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**Development and validation of the Child Post-Traumatic Cognitions Inventory (CPTCI)**

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Development and validation of the  
Child Post-Traumatic Cognitions Inventory (CPTCI)

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## CPTCI

## Abstract

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Background: Negative trauma-related cognitions have been found to be a significant factor in the maintenance of post-traumatic stress disorder (PTSD) in adults. Initial studies of such appraisals in trauma-exposed children and adolescents suggest that this is an important line of research in youth, yet empirically validated measures for use with younger populations are lacking. A measure of negative trauma-related cognitions for use with children and adolescents, the Child Post-Traumatic Cognitions Inventory (CPTCI) is presented. The measure was devised as an age-appropriate version of the adult Post-Traumatic Cognitions Inventory (Foa, E. B., Ehlers, A., Clark, D. M., Tolin, D. F., & Orsillo, S. M. (1999). *The Posttraumatic Cognitions Inventory (PTCI): Development and validation. Psychological Assessment, 11*, 303-314.). Methods: The CPTCI was developed and validated within a large (n = 570) sample, comprising community and trauma-exposed samples of children and adolescents aged 6-18 years. Results: Principal components analysis suggested a two-component structure. These components were labelled ‘permanent and disturbing change’ and ‘fragile person in a scary world’, and were each found to possess good internal consistency, test-retest reliability, convergent validity, and discriminative validity. The reliability and validity of these sub-scales was present regardless of whether the measure was completed in the acute phase or several months after a trauma. Scores on these sub-scales did not vary with age. Conclusions: The CPTCI is a reliable and valid measure that is not specific to the type of trauma exposure, and shows considerable promise as a research and clinical tool. The structure of this measure suggests that appraisals concerning the more abstract consequences of a trauma, as well as physical threat and vulnerability, are pertinent factors in trauma-exposed children and adolescents, even prepubescent children.

Key words: Post-traumatic stress disorder, children, adolescents, appraisals, cognition.

## CPTCI

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3 Central to the theoretical issues surrounding post-traumatic stress disorder (PTSD)  
4 is the question of why some individuals experience only transient distress following a  
5 trauma, while others experience chronic and disabling symptoms (Dalgleish, 2004).  
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10 Cognitive models of PTSD in adults (Brewin et al., 1996; Dalgleish, 2004; Ehlers & Clark,  
11 2000; Foa & Rothbaum, 1998) have suggested that dysfunctional appraisals, relating to the  
12 trauma, the world, the self, and PTSD symptoms themselves, play a significant role in  
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19 maintaining the disorder.

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21 These models suggest several pathways by which negative trauma-related  
22 appraisals might maintain PTSD symptoms. In particular they argue that such appraisals  
23 can contribute to creating a sense of “current threat” (Ehlers & Clark, 2000) and encourage  
24 the use of maladaptive coping strategies. Foa and Rothbaum (1998) suggested two main  
25 types of appraisal that mediate the development of PTSD: the idea that the world is a  
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33 completely dangerous place, and the view of oneself as incompetent.

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35 The Post-Traumatic Cognitions Inventory for adults (PTCI; Foa et al., 1999)  
36 represents an attempt to develop a comprehensive measure of trauma appraisals considered  
37 by recent cognitive models (Dalgleish, 2004; Ehlers & Clark, 2000; Foa & Rothbaum,  
38 1998) to maintain PTSD symptoms . The measure was developed in a large sample and  
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57 found to possess a meaningful three-component structure: negative beliefs about self (e.g.  
58 “I can’t deal with even the slightest upset”, “I have permanently changed for the worse”),  
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139 The PTCI has been further validated in a sample of motor vehicle accident (MVA)  
140 survivors (Beck et al., 2004), has been shown to correlate both with PTSD in a sample of

## CPTCI

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3 Emergency Room staff (Laposa & Alden, 2003) and with ASD in a sample of motor  
4 vehicle accident and assault survivors (Nixon & Bryant, 2005), and predicted PTSD in a  
5 sample of firefighters (Bryant & Guthrie, 2005; Bryant & Guthrie, 2007). In addition,  
6 changes in PTCI scores are associated with improvement of PTSD symptoms following  
7 either prolonged exposure therapy or prolonged exposure plus cognitive restructuring (Foa  
8 & Rauch, 2004).  
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There has been far less consideration of the role of trauma-related appraisals and  
PTSD in children and adolescents (Meiser-Stedman, 2002). Mannarino and colleagues  
(1994) devised the Children's Attributions and Perceptions Scale (CAPS), a semi-  
structured interview, as a measure of different attributions pertaining to sexual abuse (e.g.  
feeling different from peers, blaming themselves for the abuse). The measure was found to  
have acceptable internal reliability and test-retest reliability. Sexually abused girls scored  
significantly higher on each of the CAPS sub-scales, relative to a non-abused control  
group, while higher scores on these measures were significantly correlated with depression  
and anxiety measures. In a further study comparing the CAPS to measures of more general  
(i.e. not abuse-specific) negative attributions, the CAPS was most able to distinguish  
between sexually abused girls and controls (Mannarino & Cohen, 1996). Similarly,  
Spaccarelli (1995) found that negative abuse-specific appraisals (measured using the  
Negative Appraisals of Sexual Abuse Scale), were related to anxiety, depression and post-  
traumatic stress.

