population can be used to specify normal population based norms. Such norms can be used to determine whether individual children display levels of egocentric and callous-unemotional characteristics that are substantially higher than the levels displayed by normal children of comparable age and gender. Young children were included to find out whether the traits are already observable at a young age. In this first study parental observations were chosen as the source of information because the sample partly comprised young children. Moreover, parental observations are also thought to be more valid than self reports because individuals displaying psychopathic characteristics often lie, manipulate and distort facts (Lilienfeld, 1998).

Method

Procedures

A sample of 500 schools was randomly selected from all schools for primary and secondary education in the

Netherlands. In each school one class was randomly selected. School directors were informed about the study and asked to hand over a letter to the parents of the five youngest and five oldest pupils in this class. This letter explained the purpose of the research, specified the requested parental contribution and explained the anonymous nature of the study. Parents were asked to return a written consent to participate in the study. Approximately 5000 families received this request, of which 2535 consented to participate and returned a completed questionnaire without missing values (response rate 51%). This sample was used for the main study.

To investigate agreement in the parental ratings the parents received two questionnaires, one for the father and one for the mother, with the request to fill in the rating scales for their child independently of each other on the same day. Parents of 936 children were willing to participate in this study to determine the inter-rater reliability.

To study the stability of the ratings the parents of the main sample were also asked to fill in the same questionnaire again 3 weeks later. Parents of 713 children were willing to participate in this study to determine the test–retest stability.

Data collection took place in 2003.

Participants

Main sample

The main sample comprised 2535 schoolchildren between 4 and 18 years (mean age = 10.1 years, standard deviation = 3.2 years). The dispersion across age groups was: 4–6 years: 589; 7–9 years: 849; 10–12 years: 573; 13–15 years: 343; 16–18 years: 181. This listing suggests that the older age groups (13–15, and in particular 16–18) are underrepresented, as in the general youth population about equal numbers in each age group are to be expected (CBS, 2003). To get a further impression of the representativeness of the sample the demographic characteristic of the sample are listed in Table 1 and compared with the population characteristics of the general youth population as presented by the Dutch bureau of the census (CBS, 2003).

Table 1 shows that the demographic characteristics of the main sample and the general Dutch population of children and adolescents are largely comparable. This suggests that the sample studied reflects the Dutch population of children and adolescents in most of the demographic respects rather well, except for the fact that older adolescents are underrepresented in the main sample.

Table 1. Demographic characteristics of the main sample ($N = 2535$)

	Sample 4–18 years	General Dutch youth population 4–18 years (CBS, 2003)
Gender	51% male 49% female	51% male 49% female
School	65% primary education 5% special education 30% secondary education	61% primary education 4% special education 35% secondary education
Age primary caretakers	41.0 years (standard deviation: 5.5)	39.0 years (standard deviation: 6.5)
Two parent families	83%	82%
One parent families	15%	16%
Child welfare institutions ¹	2%	2%
Educational level of families	27% lower educational level 49% moderate educational level 24% higher educational level	29% lower educational level 49% moderate educational level 22% higher educational level

¹Children in child welfare institutions were rated by their professional caretakers.

Inter-rater sub-sample

The mothers and fathers of 936 children consented to participate in the inter-rater agreement study. The mean age of the children in this sub-sample was 10.2 years (standard deviation = 3.2 years), of whom were 50% boys and 50% girls. Of the children 65% attended schools for primary education, 31% schools for secondary education and 4% schools for special education. All the children lived in a family with two parents, and 4% of the families had an ethnic minority background. Because the inter-rater reliability of the mothers and the fathers was sufficiently high with regard to all measures (all intra-class correlations > 0.70), for these children the mean ratings of both parents were used in the main study.

