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## Self-reported psychopathic traits and socio-emotional function in 9-12 year old children from the community

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# 4

## Development and tests of short versions of the Youth Psychopathic traits Inventory and the Youth Psychopathic traits Inventory-Child Version

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## **4. Development and tests of short versions of the Youth Psychopathic traits Inventory and the Youth Psychopathic traits Inventory-Child Version**

### **Abstract**

The adolescent Youth Psychopathic traits Inventory (YPI) and its child version (YPI-CV) are sound but lengthy instruments for measuring psychopathic traits in youths. The aim of the current study was to develop psychometrically strong short versions of these instruments. Samples used for item reduction were community samples of adolescents ( $n=2105$ , age 16–19, 49% boys) and children ( $n=360$ , age 9–12, 52% boys). Step-wise parallel reduction using Principal Components Analyses and content related arguments resulted in two highly similar short instruments (18 items). In both versions, near identical and theoretically comprehensible three factor structures were demonstrated, which were cross-validated in independent samples (CFI=.97 and .97; RMSEA=.044 and .038, respectively). Results were similar for boys and girls. The short instruments were reliable (Cronbach's alphas of .85 and .83) and covered all core characteristics of the psychopathic personality construct. The short versions showed high convergence with the original long instruments ( $r=.95$  and .93, respectively) and similar correlations to external criterion measures of conduct problems. Therefore, the abbreviated versions are practical and valid alternatives for the original YPIs when administration time is limited.

### **Introduction**

Psychopathy is a constellation of personality traits such as callousness, manipulativeness, egocentricity, impulsivity and a need for stimulation (e.g., Cleckley, 1988; Hare, 2003) that can be classified into three dimensions: affective callous-unemotional traits, interpersonal grandiose-manipulative traits and impulsive and irresponsible behaviors (Cooke and Michie, 2001). The psychopathic constellation has widely been recognized as an important predictor of violence and criminality among adults (Hare, 2003; Douglas, Vincent, & Edens, 2006). Recently, researchers have widened their focus to the study of psychopathic traits in adolescents and children. Investigating psychopathic traits in these age groups is of clinical interest because it can help us gain insight into the different pathways towards severe antisocial behavior and can increase our understanding of the etiology of this socially devastating adult personality disorder. To date, studies of psychopathic traits in youth have yielded striking similarities to those in adults in terms of stability, relations to conduct problems and aggression and emotional and cognitive functioning (for reviews see e.g., Lynam & Gudonis, 2005; Kotler & McMahon, 2005).

Several instruments, using different informants, have been developed for measuring psychopathic traits in youth. Some measures rely on interviews and file information such as the youth version of the Psychopathy Checklist (PCL-YV; Forth, Kosson, & Hare, 2003). When no file information is available, parent and teacher rating measures, such as the Antisocial Process Screening Device (APSD, Frick & Hare, 2001) can be used. Additionally, self-report measures, such as the APSD-self-report (Caputo, Frick, & Brodsky, 1999) and the Youth Psychopathic traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002) are available. Self-report measures provide an important perspective on youth's psychopathic traits because youth, unlike parents or teachers, are in the unique position to report on behaviors across a range of situations, including the home, the classroom and among peers. Of the self-report instruments now available for measuring psychopathic traits in youths, the Youth Psychopathic traits Inventory (YPI) has been considered particularly favorable by several reviewers (e.g. Kotler & McMahon, 2005; Vaughn & Howard, 2005) and was found to be a superior measure of psychopathic traits to the self-report version of the APSD (Poythress, Dembo, Wareham, & Greenbaum, 2006). This 50-item research instrument has several strengths. First, on the conceptual level, while focusing on the core features of psychopathy, the YPI was specifically developed to avoid a socially desirable response bias by describing feelings and opinions as desirable competences, rather than deficiencies or socially undesirable behaviors. Second, the YPI comprises ten reliable subscales which combine into a three factor structure that is consistent with recent theoretical models (e.g. Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006). The internal consistencies of these three YPI dimensions and the total score have generally been good to excellent, with Cronbach's alpha's for total score ranging from .87 to .92, the callous-unemotional dimension from .74 to .81, grandiose-manipulative from .82 to .90 and impulsive-irresponsible from .68 to .85.) (Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006; Skeem & Cauffman, 2003; Andershed, Hodgins, & Tengström, 2007). Fourth, the instrument seems to work equally well in boys and girls: the factor structures as well as the relations to external criteria are similar in both groups (Andershed et al., 2002). Fifth, even though it was developed and validated as a research instrument for community samples, its basic validity has also been demonstrated in forensic and other institutional settings. For example, the YPI is significantly correlated with antisocial behavior (violent and non-violent) both in community (correlations ranging from .33 to .45) and forensic settings ( $r=.21$  to .66) (Andershed et al., 2002; Dolan & Rennie, 2007; Larsson, Tuvblad, Rijdsdijk, Andershed, Grann, & Lichtenstein, 2007; Poythress et al., 2006; Skeem & Cauffman, 2003). Additionally, the instrument has been shown to be able to identify a severe and aggressive subgroup of antisocial adolescents in both types of samples (Andershed et al., 2002; Dolan & Rennie, 2006). The validity of the YPI has further been demonstrated by significant correlations with the