A small but growing number of studies have examined the role of negative trauma-  
related appraisals in the development of PTSD in children exposed to non-sexual-abuse,  
single-event trauma. Ehlers, Mayou, and Bryant (2003) used a single item ("Do you ever  
think that something is wrong with you because you cannot forget the accident, for  
example, do you ever feel you are going mad?") in MVA survivors, and found that this

## CPTCI

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3 predicted severity of post-traumatic stress symptoms at later assessments. Stallard and  
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5 Smith (2007), also found that single items indexing alienation from other people, negative  
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7 interpretation of PTSD symptoms, permanent change, and heightened future danger, were  
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9 associated with PTSD symptoms in a sample of MVA survivors assessed 8 months post-  
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11 trauma. While these studies point to the potential application of a cognitive model of PTSD  
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13 to children and adolescents, they also underline the importance of having reliable and valid  
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15 measures of post-traumatic appraisals for use with this age group.  
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20 The aim of the present study was to develop a measure for assessing negative post-  
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22 traumatic appraisals for children and adolescents – the Children’s Posttraumatic Cognitions  
23  
24 Inventory (CPTCI). This multi-item measure was derived from the adult PTCI (Foa et al.,  
25  
26 1999), and its properties were investigated in children exposed to single-event trauma, as  
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28 opposed to more chronic trauma such as sexual abuse. It was intended that the CPTCI  
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30 would both inform our understanding of a potentially significant mechanism in the  
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32 development of PTSD in children and adolescents, and also provide a clinically useful tool  
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34 for assessment and prediction.  
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## 41 Method

### 42 *Participants*

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45 In total, 570 children and adolescents aged 6-17 years completed the CPTCI while  
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47 participating in studies of post-traumatic stress in youth. The first sample (S1) comprised  
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49 223 children and adolescents (aged 11-18, mean = 14.6 years, SD = 2.3, 131 [58.7%]  
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51 female), participating in a cross-sectional community study of post-traumatic stress in UK  
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53 secondary school pupils. Participants completed the CPTCI in relation to the most  
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55 frightening event they had experienced in the previous two months. The second sample  
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57 (S2) comprised 138 children and adolescents (aged 6-17, mean = 12.8 years, SD = 2.7, 58  
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## CPTCI

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3 [42.0%] female), assessed at least 6-months post-trauma by researchers at the Maudsley  
4  
5 Hospital Child Traumatic Stress Clinic in London as part of ongoing research studies  
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7 and/or for treatment. These children and adolescents had been exposed to an assault or  
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9 MVA, or had witnessed such events. The third sample (S3) comprised 209 children and  
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11 adolescents (aged 6-17, mean = 11.4 years, SD = 2.9, 79 [37.8%] female), participating in  
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13 prospective studies of children and adolescents admitted to hospitals in Sydney and  
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15 Adelaide following injury (e.g. MVAs, falls). These children and adolescents were  
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17 assessed within the first month post-trauma.  
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*Measures**The Post-Traumatic Cognitions Inventory – child version (CPTCI)*

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27 The items for the CPTCI were drawn primarily from the 33-item adult PTCI (Foa et  
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29 al., 1999). Each item was adapted to be appropriate for children and adolescents and  
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31 included in the initial item pool for the CPTCI. Several additional items deemed suitable  
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33 for children that would address the key concepts that make up the adult PTCI were also  
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35 included in the initial pool of 41 items. The additional items were mainly inspired by other  
36  
37 research that has been aimed at testing cognitive models of PTSD in adults (Steil & Ehlers,  
38  
39 2000). These items related to negative appraisals of traumatic stress symptoms (e.g. “My  
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41 reactions since the frightening event mean something is seriously wrong with me”). One  
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43 item (“I feel like a robot sometimes”) was not translated from the PTCI to the CPTCI as  
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45 an age-appropriate version of this item could be devised.  
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51 The preliminary measure comprised 41 items. Possible responses were “Don’t  
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53 agree at all”, “Don’t agree a bit”, “Agree a bit”, or “Agree a lot”.  
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*Revised Impact of Event Scale, child version*