Test-retest sub-sample

The parents of 713 children consented to participate in the test-retest study. The mean age of the children in this sub-sample was 9.2 years (standard deviation = 2.8 years), of whom were 51% boys and 49% girls. Of the children 65% attended schools for primary education, 31% schools for secondary education and 4% schools for special education. About 92% of the children lived in a family with two parents, 6% in a one-parent family and 2% in residential institutions, and 4% of the families had an ethnic minority background. Although in this sub-sample the younger children are overrepresented, the validity of the test-retest study is not threatened, as the assessment of the test-retest reliabilities will take place in the sub-samples of the younger and the older children separately.

Measures

Psychopathic traits related questionnaire

To assess the unique symptoms of psychopathy a questionnaire was used covering 16 items related to the construct of psychopathy. The item contents were derived from the literature discussing the characteristics of psychopathy, as well as from existing screening devices with regard to psychopathy in adults, children and adolescents (cf. Hare, 1991, 1998; Lykken, 1995; Lynam, 1996; Widegar and Lynam, 1998; Frick & Hare, 2001; Forth et al., 2003).

Items were phrased in the Dutch language. Contents that referred to adult problem behaviour were excluded. Contents that overlapped with the core symptoms of the disruptive behavioural childhood disorders as

mentioned in the DSM-IV (APA, 2001) and ICD-10 (WHO, 2003) were also excluded, so that the list only covered as much the unique set of psychopathy-related characteristics. Contents excluded from our list referred, for example, to impulsivity (closely relates to ADHD), early behavioural problems (closely relates to ODD) and pathological lying and cheating and serious criminal and anti-social behaviour, violations of conditional release and criminal versatility (closely relates to CD/ASP). The left-hand column of Table 2 lists the contents of the item set that was used in the study.

The parents were instructed to rate the occurrence of each of the items on a five-point scale as follows: 0, not at all; 1, occasionally (from time to time); 2, fairly frequently (monthly); 3, frequently (weekly); 4, very frequently (daily).

Disruptive behavioural disorders (ADHD, ODD and CD)

To assess ADHD, ODD and CD a DSM-IV (APA, 2001) and ICD-10 (WHO, 2003) referenced symptoms questionnaire was used, comparable to the disruptive behavioural scale (Pillow et al., 1998).

ADHD refers to the three domains of inattention (easily distracted and failure to sustain attention), hyperactivity (hyperkinesias and motor restlessness) and impulsivity (uncontrolled and dis-inhibited behaviours). Diagnosis of the disorder according to the DSM-IV requires that a child should have six or more symptoms out of nine well-defined inattention symptoms or six or more symptoms out of nine well-defined hyperactivity-impulsivity symptoms during the preceding 6 months. The questionnaire comprised all the 18 ADHD-symptoms mentioned in the DSM-IV (APA, 2001) and ICD-10 (WHO, 2003).

ODD refers to a recurrent pattern of negativistic, defiant, disobedient and hostile behaviour towards authority figures. Diagnosis of the disorder according to the DSM-IV requires that a child should have four or more symptoms out of eight during the preceding 6 months. The questionnaire used in this study comprised the eight symptoms of ODD as specified by the DSM-IV (APA, 2001) and the ICD-10 (WHO, 2003).

CD refers to a repetitive and persistent pattern of behaviour in which the basic rights of others and major age-appropriate social norms or rules are violated, like aggression to people and animals, destruction of property, deceitfulness or theft and serious violations of rules. Diagnosis of the disorder according to the