Psychopathy Checklist: Youth Version ( $r=.29$  to  $.48$ ; Andershed et al., 2007; Dolan & Rennie, 2006; Skeem & Cauffman, 2003). Finally, the YPI instrument is applicable to a wide age range as near identical versions for adolescents (YPI; Andershed et al., 2002) and children (YPI – Child Version; Van Baardewijk et al., 2008) are available. This child version is an age-appropriate adaptation of the original YPI. Its validation study reported a three factor structure similar to the original YPI with good to excellent internal consistencies. Like the original adolescent YPI, the child version works equally well for boys and girls.

While the YPI measure thus shows a number of excellent properties, the instrument may be too elaborate for most purposes. The YPI allows for research on symptom level by providing reliable 5-item subscales for each of the ten core psychopathy symptoms, but most researchers to date have used only the total score and three dimension scores (e.g. Forsman, Lichtenstein, Andershed, & Larsson, 2008; Kansi, 2003). Therefore, for most studies, the full fifty items and lengthy twenty minutes administration time may not be necessary. For that reason, the purpose of this study is to come up with psychometrically strong short versions of the adolescent and child YPI instruments that can be of use for large multivariate data collections in which administration time is valuable and limited. We do this through a step-wise selection process using a series of exploratory factor analyses and content related arguments. The final models are then cross-validated in independent samples using confirmatory factor analyses and external validity is tested and compared with the original YPI measures.

## Materials and Methods

### *Samples and procedure*

Adolescent YPI data were obtained in a school-based community sample of a total of 4050 adolescents (age 16–19, 49% boys) from a medium-sized county in Sweden. The students were asked to complete their self-report questionnaires in their classroom during a one-hour session under the supervision of a specially trained research assistant. The research assistant informed the students about the purpose of the study and assured confidentiality. Consent rate was 95%.

YPI – Child Version data were derived from two independent school-based samples of 9 to 12 year old Dutch children. Sample 1 consisted of  $n=360$  children (52% boys) with a mean age of 10.9 ( $SD=0.9$ ). Sample 2 consisted of  $n=430$  children (54% boys) with a mean age of 11.4 ( $SD=0.8$ ). Parental consent rate was 95% and 96%, respectively. Children completed their self-report questionnaires, which were part of a larger study, in two one and a half hour sessions during regular school time over a period of one week, supervised by a trained research assistant.

Because large adolescent and child samples were available, a cross-validation procedure was carried out in order to confirm results of the shortened scales in a second independent sample. The adolescent sample was randomly split into two

equally sized samples, to be named adolescent samples 1 ( $n=2105$ , 49% boys) and 2 ( $n=2159$ , 49% boy), respectively in the following text. Of the YPI – Child Version datasets, child sample 1 was used to develop the short version, and child sample 2 was used to confirm these results.

### *Measures*

*Youth Psychopathic traits Inventory* – The YPI is a 50-item adolescent self-report questionnaire designed to measure the core traits of the psychopathic personality (Andershed et al., 2002). The YPI measures each psychopathic trait with five items making up ten different subscales (Andershed, et al., 2002). In line with Cooke & Michie's (2001) conceptualization of psychopathy, these subscales manifest in a three factor structure consisting of (1) a Grandiose-Manipulative dimension (including the subscales dishonest charm, grandiosity, lying and manipulation), (2) a Callous-Unemotional dimension (including the subscales callousness, unemotionality and remorselessness), and (3) an Impulsive-Irresponsible dimension (including the subscales impulsiveness, thrill-seeking and irresponsibility). Each item in the YPI is scored on a four-point Likert scale ranging from *Does not apply at all* to *Applies very well*. The YPI is available in multiple languages, including English, Swedish, Dutch, French, German, Croatian, Icelandic, Korean and Russian.