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58 Participants in S1 and S2 completed the Revised Impact of Event, child version  
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60 (RIES-C; Dyregrov & Yule, 1995), a self-report measure of post-traumatic stress

## CPTCI

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3 symptoms. The RIES-C sub-scales and total score have satisfactory to good internal  
4 reliability (Smith et al., 2003). The measure has good convergent (Giannopoulou et al.,  
5  
6 2006) and criterion (Perrin et al., 2005) validity.  
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*Child Post-Traumatic Stress Scale*

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12 The Child Post-Traumatic Stress Scale (CPSS; Foa et al., 2001) was completed by  
13 participants in S2 and a sub-set of participants in S3. The CPSS is a self-report  
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15 questionnaire developed to assess the severity of PTSD symptoms in children. The  
16  
17 measure possesses good internal consistency (alpha = .89) and excellent test-retest  
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19 reliability (r = .84).  
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*Depression Self-Rating Scale*

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25  
26 The Depression Self-Rating Scale (DSRS; Birlleson, 1981) is an 18-item self-report  
27  
28 measure of childhood depression. The measure has excellent internal consistency (split-  
29  
30 half reliability coefficient = .86) and test-retest reliability (r = .80). The DSRS was  
31  
32 completed by a large sub-sample (N = 104; 75.4%) of participants in S2.  
33  
34

*Anxiety Disorder Interview Schedule, child and parent report version*

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36  
37  
38 Participants in S2 completed the PTSD schedule of the Anxiety Disorders  
39  
40 Interview Schedule, child and parent report version (ADIS-C/P; Silverman & Albano,  
41  
42 1996). The ADIS-C/P is a structured interview battery designed for the assessment of  
43  
44 anxiety disorders in children and adolescents. The ADIS-C/P benefits from the inclusion of  
45  
46 an appropriate measure of impairment and the use of the DSM-IV in devising the schedule.  
47  
48 It has been shown to possess excellent test-retest reliability (Silverman, Saavedra, & Pina,  
49  
50 2001).  
51  
52

*Child Acute Stress Reaction Questionnaire / Acute Stress Checklist for children*

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56 Participants in S3 completed a self-report questionnaire assessing whether they met  
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58 criteria for Acute Stress Disorder (ASD). ASD was introduced in the DSM-IV as a way of  
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## CPTCI

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3 encapsulating traumatic stress symptoms within the first month post-trauma, when PTSD  
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5 can not be diagnosed (Harvey & Bryant, 2002).  
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8 The relative immaturity of the literature concerning ASD in youth is such that  
9  
10 different measures of ASD were used at different sites contributing to S3. A diagnosis of  
11  
12 ASD was made using either the Child Acute Stress Questionnaire (CASQ; Winston et al.,  
13  
14 2002) or the Acute Stress Checklist for children (ASC-Kids; Kassam-Adams, 2006). The  
15  
16 CASQ is a 48-item self-report measure of acute post-traumatic stress, from which a  
17  
18 provisional diagnostic status can be derived. The CASQ total score has excellent internal  
19  
20 consistency (Cronbach's  $\alpha = .94$ ) and good test-retest reliability ( $r = .79$ ; Winston et al.,  
21  
22 2002). The ASC-Kids is a refined 29-item version of the CASQ. As with the CASQ, the  
23  
24 ASC-Kids is a self-report measure of acute stress symptoms that reflects the DSM-IV  
25  
26 criteria for ASD, such that a symptom severity score and ASD diagnosis can be derived.  
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28 The measure has good internal reliability (Cronbach's  $\alpha = .86$ ) and test retest reliability ( $r$   
29  
30 =  $.76$ ; Kassam-Adams, 2006).  
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*Procedure*

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38 Informed consent was obtained from all participants at each site. In the case of  
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40 young children (i.e., those aged 6-7 years), parents or legal guardians gave informed  
41  
42 consent on behalf of their children, while the children themselves gave their assent to  
43  
44 participating. Participants completed the CPTCI and other measures in relation to the event  
45  
46 that precipitated their attendance at hospital (for prospective study participants in S2 and  
47  
48 S3), the trauma they had sought treatment for (for clinic-referred participants in S2), or the  
49  
50 most frightening experience from the previous two months (for school pupils in S1). In the  
51  
52 prospective study samples and the treatment-seeking sample, children also completed an  
53  
54 interview that assessed ASD (if they were assessed within four weeks of the trauma) or  
55  
56 PTSD (if they were assessed three or more months post-trauma). A selection of  
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## CPTCI