Table 2. Factor structure of the item list with psychopathic traits

	Oblimin rotated principal axis factoring exploratory factor analysis First random split half of the community sample (<i>N</i> = 1297)		Robust maximum likelihood confirmatory factor analysis Second random split half of the community sample (<i>N</i> = 1238)	
	Loadings social detachment	Loadings emotional detachment	Loadings	Error
<i>Social detachment</i>				
Has difficulty adapting to others	0.71	0.59	0.82 ¹	0.57
Aims at direct fulfilment of own desires and needs	0.75	0.39	0.51	0.86
Acts pushily	0.75	0.50	0.75	0.66
Always wants to stand in the spotlight	0.81	0.27	0.75	0.65
Bends others to his/her will	0.85	0.40	0.64	0.76
Acts charming, takes someone in	0.75	0.38	0.64	0.77
Is very sure of him/herself	0.62	0.31	0.80	0.60
Undertakes risky activities	0.62	0.34	0.64	0.76
<i>Emotional detachment</i>				
Is not concerned about feelings of someone else	0.52	0.77	0.83 ²	0.70
Shows no emotions	0.16	0.71	0.72	0.69
Does not worry about consequences of deeds	0.53	0.73	0.76	0.64
Shows no remorse	0.44	0.74	0.73	0.68
Leads his own life	0.28	0.75	0.78	0.62
Acts coldly, is indifferent to opinions of others	0.39	0.69	0.72	0.69
Does not feel responsible for misbehaving	0.58	0.76	0.62	0.78
Is insensitive for punishment	0.54	0.64	0.61	0.79
Correlation between factors	0.48		0.70	
Eigenvalues	7.3	1.8		
Percentage variance explained	45%	11%		

¹Standardized factor loadings on the first factor.

²Standardized factor loadings on the second factor.

DSM-IV requires that a child should have three or more symptoms out of 15 symptoms of aggressive and anti-social behaviour in the past 12 months, with at least one symptom present in the last 6 months. In this study the following symptoms were included: bullying, physical fighting, use of a weapon, sets fires, being cruel, steals, destructs property, harms others, breaks in, lies, cheats to obtain goods, shoplifts, stays out late, runs away and truants. This listing largely covers the list of

CD symptoms in the DSM-IV (APA, 2001) and the ICD-10 (WHO, 2003).

The parents were instructed to rate the occurrence of each of the above core symptom items on a five-point scale as follows: 0, not at all; 1, occasionally (from time to time); 2, fairly frequently (monthly); 3, frequently (weekly); 4, very frequently (daily).

Some items of CD are not applicable to younger children, for example "stays out late at night". Parents

were instructed to score a zero with regard to such items.

The reliability was as follows: the internal consistency of all three measures was >0.80 , the inter-rater reliability was >0.70 and the test–retest reliability was >0.75 . The first figure is based on the total sample, while the last two figures are based on the sub-samples that participated in the inter-rater study, respectively, the test–retest study. The reported minimum figures were also found in the various age and gender groups (4–11-year-old boys and girls and 12–18-year-old boys and girls) (Scholte and Van der Ploeg, 2005).

Statistical analysis

Dimensionality

To determine dimensionality of the item list measuring the unique psychopathic characteristics the sample was randomly divided into two halves. In the first sample an exploratory factor analysis was done because the assessment of psychopathic characteristics without symptoms referring to disruptive behavioural problems has not yet been done in community samples and could result in a different structure than the structures found in other studies using item lists that also comprised symptoms of disruptive behavioural problems. The Scree-plot was used to determine the number of factors. Oblimin rotation was applied to determine the items that loaded on the extracted factors, as according to the literature dimensions covering psychopathic traits are often inter-correlated.

The second split half sample was used to test the model found in the exploratory analysis by means of a confirmatory factor analysis. Robust maximum likelihood was used as the estimation method with EQS as the computational program (Bentler, 1995). The robust variant of maximum likelihood was applied to correct possible deviations of multivariate normality. In confirmatory factor analysis it is further assumed that significant χ^2 -values represent poor fits. The value of the χ^2 -“goodness-of-fit” is, however, determined by the number of cases in the sample, with large numbers of cases deflating the test result. To correct this, other fit indices exist that are independent of the sample size: the comparative fit index (CFI) and the robust variant of the CFI (RCFI) used here that corrects for deviations from multivariate normality. Both the CFI and the RCFI range from zero to one. Models with a (R)CFI of above 0.90 are usually considered to represent the

observed covariance matrix satisfactorily. In addition the root mean square error of approximation (RMSEA) was calculated. The measure reflects the lack of fit of a model. Smaller values thus represent a better fit. Models with values of 0.05 or smaller are usually considered to represent the data well (McCallum et al., 1996).