*Youth Psychopathic traits Inventory – Child Version* – The Youth Psychopathic trait Inventory-Child Version (YPI-CV; Van Baardewijk et al., 2008) is an age-appropriate adaptation of the original YPI that matches the cognitive, emotional and verbal development and social realities of 9–12 year olds. The composition of the YPI-CV is identical to the adolescent YPI, comprising 50 items that combine into 10 subscales. The validation study reported a three factor structure similar to the original YPI with good to excellent internal consistencies (Cronbach's alpha's of .80–.89 for the dimensions and .92 for the total score). The YPI-CV was shown to be stable over 2-month and 6-month periods (total score ICCs of .77 and .76, respectively). The YPI-CV is currently available in English and Dutch.

### **Results**

The purpose of shortening the YPI instruments was to create two brief, psychometrically strong and closely related self-report measures for assessing psychopathic traits in youth. Item-reduction was achieved in samples 1 through a step-wise selection process using principal components analysis (using promax rotation with a theory driven forced three factor solution) on both questionnaires. In addition, content related arguments were used for the selection of items to be retained. In step 1, items with loadings below .30 or loadings higher than .30 on more than one factor were dropped (Stevens, 1992). From the YPI, 13 items were dropped in this step and 17

items from the YPI-CV. In step 2, the remaining items were factor analyzed again and item correspondence between the two questionnaires was assessed. Items that were present in both questionnaires were retained. An additional 9 and 5 items were dropped in this step from the YPI and YPI-CV, respectively. In step 3, remaining items were again factor analyzed in their individual samples. Further reduction of the number of items was attempted using empirical as well as content related arguments. Empirical arguments were: strength of loading, distinctiveness (a distinct item loads strongly in one factor and close to zero in the two other factors), and reported problems with specific items in previous empirical studies. Content related criteria were: representiveness, relevance and complexity, with agreement reached between the first and second authors. In this step, 10 items were dropped from both questionnaires. In the fourth and final step, the remaining items were factor analyzed again.

This four step item reduction procedure resulted in nearly identical and distinct three factor solutions for both the adolescent and child version of the YPI. The resulting short instruments consisted of 18 items, 6 items for each of the three factors. Of the 18 items, 17 items had similar content -yet age appropriate wording- in both the YPI-short (YPI-S) and the YPI-short Child Version (YPI-SCV), while only one item (5) differed between the two short versions. Table 1 displays the items of the short version and their loading on the three factors. As can be seen, all central psychopathy characteristics included in the original YPI and YPI-CV are also conceptually present in the abbreviated versions. The Grandiose-Manipulative factor comprises the concepts of dishonest charm, manipulation/lying and grandiosity. The Callous-Unemotional factor comprises the concepts of callousness, unemotionality and remorselessness and the Impulsive-Irresponsible factor features impulsivity, irresponsible behavior and thrill-seeking/proneness to boredom.

### *Testing the short versions*

To confirm the findings from the principal components analyses in samples 1, confirmatory factor analyses were used to examine the fit of the short versions factor models in samples 2. The comparative fit-index (CFI) and the Root Mean Square Error of Approximation (RMSEA) were calculated with EQS as the computational program. Table 2 shows the model fit indices for both questionnaires in their respective cross-validation samples (samples 2). A CFI of .90 and higher, and an RMSEA of .08 and lower are generally considered to indicate an adequate fit, while CFI of .95 and over and RMSEA of .05 and lower are considered a good fit (Hu & Bentler, 1999). The results indicated an excellent fit of the YPI short versions on the sample 2 data showing that the YPI short versions models found in samples 1 were valid. Additionally, fit indices for boys and girls separately and the cross-gender fit were calculated in the full samples. Table 2 shows the results for boys and girls to be quite similar for both questionnaires, cross-gender fit indices were adequate to good.

*Table 1.* Factor structure of short versions of the YPI ( $n=2105$ ) and YPI-CV ( $n=360$ ) in samples 1.