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3 participants from S2 (n=41) and S3 (n=112) completed the CPTCI on a second occasion,  
4  
5 thus permitting calculation of test-retest reliability statistics.  
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9

## Results

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12 The statistical procedures used to evaluate the properties of the CPTCI followed as  
13 far as possible those used by Foa et al. (Foa et al., 1999) to evaluate the adult PTCI. Where  
14 there was heterogeneity of variance, non-parametric rather than parametric analyses were  
15 conducted.  
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## Item reduction and component stability

21  
22 The 41 items of the preliminary CPTCI were submitted to a principal components  
23 analysis (PCA) using the data set obtained from S1. Examination of the scree plot implied  
24 a two-component solution. The analysis was repeated with a forced two-component  
25 solution, and subjected to varimax rotation. The first component accounted for 32.9% of  
26 variance, while the second component accounted for an additional 6.2% of variance. The  
27 25 items (see Table 1; S1 data) that were found to load more than .50 on a given  
28 component, and less than .40 on the other component were retained within the  
29 questionnaire and subjected to further analysis.  
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43 Inspection of the derived components revealed meaningful groupings: the first  
44 component, comprising 13 items, corresponded to a sense of 'permanent and disturbing  
45 change' (hereafter referred to as the CPTCI-PC) since the trauma (e.g. "My life has been  
46 destroyed by the frightening event", "My reactions since the frightening event mean I will  
47 never get over it"), while the second component, comprising 12 items, corresponded to a  
48 sense of being a 'fragile person in a scary world' (hereafter referred to as the CPTCI-SW;  
49 e.g. "I don't trust people", "I am a coward"). A third PCA was run with the 25 retained  
50 items, and again subjected to varimax rotation. In this solution, the first component  
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## CPTCI

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3 accounted for 37.3% of variance, while the second component accounted for an additional  
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5 9.2% of variance. The final 25-item measure is presented in Appendix A.  
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7

8 In order to further verify this solution, the forced two-component solution PCA was  
9  
10 performed again using the data from S2 and S3 (see Table 1). In S2 the overall two-  
11  
12 component solution explained 51.89% of variance in the model, while in S3 the two-  
13  
14 component solution explained 48.28% of variance. A small number of items completed by  
15  
16 participants in S3 showed substantial loadings for the component other than that to which  
17  
18 they had been allocated based on the data from S1. These were mainly items completed by  
19  
20 participants in S3 that contributed to the CPTCI-SW component. Despite this, it was  
21  
22 nevertheless decided to persist with a two-component solution given the stability of the  
23  
24 CPTCI-SW component in S1 and S2, and its good internal consistency within S3 (see  
25  
26 below).  
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31 The stability and replicability of the CPTCI components were evaluated by  
32  
33 calculating factor congruence coefficients (a measure of similarity between two  
34  
35 configurations) for each component, comparing the scores of the different samples. When  
36  
37 comparing S1 and S2, the factor congruence coefficients were .99 for Component 1  
38  
39 (CPTCI-PC), and .99 for Component 2 (CPTCI-SW), for S1 and S3 they were .99 and .90,  
40  
41 and for S2 and S3 they were .99 and .91, respectively. All these values are considered to be  
42  
43 in the borderline (.89-.92) or excellent (.98-1.00) range (MacCallum et al., 1999),  
44  
45 indicating that the factors replicated moderately well across samples.  
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#### Internal consistency

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51 The Cronbach's alpha coefficients for the CPTCI-PC component and for the  
52  
53 CPTCI-SW component were .91 and .87 in S1, .93 and .88 in S2, and .92 and .86 in S3,  
54  
55 suggesting that each component of the CPTCI possessed good internal reliability. When  
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57 participants from all three samples were re-ordered by age group (6-8 years, 9-11 years,  
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## CPTCI

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3 12-14 years, and 15-18 years), internal consistency was found to be good regardless of  
4  
5 which age group was considered (all Cronbach's alpha coefficients > .75).  
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## 8 Test-retest reliability

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10 Test-retest reliability was assessed using sub-samples from S2 and S3. A sub-  
11  
12 sample of 41 participants in S2 completed the CPTCI on two occasions, with an interval of  
13  
14 approximately three months between assessments. Both the CPTCI-PC ( $r = .78, p < .0001$ )  
15  
16 and the CPTCI-SW ( $r = .72, p < .0001$ ) sub-scales had good test-retest reliability in this  
17  
18 sample. A sub-sample of participants from S3 ( $N = 112; 53.6\%$ ) completed the CPTCI 6-8  
19  
20 weeks after they had initially completed the measure in the acute phase. Again, both the  
21  
22 CPTCI-PC ( $r = .76, p < .0001$ ) and CPTCI-SW ( $r = .70, p < .0001$ ) sub-scales had good test-  
23  
24 retest reliability.  
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28  
29 Convergent validity