Reliability

To assess the reliabilities of the parental ratings, three measures are relevant (Meyers and Winters, 2002). The internal consistency refers to the extent that the items of a rating scale relate to each other. In this respect Cronbach’s alpha is a widely used estimate, with diagnostic scales requiring alpha values of 0.80 or above. Item-scale correlations were also calculated. Correlations of greater than 0.35 represent satisfactory contributions.

Reliable assessment further implies that administration of the rating procedure twice by the same person yields comparable results. To establish this test–retest reliability a period of about 3 to 4 weeks between both test administrations seems optimal. Finally the inter-rater reliability refers to the extent that two independent raters reach the same conclusion about the same child. Instead of the Pearson product moment correlation coefficient, the intra-class correlation coefficient is usually used to estimate the test–retest and the inter-rater reliabilities, as this estimate measures the amount of exact agreement while the Pearson correlation coefficient measures only the amount of relative agreement (Deyo et al., 1991). According to Fleiss et al. (2003) intra-class values greater than 0.75 express excellent agreement, values between 0.40 and 0.75 may be taken to represent fair to good agreement and values below 0.40 represent poor agreement.

Associations

To investigate the associations with the disruptive behavioural disorders product moment correlations were calculated between the two psychopathic traits dimensions found in the factor analysis and the measures of ADHD, ODD and CD. The interaction of the two dimensions was also tested by multiplying the scores on both dimensions (Aiken and West, 1991) and also correlating this new measure with the measures of the disruptive behavioural disorders. Correlations were also calculated with age and gender. The ADHD, ODD and CD measures were, however, inter-correlated. Assuming that these measures represent valid con-

structs, as they are based on the disorder symptoms as presented in the DSM-IV and ICD-10, these inter-correlations reflect the comorbidity of these disorders. The ratings of the two dimensions were also inter-correlated. To correct such possible comorbidities, independent associations were also calculated by means of a regression analysis in addition to the product-moment correlations. Examination of the residuals scatterplots suggested that the assumptions for regression analysis were satisfactorily met (Tabachnick and Fidell, 1989).

The guidelines of Cohen (1988) were used to estimate the magnitude of the relationships, with correlations of 0.1 representing small associations, correlations of 0.3 representing moderate associations and correlations of 0.5 and higher representing strong associations.

Results

Factor structure

The exploratory factor analysis was done on the first split half sample ($N = 1297$). The results of this analysis are presented in columns two and three of Table 2.

A two-factor solution explaining 56% of the variance emerged. The correlation between the oblimin rotated dimensions was 0.48. The items predominantly (factor loadings >0.60) loading on the first factor were "has difficulty adapting to others", "aims at direct fulfilment of own desires and needs", "acts pushily", "always wants to stand in the spotlight", "bends others to his/her will", "acts charming, takes someone in", "is very sure of him/herself" and "loves to undertake risky activities", while the items predominantly loading on the second factor were "is not concerned about feelings of others", "shows no emotions", "doesn't worry about consequences of his deeds", "shows no remorse", "leads his/her own life", "acts coldly, is indifferent to opinions of others", "does not feel responsible for misbehaving" and "insensitive for punishment".

Although items predominantly loaded on one factor, some items loaded also on the other factor. This suggests that these items are not completely unique for each factor, but are associated to both trait dimensions.