YPI – Adolescent version	Factors			YPI – Child Version	Factors		
	1	2	3		1	2	3
20. It's easy for me to manipulate people.	<b>.77</b>	.06	.01	It's easy for me to make other people do things that suit me well.	–.02	–.06	<b>.75</b>
14. I have the ability to con people by using my charm and smile.	<b>.82</b>	–.15	.06	I can fool others by acting extra nice and sweet.	.11	–.03	<b>.65</b>
15. I am good at getting people to believe me when I make something up.	<b>.75</b>	–.10	.01	I am good at getting people to believe in what make up.	.10	–.08	<b>.65</b>
19. I have talents that go far beyond other people's.	<b>.66</b>	.14	–.14	I am much more talented than other people.	.01	–.17	<b>.64</b>
38. When I need to, I use my smile and my charm to use others.	<b>.58</b>	.10	.10	When I need to I will act extra nice and sweet so others will do exactly what I want	.21	.02	<b>.54</b>
41. I am destined to become a well-known, important and influential person.	<b>.54</b>	.08	–.10	I will become a well-known and important person. I know that already.	.12	.11	<b>.37</b>
44. To feel guilty and remorseful about things you have done that have hurt other people is a sign of weakness.	–.04	<b>.71</b>	.02	It's weak to feel guilty when you have hurt others.	<b>.72</b>	–.15	.11
12. I think that crying is a sign of weakness. even if no one sees you.	–.01	<b>.70</b>	.03	I think that crying is weak. even if no one sees you.	<b>.60</b>	–.08	.15
39. I don't understand how people can be touched enough to cry by watching things on TV or movie.	–.03	<b>.68</b>	–.10	I don't understand how people can cry from watching TV or a movie.	<b>.59</b>	.09	–.06
17. When other people have problems. it is often their own fault. therefore. one should not help them.	.07	<b>.62</b>	.05	When other people have problems. it is usually their own fault and that's why you should not help them.	<b>.35</b>	.10	.03
25. To be nervous and worried is a sign of weakness.	.00	<b>.59</b>	.11	It's weak to feel nervous or worried.	<b>.76</b>	.06	–.13
45. I don't let my feelings affect me as much as other people's feelings seem to affect them.	.16	<b>.58</b>	–.04	Feelings are less important to me than they are for others.	<b>.65</b>	.06	–.04



Table 1 (continued)

YPI – Adolescent version	Factors				YPI – Child Version	Factors			
	1	2	3			1	2	3	
32 It often happens that I do things without thinking ahead.	–.10	–.01	<b>.85</b>		<i>Identical</i>	.06	<b>.80</b>	–.04	
18 It often happens that I talk first and think later.	–.12	.09	<b>.79</b>		<i>Identical</i>	–.11	<b>.78</b>	.02	
9. I consider myself as a pretty impulsive person.	.16	–.17	<b>.58</b>		I think of myself as someone who does things suddenly, without thinking.	–.14	<b>.75</b>	.07	
29 I get bored quickly by doing the same thing over and over.	.06	.00	<b>.54</b>		<i>Identical</i>	.19	<b>.37</b>	.02	
34. It has happened several times that I've borrowed something and then lost it.	.00	.17	<b>.48</b>		<i>Identical</i>	.11	<b>.54</b>	–.06	
5. I have probably skipped school or work more than most other people.	.16	.02	<b>.32</b>		I find rules to be nothing but a nuisance	.26	<b>.42</b>	.04	
Total						Total			
Percentage explained by the factors	26.49	10.44	8.31	45.24	Percentage explained by the factors	23.11	11.09	8.3	42.50

Note: Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.

Table 2 Confirmatory factor analyses fit indices (CFI and RMSEA) for the YPI-S and YPI-SCV in samples 2

	N valid	CFI	RMSEA	90% confidence interval RMSEA
<i>YPI-S</i>				
Sample 2	1812	.97	.044	.040 – .047
Boys (full sample)	1749	.92	.050	.046 – .053
Girls (full sample)	1867	.93	.044	.040 – .047
Two sample analyses (boy/girl)	3616	.92	.044	.042 – .047
<i>YPI-SCV</i>				
Sample 2	348	.97	.038	.026 – .048
Boys (full sample)	367	.94	.041	.030 – .051
Girls (full sample)	324	.90	.055	.045 – .065
Two sample analyses (boy/girl)	691	.90	.046	.039 – .053

Note: CFI = comparative fit-index. RMSEA = Root Mean Square Error of Approximation

To further test the quality of the abbreviated instruments reliability indices and correlations between the original measures and their abbreviated versions were calculated. Cronbach's alpha's of total scores and factors scores of both the short and original long versions are displayed in Table 3.