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31 The convergent validity of the CPTCI was established by examining the association  
32  
33 between each of its sub-scales and the total score with self-report measures of post-  
34  
35 traumatic stress symptoms and depression. Each CPTCI sub-scale and the CPTCI total  
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37 score was significantly and positively correlated with the measures used to index post-  
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39 traumatic stress symptoms (the RIES-C and the CPSS) in each sample where they were  
40  
41 completed (all  $r_s > .5$ ). Likewise the CPTCI sub-scales and total score were significantly  
42  
43 and positively correlated with depressive symptoms in a sub-set of S2 participants who  
44  
45 completed the DSRS (all  $r_s > .6$ ).  
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50  
51 In order to ensure that the relationship between PTSD symptoms and negative post-  
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53 traumatic appraisals was not simply an artifact of the relationship between depression and  
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55 such appraisals (Foa et al., 1999), the correlations between the RIES-C or CPSS and  
56  
57 CPTCI scores for participants in S2 were repeated while partialling out DSRS scores. The  
58  
59 RIES-C continued to be significantly correlated with the CPTCI-PC ( $r = .35, p < .0001$ ), the  
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## CPTCI

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3 CPTCI-SW ( $r = .31, p < .001$ ), and the CPTCI total score ( $r = .36, p < .0001$ ), and the CPSS  
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5 also continued to be significantly correlated with the CPTCI-PC ( $r = .63, p < .0001$ ), the  
6  
7 CPTCI-SW ( $r = .51, p < .0001$ ), and the CPTCI total score ( $r = .63, p < .0001$ ).  
8  
9

10 The degree of specificity of the association between the CPTCI and post-traumatic  
11 stress symptomatology, relative to depressive symptoms, was examined by comparing  
12 correlation coefficients of the association between CPTCI sub-scales and psychopathology  
13 measures. These analyses were performed for the RIES-C, CPSS, and DSRS in S2, using  $z$   
14 scores to compare Fisher transformed correlation coefficients. There were no significant  
15 differences between the strength of the CPTCI correlations with the RIES-C and DSRS (all  
16  $ps > .27$ ), but the correlation coefficient for the association between CPSS and the CPTCI-  
17 PC sub-scale was significantly stronger than that between the DSRS and the CPTCI-PC  
18 sub-scale ( $z = 2.37, p < .02$ ).  
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## Discriminant validity

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34 The discriminant validity of the CPTCI was assessed by comparing PTSD and non-  
35 PTSD youth in S2 and ASD and non-ASD youth in S3. Mean scores for these sub-samples  
36 are displayed in Table 2. The sub-samples with ASD and PTSD scored significantly higher  
37 on each CPTCI sub-scale and total score relative to the non-ASD sub-samples (CPTCI-PC:  
38 Mann-Whitney  $U = 341, p < .002$ , effect size = .91; CPTCI-SW:  $t = 4.31, p < .0001$ , effect  
39 size = 1.16; total score: Mann-Whitney  $U = 318, p < .001$ , effect size = 1.09) and non-PTSD  
40 sub-samples (CPTCI-PC: Mann-Whitney  $U = 384.5, p < .0001$ , effect size = 1.88; CPTCI-  
41 SW:  $t = 7.70, p < .0001$ , effect size = 1.39; total score: Mann-Whitney  $U = 420.5, p < .0001$ ,  
42 effect size = 1.82), supporting the discriminant validity of the measure.  
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55 Mann-Whitney  $U$  statistics and  $t$ -tests were used to examine whether scores on the  
56 CPTCI differed according to the type of trauma experienced by participants in S2 and S3.  
57  
58 The most frequently endorsed trauma types in these samples were MVAs ( $n = 204$ ) and  
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## CPTCI

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3 assaults (n = 56). Participants exposed to assaults scored higher on the CPTCI-PC sub-  
4 scale (M = 23.71, SD = 9.91, vs M = 18.65, SD = 7.95M; Mann-Whitney U = 3823.5,  
5  
6  
7 p<.0001), the CPTCI-SW sub-scale (M = 27.25, SD = 9.08, vs M = 22.53, SD = 7.72; t =  
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9  
10 3.90, p<.0001), and the total scale score (M = 50.96, SD = 18.02, vs M = 41.18, SD =  
11  
12 14.67; Mann-Whitney U = 3778.0, p<.0001) than those exposed to MVAs.