The two-factor model suggested by the exploratory analysis was subsequently tested by means of a confirmatory factor analysis using the second independent split-half sample as the data source ($N = 1238$) and Robust Maximum Likelihood as the method of estimation (see

the statistics part of the methods section). The model to be tested was specified as follows: the items that loaded in the exploratory model predominantly on the first factor were declared as belonging to the first factor and the items that loaded on the second factor were declared as belonging to the second factor. The first item of each factor was used as the reference variable and was given a fixed value of one. Both factors were further allowed to correlate. The factor loadings and error-terms that emerged are presented in the columns four and five of Table 2. The following fit-indices were found: $\chi^2 = 218$, $df = 101$, $p < 0.01$; RCFI = 0.95; RMSEA = 0.03. These RCFI and RMSEA fit-indices suggest that the specified two factor model that had emerged in the exploratory analysis represents the data satisfactorily well, according to the criteria mentioned in the statistics part of the methods section.

All computations were repeated for the boys and girls under and above the age of 12, and also for the fathers and the mothers separately. The results reflected the findings of the total sample.

The exploratory and confirmatory factor analytic findings thus suggest a two dimensional construct, with the first dimension covering egocentric or narcissistic characteristics, and the second covering callous, unemotional characteristics. Because the items loading on the first factor imply a profound denial of the reciprocal ego position normally found in relationships between human beings, this factor can be referred to as the "social detachment" dimension. Because the items loading on the second factor imply a profound denial of the emotional state normally found in human beings, this factor can be referred to as the "emotional detachment" dimension. To avoid unnecessary stigmatization of youngsters, these labels will be used to represent the egocentric and callous-unemotional dimensions of psychopathic traits found in this study.

The reliability of the parental ratings

Table 3 presents the reliability findings with regard to the parental ratings of the dimensions of social and emotional detachment found in the preceding paragraph.

Table 3 shows that the internal consistencies of the two dimensions and also of the composite scale comprising all items ranged from 0.88 to 0.92. All item-scale correlations were greater than 0.35. These findings suggest a good internal reliability of the scales.

Table 3 further shows that the intra-class correlations between the subsequent measures are above 0.80

Table 3. Reliability of parental ratings with regard to the rating scales

Dimensions	Internal consistency ¹ (N = 2535)	Test–retest reliability ² (N = 713)	Inter-rater reliability ² (N = 936)
Emotional detachment	0.88	0.83	0.68
Social detachment	0.88	0.80	0.72
Total scale	0.92	0.85	0.72

¹Cronbach alpha.²Intra-class correlation coefficient.**Table 4.** Descriptive statistics (mean sum scores, standard deviations in round brackets, 95th percentile cut-off point in square brackets) and gender and ages differences

	Total sample N = 2535	Boys 4–11 N = 876	Girls 4–11 N = 872	Boys 12–18 N = 433	Girls 12–18 N = 354
1. Total scale	6.5 (8.1) [23] ¹	6.6 (7.2) ² [22]	5.0 (5.9) [17]	9.5 (11.6) ^{2,3} [37]	6.2 (8.6) ³ [25]
2. Social detachment	4.0 (4.9) [15]	4.2 (4.5) ² [13]	3.5 (4.0) [11]	5.1 (6.8) ² [20]	3.6 (5.1) [15]
3. Emotional detachment	2.5 (4.1) [11]	2.4 (3.6) ² [10]	1.5 (2.7) [7]	4.4 (5.9) ^{2,3} [19]	2.7 (4.2) ³ [11]

¹95th percentile cut-off score of the normal population.²Significant gender difference within age group at $p < 0.01$, with the highest mean score labelled.³Significant age-group difference within gender group at $p < 0.01$, with the highest mean score labelled.

for all dimensions, which suggests good test–retest characteristics.

The mean difference score for the fathers and the mother were 0.14 (standard deviation = 2.6) for the social detachment scale, 0.19 (standard deviation = 3.2) for the emotional detachment scale and 0.33 (standard deviation = 5.2) for the total scale. The inter-rater reliabilities between the fathers and mothers were all nearby 0.70 or above, which can be evaluated as fair to good according to the criteria set out in the statistics part of the methods section.