*Table 3.* Cronbach's alphas of the original and short YPIs, correlations between the original and short YPIs and correlations with problem behavior in samples 1 and 2

YPI-S	Sample 1				Sample 2			
	CU	GM	II	T	CU	GM	II	T
Cronbach's alphas								
(original version to the left and SV to the right)	.82/.75	.91/.79	.83/.68	.93/.85	.81/.74	.91/.81	.82.68	.93/.83
Correlations with original								
YPI- factors and total score (all $p<.0001$ )	.88	.92	.86	.95	.87	.89	.87	.93
Correlations with conduct problems (original version to the left and SV to the right) (all $p<.001$ )	.44/.38 <sup>3</sup>	.44/.38 <sup>3</sup>	.53/.42 <sup>1</sup>	.54/.50 <sup>4</sup>	.41/.35 <sup>1</sup>	.42/.35 <sup>2</sup>	.48/.37 <sup>1</sup>	.51/.46 <sup>3</sup>
YPI-SCV								
Cronbach's alphas	.83/.69	.86/.71	.78/.70	.91/.80	.80/.69	.89/.77	.84/.74	.92/.81
Correlations with original								
YPI- factors and total score (all $p<.0001$ )	.90	.88	.84	.93	.88	.90	.85	.94
Correlations with conduct problems (original version to the left and SV to the right) (all $p<.001$ )	.45/.38 <sup>4</sup>	.28/.24 <sup>4</sup>	.36/.29 <sup>4</sup>	.45/.41 <sup>4</sup>	-	-	-	-

Note: CU= Callous-Unemotional, GM=Grandiose-Manipulative, II=Impulsive-Irresponsible, T=Total score  
 1 = difference in correlations between long version and short version to criterion variable is significant at  $p<.00$  level (Fisher Z-transformation used); 2= $p<.05$ ; 3= $p<.01$ ; 4=n.s.

Reduced reliability is a likely result consequence of reduced test length. However, as shown in Table 3, despite the removal of nearly two-thirds of the items, the reliability coefficients of the short versions could generally be considered satisfactory. Correlations between the abbreviated questionnaires and their original versions in both samples are also displayed in Table 3. High correspondence was found between the original measures and their shortened versions in both samples.

The short versions were then compared with the original versions in terms of their relation to conduct problems. For the YPI-CV, conduct problem behavior measures were only available for one of the samples (sample 1). The self-report SDQ conduct problems subscale (Goodman, 1997) was used as a criterion measure in this child sample. In the adolescent samples, 16 self-report items about concrete conduct problems (aggressive and non-aggressive) during the last 12 months were used (Andershed et al., 2002). Table 3 displays the correlations of both the original and short versions to these measures of conduct problems and these showed quite similar for the original and shortened measures. Differences for the child version were not significant, however, due to the large sample size (and resulting power) most differences did reach significance in the adolescent sample. With respect to the

cross-validation, high similarity was found for all results between samples 1 and 2 in both the adolescent and child groups.

## Discussion

The aim of this study was to create brief, psychometrically strong, parallel versions of two sound self-report instruments for investigating psychopathic traits in youth: the YPI and YPI-CV. Step-wise parallel reduction of the items of both questionnaires resulted in two highly similar instruments (18 items), which we named the YPI-Short Version (YPI-S; the adolescent version) and the YPI-Short Child Version (YPI-SCV; the child version). In both versions, identical and theoretically comprehensible three factor structures were demonstrated, that were confirmed in independent samples. These factor structures were seen in both boys and girls. Despite the deletion of two-thirds of the items, the abbreviated instruments were reliable and covered all core characteristics of the psychopathic personality construct. The short versions showed high convergence with the original long instruments and similar correlations to external criterion measures were found for both the long and short versions. These findings cross-validated from one sample to another. The fact that two very similar short instruments with good psychometric properties could be construed despite differences in item-wording as well as age and language of the reference samples, underscores the validity of the YPI instruments, and lends further support to the notion that the manifestation of psychopathic traits is similar across age groups (Lynam & Gudonis, 2005).

Some limitations of the current study will need to be addressed in future research. First, all data in this paper were from an administration of the long form of the YPIs. This may have resulted in inflated correlations because all the items and answers on the abbreviated versions were shared with the original ones. Therefore, it is important that future studies use administrations of the long and short versions in the same sample to test for the true overlap between both versions and relations to external criteria. Second, external validation of the short instruments at present is limited and should be conducted in depth. Future studies could further test the validity of the YPI short versions by relating them to offending, emotional reactivity and other criteria relevant to the psychopathy concept. Second, the current short versions were developed using community samples only and await further testing in institutional, high-risk and forensic samples. Specifically to these populations, while the YPI was constructed specifically to minimize the influence of response bias by assessing psychopathic traits indirectly and describing them as strengths and abilities, it should be noted that its effectiveness in this regard has not been empirically tested. This should be a priority before the YPI instruments are used in settings where anonymity of the respondent cannot be guaranteed.

Research on the development of psychopathy is of pivotal importance. Having a short, yet reliable and valid, self-report instrument available for a broad age range could enable more researchers to accumulate much needed knowledge about this important construct in youth.