## Age and gender analysis

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17 Scores on the CPTCI sub-scales differentiated by age group and gender are  
18 displayed in Table 3. These scores are based on participants' data pooled together from S1,  
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S2, and S3. No age-related differences were observed for either CPTCI sub-scale or the  
total score. Female participants scored higher on the CPTCI-SW sub-scale (Mann-Whitney  
U = 32779.5, p<.0001) and on the total score (t = 2.77, p <.007).

## Discussion

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This study presents data concerning the psychometric properties of a measure of  
trauma-related appraisals in children and adolescents – the Children's Posttraumatic  
Cognitions Inventory (CPTCI). This evaluation was conducted in a large sample (n = 570)  
of both trauma-exposed and non-trauma exposed children and adolescents, aged 6-18  
years. The sub-scales of the 25-item CPTCI were found to have a stable component  
structure and good internal reliability, test-retest reliability, convergent validity, and  
discriminative validity.

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The main weakness of the CPTCI concerned the component structure of the  
CPTCI-SW sub-scale in S3, where some items failed to load satisfactorily on the CPTCI-  
SW component. This may be attributable to the early stage at which participants in S3  
completed the CPTCI. Nevertheless, each CPTCI sub-scale had excellent internal  
reliability in this population.

## CPTCI

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The two-component structure of the CPTCI yielded sub-scales of a somewhat different nature to that observed in the PTCI. Rather than appraisals about the self and the world, as in the PTCI, the CPTCI's components consisted of items pertaining to an insult to the individual's sense of self and future (the CPTCI-PC sub-scale), and ongoing physical threat and personal weakness (the CPTCI-SW sub-scale). The blame items that comprised a distinct component in the PTCI did not satisfactorily cluster together from the 41 items that were initially analysed. This departure from the original PTCI may reflect the inclusion of a number of items derived from other measures that have indexed adult cognitions in the aftermath of trauma, particularly negative interpretations of PTSD symptoms. These items may have underpinned the emergence of the CPTCI-PC sub-scale. The clear demarcation of a component reflecting cognitions about personal integrity and psychological injury, as opposed to future physical threat, and possessing internal consistency and convergent and discriminant validity is theoretically significant and supports the application of a major component of adult cognitive models of PTSD (e.g. Ehlers & Clark, 2000) to youth.

The finding that the CPTCI sub-scales were reliable and valid measures within the *acute* phase following a traumatic stressor (as evidenced by the findings for S3) suggests that the appraisals implicated within cognitive models of PTSD may have relevance shortly after a trauma has occurred, and do not result from having persistent post-traumatic stress symptoms. Further research is needed to investigate the reliability of these cognitions over time, as we have only been able to establish test-retest reliability between three and six months post-trauma within a sub-sample of participants from S2. Given the natural recovery that occurs in some individuals in the weeks and months following a traumatic stressor (Dalgleish et al., 2008; Meiser-Stedman et al., 2005), it may be that children and adolescents' initially negative trauma-related cognitions may shift over time.

## CPTCI

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3 The items comprising the CPTCI-SW sub-scale of the CPTCI reflect cognitions  
4 around physical threat and vulnerability that are reasonably widespread in youth, even in  
5 young children (Muris et al., 2003). This may explain the absence of any age group  
6 differences on this sub-scale. That females scored higher on this sub-scale and the CPTCI  
7 total score is also explicable within the wider childhood anxiety literature that suggests that  
8 females have more severe anxiety and fears (e.g. Muris et al., 2001). An absence of age-  
9 related difference on the CPTCI-PC sub-scale, however, is more difficult to explain. The  
10 more abstract concepts this sub-scale refers to might be expected to require a cognitive  
11 sophistication beyond that of 6-8 year olds, yet this age group scored as highly as the older  
12 age groups and scores for this group had satisfactory internal consistency. A related  
13 concept is addressed by the 'mental incapacitation concerns' factor of the Childhood  
14 Anxiety Sensitivity Index (Silverman et al., 1999), a scale shown to have satisfactory  
15 internal consistency and factor stability within samples of both anxiety clinic and non-  
16 anxiety clinic children aged 7-16 years. Concerns around one's own post-traumatic  
17 psychological functioning may explain the association between the CASI and acute post-  
18 traumatic stress symptoms in older children and adolescents (Meiser-Stedman et al., 2007).  
19 The present study adds to an emerging evidence base that posits a role for meta-cognitive  
20 processes in the maintenance of anxiety disorders in even quite young children.  
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45 From a clinical perspective, the development of a valid measure of trauma-related  
46 appraisals that may be contributing to the maintenance of post-traumatic stress symptoms  
47 will be useful for assessing children and adolescents with disabling post-traumatic stress  
48 symptoms, and then developing a psychological formulation for their difficulties that  
49 guides treatment. The final 25-item version of the CPTCI is easily administered. While  
50 there have been successful attempts previously to index trauma-related cognitions in youth  
51 subjected to sexual abuse, the CPTCI was specifically designed to be neutral to the type of  
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## CPTCI