All reliability indices were also computed for the 4–11-year-old boys and girls, as well as for the 12–18-year-old boys and girls. Findings showed all indices were also sufficiently high across the various age and gender groups (all Cronbach alpha's were 0.85 and above, all inter-rater intra-class correlations were 0.65 and above, and all test–retest intra-class correlations were 0.70 and above).

These findings suggest that the parental ratings of the psychopathic trait syndromes are sufficient reliable and largely meet the criteria that are specified for diagnostic rating scales.

The levels reported by parents

Table 4 presents the mean sum scores of the rating scales for the total sample, as well as the mean sum scores split up for gender and age group (4–11-year-old and 12–18-year-old children). The 95th percentile cut-off scores for the various subgroups are also listed in Table 4.

In both age groups the parents reported higher levels of social and emotional detachment for the boys than for the girls. Table 4 also shows that higher levels were reported for the older children than for the younger children. An exception is the social detachment scale. For the younger and the older girls about equal mean scores were reported by the parents.

Associations with the disruptive behavioural disorders

The next analysis pertains to the question of how the two dimensions of social and emotional detachment are related to the disruptive behavioural disorders. As elaborated in the statistics part of the methods section, this relationship was explored by calculating product moment correlations between the parental ratings of the two dimensions and the number of symptoms of

Table 5. Correlations between psychopathic trait syndromes and disruptive behavioural disorders

Dimensions	ADHD (N = 2535)		ODD (N = 2535)		CD (N = 2535)	
	Product moment correlations	Independent correlations (R ² = 0.08) ¹	Product moment correlations	Independent correlations (R ² = 0.35) ¹	Product moment correlations	Independent correlations (R ² = 0.34) ¹
Emotional detachment	0.19*	-0.06	0.46*	-0.04	0.50*	0.10*
Social detachment	0.20*	0.03	0.53*	0.24*	0.44*	0.02
Interaction of scales	0.24*	0.16*	0.57*	0.35*	0.56*	0.38*
ADHD	-	-	0.18*	0.03	0.25*	0.11*
ODD	0.18*	0.04	-	-	0.39*	0.10*
CD	0.25*	0.16*	0.39*	0.10*	-	-
Age	0.01	-0.01	0.07*	0.02	0.11*	0.04
Gender	-0.05*	-0.03	-0.08*	-0.01	-0.08*	-0.01

¹The figures reflect the coefficient beta.

* $p < 0.01$.

ADHD, ODD and CD rated by the parents. The interaction of the two dimensions was also investigated, as were the correlations with age and gender.

The comorbidity of measures was corrected by also calculating the standardized beta-coefficients by means of a regression analysis in addition to the product moment correlations. The findings are presented in Table 5. The regression analyses to calculate the standardized beta-coefficients (labelled hereafter as "independent correlations") included all the factors mentioned in Table 5.

Independent correlations with ADHD were hardly found. Only the composite of social and emotional detachment displayed a significant ($p < 0.05$) independent correlation with ADHD, but the association was rather low. The independent correlations showed further hardly any association between ADHD and ODD and a low correlation between ADHD and CD.

Rather high independent correlations emerged with the ODD and CD symptoms. The social detachment dimension was substantially associated with ODD, as was the interaction of social and emotional detachment. The product moment correlations that existed between ODD and ADHD, and also between ODD and CD, disappeared when independent correlations were applied. The major phenomena co-occurring with ODD were thus in particular the social detachment dimension and the

interaction of the social and emotional detachment dimensions.

With regard to CD, it emerged that only the interaction of the social and emotional detachment dimension had a substantial independent correlation. The product moment correlations that existed between CD and ODD, and also between CD and ADHD, disappeared when using independent correlations. The interaction of the social and emotional detachment dimensions was thus a major phenomenon co-occurring with CD.

Discussion

The purpose of this study was to develop a device that clinicians can easily use to screen unique psychopathy related characteristic in children and adolescents displaying disruptive behavioural disorders. To this end a rating scale was constructed comprising symptoms of psychopathy in children and adolescents that do not overlap with the symptoms of the disruptive behavioural disorders. To determine the relationship between childhood disorders and the unique characteristics related to psychopathy, the disruptive behavioural disorders were assessed by means of rating scales covering DSM-IV and ICD-10 related symptoms of ADHD, ODD and CD. The study took place in a sample of 2535 youngsters randomly selected from the general Dutch youth population. Parental ratings were used as the source of information.

Structure and reliability of the ratings

Exploratory factor analysis done on a first split-half sample randomly selected from the total sample suggested a model with two-dimensions that are inter-correlated. On the first factor items were loaded that covered narcissistic, egocentric characteristics. Because these characteristics imply a profound denial of the reciprocal ego position normally found in relationships between human beings, this factor was referred to as the "social detachment" dimension. On the second factor items were loaded covering callous, "unemotional behaviour". Because these characteristics imply a profound denial of the emotional state normally found in human beings, this factor was referred to as the "emotional detachment" dimension.

All items loaded predominantly on their respective factors. However some items had also substantial loadings on the other factor, suggesting that these items are not unique. Yet, a confirmatory factor analysis subsequently done on the second independent split-half sample showed that the two factor model represented the data well. This confirms the finding of the exploratory factor analysis that the items of the rating scale cluster as a two-factor structural model covering a social and an emotional dimension.

An analysis of the reliability revealed that the parental ratings are also sufficiently reliable. They meet the standards set out for the reliability of assessment instruments intend for diagnostic purposes.

The findings thus demonstrate that a two-dimensional construct covering on the one hand egocentric and on the other hand unemotional characteristics emerges when parents rate the presence of the unique psychopathy related characteristics in children. This matches with the findings of other studies among children and adolescents in both community and offender samples that, along with a dimension that covers impulsive and law-breaking social behaviours, also reported dimensions that cover narcissistic and callous-unemotional behavioural characteristics (Frick et al., 2000; Lee et al., 2003). Dimensions that reflect narcissistic and callous-unemotional characteristics were also repeatedly found in studies exploring psychopathic traits among adults (cf. Hare, 1998; Cooke and Michie, 2001; Cooke et al., 2004). This suggests that traits of social and emotional detachment not only are witnessed in childhood and adolescence, but also in adulthood. Further studies, however, have to be done to find out whether there is a linkage between social and

emotional detachment in childhood and comparable manifestations in adulthood.

The results of this study show further that the parental assessments are equally reliable across gender and age groups. Even in the lower age group the parental reports showed sufficient reliability. These preliminary findings suggest that parental ratings can possibly be used to reliably screen the characteristics of social and emotional detachment in children, although further exploration of the validity of the two factorial construct is still needed.

The parents further reported higher levels of social and emotional detachment for the male children, as well as for the older children. This is in line with the findings of other community sample studies that have reported increasing levels of narcissistic and callous-unemotional traits with grade, and male children displaying more of these traits than female children (Frick et al., 2000).

Association with disruptive behavioural disorders

Product moment correlations revealed only low associations between the dimensions of social and emotional detachment and the symptom levels of ADHD. Beta-coefficients were calculated using a regression analysis. This analysis revealed that the standardized beta-coefficients were also low, with product moment correlations between ADHD, ODD and CD largely disappearing. These findings suggest that social and emotional detachment is barely related to ADHD, but depicts a phenomenon that often co-occurs with ODD and CD.

The product-moment correlations revealed further that the two dimensions indeed substantially correlated with the symptom levels of ODD and CD. The beta-coefficients revealed, however, that in particular the interaction of social and emotional detachment correlated with both the ODD and the CD measures. Correlations were independent of age and gender. The earlier findings suggest that the dimensions of social and emotional detachment interacting is, indeed, associated with increased levels of symptoms of ODD and CD.