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3 trauma experienced, thereby broadening its application to children exposed to a variety of  
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5 single-event traumas.  
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8 The CPTCI benefits from being standardised within a large population of children  
9  
10 and adolescents, that included youth who completed the CPTCI within the acute phase  
11  
12 following a trauma as well as several months later. Initial studies using the CPTCI suggest  
13  
14 that it is useful for psychological mechanisms involved in the maintenance of PTSD in  
15  
16 children and adolescents (e.g. Salmon et al., 2007). In particular, Smith and colleagues  
17  
18 (2007) have shown that the effects of CBT for children and adolescents with PTSD were  
19  
20 partially mediated by changes in CPTCI scores, while Bryant and colleagues (2007)  
21  
22 showed that scores on the CPTCI-SW sub-scale in the acute phase predicted 6-month  
23  
24 PTSD severity over and above initial ASD in 7-13 year olds exposed to MVAs.  
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29 There are areas in which this measure requires further exploration, however. The  
30  
31 data sets presented here predominantly comprise children exposed to traumatic events that  
32  
33 did not last for longer than a few minutes and affected few people (e.g. MVAs). Youth  
34  
35 exposed to more enduring and widely devastating traumatic stressors, such as wars or  
36  
37 natural disasters, may appraise their experiences in a different way, e.g. in terms of wider  
38  
39 community impact. Furthermore, the usefulness of the CPTCI has not been examined in  
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41 children and adolescents exposed to multiple traumas, such as ongoing physical or sexual  
42  
43 abuse. The presence of more negative trauma-related appraisals in the participants exposed  
44  
45 to assaults, relative to those exposed to MVAs, supports this need to investigate how  
46  
47 different stressors may impact on a young person's subsequent appraisals. Finally, while  
48  
49 each CPTCI sub-scale was found to have satisfactory internal consistency in the 6-8 year  
50  
51 old age group, no additional checks were made in the youngest participants to ensure  
52  
53 comprehension of the items on this and other questionnaire measures. Future studies will  
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55 need to address these issues if this measure is to have broader usefulness.  
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## CPTCI

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## CPTCI

Table 1. Component loadings of CPTCI items by sample

Item	Component 1	Component 2
	S1 / S2 / S3	S1 / S2 / S3
I feel like I am a different person since the frightening event.	.56/.61/.46	
I used to be a happy person but now I am always sad.	.57/.65/.51	
I will never be able to have normal feelings again.	.70/.79/.69	
I'm scared that I'll get so angry that I'll break something or hurt someone.	.62/.52/.62	
My life has been destroyed by the frightening event.	.79/.76/.66	
My reactions since the frightening event mean I have changed for the worse.	.76/.72/.67	
My reactions since the frightening event mean I will never get over it.	.77/.64/.57	
My reactions since the frightening event mean something is seriously wrong with me.	.70/.81/.65	
My reactions since the frightening event show that I must be going crazy.	.63/.80/.76	
Not being able to get over all my fears means that I am a failure.	.57/.70/.68	
Nothing good can happen to me anymore.	.59/.62/.62	
Something terrible will happen if I do not try to control my thoughts about the frightening event.	.58/.72/.65	
The frightening event has changed me forever.	.67/.66/.56	

## CPTCI

1	Anyone could hurt me.	.66/.67/.45
2		
3	Bad things always happen.	.68/.54/.52
4		
5	Everyone lets me down.	.65/.59/.20
6		
7	I am a coward.	.57/.60/.22
8		
9	I am no good.	.52/.41/.13
10		
11	I can't cope when things get tough.	.58/.77/.56
12		
13	I can't stop bad things from happening to me.	.67/.59/.71
14		
15	I don't trust people.	.69/.65/.23
16		
17	I have to be really careful because something bad could	.67/.59/.79
18	happen.	
19		
20	I have to watch out for danger all the time.	.53/.63/.78
21		
22	Life is not fair.	.52/.34/.48
23		
24	Small things upset me.	.55/.60/.60
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S1 = Sample 1; S2 = Sample 2; S3 = Sample 3.

## CPTCI

Table 2. Means and Standard Deviations for CPTCI sub-scales by sample and diagnosis

CPTCI sub-scale	S1			S2			S3		
	PTSD (n=78)	No PTSD (n=134)	Total (n=223)	PTSD (n= 46)	No PTSD (n=87)	Total (n=138)	ASD (n=10)	No ASD (n=169)	Total (n=209)
'Permanent & disturbing change'	19.59 (7.03)	14.53 (3.26)	16.37 (5.56)	31.70 (9.25)	17.55 (5.21)	22.40 (9.48)	25.90 (12.84)	16.83 (5.94)	17.53 (7.07)
'Fragile person in a scary world'	26.14 (7.22)	17.83 (5.41)	20.87 (7.26)	32.57 (7.41)	22.56 (6.97)	26.00 (8.53)	29.80 (9.53)	20.33 (6.57)	21.04 (7.25)
Total score	45.72 (12.58)	32.36 (7.62)	37.24 (11.61)	64.26 (15.18)	40.11 (11.04)	48.40 (16.90)	55.70 (20.92)	37.16 (11.78)	38.57 (13.57)

S1 = Sample 1; S2 = Sample 2; S3 = Sample 3; PTSD = Post-Traumatic Stress Disorder; ASD = Acute Stress Disorder.

All PTSD vs no PTSD and ASD vs no ASD differences are significant at  $p < .002$ .

CPTCI

Table 3. Means and standard deviations on CPTCI sub-scales by age group and gender across whole sample

CPTCI sub-scale	Age group				Gender		Total sample (n = 563)
	6-8 years (n = 49)	9-11 years (n = 157)	12-14 years (n = 182)	15-18 years (n = 175)	Female (n = 268)	Male (n = 302)	
'Permanent and disturbing change'	18.41 (6.73)	17.87 (7.37)	18.07 (7.16)	18.90 (8.53)	18.62 (7.73)	17.93 (7.47)	18.30 (7.63)
'Fragile person in a scary world'	23.04 (7.14)	21.62 (7.08)	21.44 (7.65)	23.47 (8.82)	23.58 (8.24) <sup>a</sup>	20.93 (7.32) <sup>b</sup>	22.26 (7.88)
Total score	41.45 (12.74)	39.49 (13.64)	39.51 (13.87)	42.37 (16.19)	42.20 (14.90) <sup>a</sup>	38.86 (13.91) <sup>b</sup>	40.56 (14.50)

Standard deviations presented in parentheses. Superscript characters indicate a significant difference, at p<.01.

## CPTCI

## Appendix A

## Child Post-Traumatic Cognitions Inventory (CPTCI)

We would like to know what kinds of thoughts and feelings you've been having after the frightening event. Below is a list of statements. Please read each statement carefully and tell us how much you AGREE or DISAGREE with each statement by ticking one box. People react to frightening events in many different ways. There are no right or wrong answers to these statements.

1. Don't agree at all
  2. Don't agree a bit
  3. Agree a bit
  4. Agree a lot
- 
1. Anyone could hurt me.
  2. Everyone lets me down.
  3. I am a coward.
  4. My reactions since the frightening event mean I have changed for the worse.
  5. I don't trust people.
  6. My reactions since the frightening event mean something is seriously wrong with me.
  7. I am no good.
  8. Not being able to get over all my fears means that I am a failure.
  9. Small things upset me.
  10. I can't cope when things get tough.
  11. I can't stop bad things from happening to me.
  12. I have to watch out for danger all the time.

## CPTCI

13. My reactions since the frightening event mean I will never get over it.
14. I used to be a happy person but now I am always sad.
15. Bad things always happen.
16. I will never be able to have normal feelings again.
17. I'm scared that I'll get so angry that I'll break something or hurt someone.
18. Life is not fair.
19. My life has been destroyed by the frightening event.
20. I feel like I am a different person since the frightening event.
21. My reactions since the frightening event show that I must be going crazy.
22. Nothing good can happen to me anymore.
23. Something terrible will happen if I do not try to control my thoughts about the frightening event.
24. The frightening event has changed me forever.
25. I have to be really careful because something bad could happen.

## Notes:

Items belonging to the "permanent and disturbing change" sub-scale: 4, 6, 8, 13, 14, 16, 17, 19, 20, 21, 22, 23, 24.

Items belonging to the "fragile person in a scary world" sub-scale: 1, 2, 3, 5, 7, 9, 10, 11, 12, 15, 18, 25.

An electronic version of this measure is available from the first author.



## CPTCI

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