The findings support those of recent studies suggesting that narcissistic and callous, unemotional characteristics in children are more strongly associated with non-compliant, overt and covert anti-social behaviours in children than with ADHD (Loeber et al., 2002; Piatigorski and Hinshaw, 2004).

The finding that in particular many children with ODD and CD symptoms also displayed characteristics of egocentric and unemotional behaviour suggests the existence of a subtype of ODD/CD children that possibly refers to the classical notion of psychopathy.

Limitations of the study

The findings of this study have several limitations. In the first place, the study was based on the ratings of parents. Future research is needed to show whether ratings made by other persons who know the child well, like teachers, caretakers and mentors, will produce results that are equally reliable and valid. Concerning this, research among teachers is in particular important, as research based on other rating scales, which assess behavioural and emotional problems in children and adolescents, including psychopathic characteristics, has reported that the ratings of parents and teachers often diverge substantially (Frick et al., 2000; Meyers and Winters, 2002).

Second, the inter-rater reliabilities and the test-retest reliabilities were only assessed in smaller sub-samples of the main sample. They comprised parents who had voluntarily consented to participate in these studies. Unknown is whether this has led to selection bias. Also the inter-rater reliability was not assessed in families with one parent. Further research with regard to the inter-rater and test-retest reliabilities of the dimensions of such specific sub-samples is needed.

Third, it is important to acknowledge that the scores on the DSM-IV referenced ODD and CD rating scales are not equivalent to the DSM-IV psychiatric diagnoses of these childhood disorders because they are not based on the extended set of DSM-IV diagnostic criteria (APA, 2001). The rating scales only indicate the presence of core symptoms associated with ODD and CD diagnoses. For a full diagnosis, additional criteria must be met (i.e. age of onset, duration of symptoms, presence in various life areas, impairment of social and academic performance, and exclusion of other disorders). Nevertheless, the rating scales provide a sound estimation, as the presence of core symptoms is a precondition in any diagnosis of childhood disorders.

Fourth, the validity of the two-dimensional construct of social and emotional detachment in children and adolescents was established in a community sample. The use of samples comprising young offenders and incarcerated juveniles should reveal whether the

validity of the two-dimensional construct also pertains to clinical populations.

Fifth, the associations between the psychopathic syndromes and the disruptive behavioural disorders were only assessed in a cross-sectional sample. A longitudinal study is needed to determine whether the characteristics are stable over time and whether they also predict future disruptive behavioural problems.

Finally, the purpose of the study was to test an easy-to-use rating scale that clinicians can use to screen whether children with disruptive behavioural problems are also "at risk" to display the characteristics of social and emotional detachment. Knowledge in this respect can be relevant for diagnosis and treatment. The purpose of this study was clearly not to develop a screening device to identify children "at risk" for adult psychopathy. Given the developmental nature of childhood and adolescence it is questionable whether screening devices pursuing this goal will ever be satisfactorily accurate (Seagrave and Grisso, 2002).

Summarizing, our preliminary findings show that parental reports of the symptoms of ODD and CD in children are often accompanied by parental reports of egocentric and callous-unemotional traits in children. It is important that clinicians in their diagnosis take account of this phenomenon of "social and emotional detachment", so that the concerned children will receive appropriate treatment.

For this to happen it is necessary that the validity of the two-dimensional notion of social and emotional detachment in children found in this study is replicated in future studies comprising also clinical populations and using also observers other than parents. Moreover, a study of the predictive validity is needed using other, well-established measures of psychopathy as a criterion, to ground firmly that the notion of social and emotional detachment proposed in this study indeed refers to the notion of psychopathy.

Future studies must also address whether social and emotional detachment in children predicts severe future behavioural problems. In future studies the question of what type of treatment efficiently can combat social and emotional detachment in children with and without ODD and CD must also be addressed.

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