The endorsement of cognitive distortions: comparing child pornography offenders and contact sex offenders

Hannah L. Merdian[a], Cate Curtis[a], Jo Thakker[a], Nick Wilson[b] & Douglas P. Boer[a]

a School of Psychology, University of Waikato, Hamilton, New Zealand

b Department of Corrections, Hamilton, New Zealand

Psychology, Crime & Law, DOI: 10.1080/1068316X.2014.902454

*Corresponding author. Email: hmerdian@lincoln.ac.uk

Abstract

This study examined the endorsement of cognitive distortions in child pornography offenders (CPOs), using an established assessment tool, the Abel and Becker Cognition Scale. The scale was expanded to include cognitions specific to child pornography offending, extracted from Howitt and Sheldon's Children and Sexual Activities Inventory (C&SA). Three samples of CPOs, child sex offenders and offenders with both offence types responded to the cognition items. An exploratory Principal Component Analysis suggested six main components of the scale. CPOs were significantly less likely to endorse these statements in general, and this was more pronounced on items that project blame onto the child or other people, describe a need for power and consider children as sexually active. The statements extracted from C&SA did not differentiate between the groups. These findings are discussed under consideration of the relationship between cognitive distortions and contact sex offending, and in reference to the general criticism concerning the definition and appropriate measurement of cognitive distortions.

Keywords: child pornography; child sexual abuse; cognitive distortions; sexual abuse; sexual offences

The endorsement of cognitive distortions: comparing child pornography offenders and contact sex offenders

The professional literature surrounding sex offending has focused on cognitions as a crucial factor in initialising and maintaining the abusive behaviour (e.g., The Integrated Theory of Sexual Offending, Ward & Beech, 2006; The Schema-Based Model of Sexual Assault, Mann & Beech, 2003). In his cognitive models of therapy, Beck (1963) initially introduced the term cognitive distortions as referring to unfounded or dysfunctional thought content in his patients. With regard to contact child sex offenders (CSOs), Abel et al. (1989) defined cognitive distortions as 'justifications, perceptions and judgements used by the sex offender to rationalize his child molestation behaviour' (p. 137). Recently, a professional debate has emerged surrounding the conceptualisation and terminological specificity of cognitive distortions (Friestad, 2011; Ó Ciardha & Gannon, 2011), the value of targeting them in sex offender treatment (Marshall, Marshall, & Kingston, 2011), and their appropriate measurement (Gannon, 2009; Snowden, Craig, & Gray, 2011).

There are currently two approaches to assessing for cognitive distortions: (1) explicit measures, such as psychometric scales [e.g., the Abel and Becker Cognition Scale (ABCS; Abel et al., 1984)], where the presence of offence-supportive beliefs is deducted from responses to questionnaire items and (2) implicit measures (e.g., the Implicit Association Test; Gray, Brown, MacCulloch, Smith, & Snowden, 2005), where the presence of offence supportive beliefs is deducted from differences in one's response latencies. Both approaches hold conceptual challenges in that they can only be considered a proxy to accessing cognitive distortions, however, to date define the consensual approach in measuring these underlying belief systems.

With the advent of the Internet, a new category of sex offenders has become prevalent, namely those who use the Internet in some manner to sexually offend. Subsequently, child pornography offenders (CPOs) have received much research attention in recent years, both empirically (see Babchishin, Hanson, & Herrmann, 2010) anv theoretically (e.g., Merdian, Curtis, Thakker, Wilson, & Boer, 2011). Some stable differences have been established between CPOs and CSOs regarding psychological and offence-related variables (Babchishin et al., 2010; Elliott, Beech, & Mandelville- Norden, 2012).

Exploring the cognitive distortions of CPOs is thus informative for at least two reasons. First, an analysis of CPOs' endorsement of sexual thoughts surrounding children will allow further insight into the differences between CPOs and CSOs; for example, regarding assessment and treatment needs of this specific offender population. Second, on a conceptual level, CPOs can be considered as being located in the centre of a continuum between thinking (fantasy-driven) about child sexual abuse and translating their cognitions into actions

(contact-driven), where the viewing or downloading of images combines both cognitive and behavioural elements. For some, child pornography viewing may represent a pre-stage to contact sex contact sex offending, moving from the endorsement of child sexual abuse through imagery to direct involvement with a child victim. Exploring the question of fantasy-driven versus contact-driven cognitive distortions will directly contribute to an understanding of risk for this offender group, of both re-offending and cross-over behaviour to contact child sexual abuse.

Cognitive distortions in CPOs

Research on cognitive distortions of CPOs is still sparse. Most studies refer to extraction of such cognitions from material not originally intended for respective research, such as online chat protocols of an adult with a minor (DeLong, Durkin, & Hundersmarck, 2010) or online postings on paedophile-supportive websites (D'Ovidio, Mitman, El-Burki, & Shumar, 2009; Durkin & Bryant, 1999; Holt, Blevins, & Burkert, 2010; O'Halloran & Quayle, 2010). Bates and Metcalf (2007) compared 39 CPOs and 39 CSOs on a number of psychological scales, including a scale for cognitive distortions and victim empathy (scale titles not specified). CPOs appeared to score considerably lower on both scales, however, no information about statistical significance was provided. Elliott, Beech, Mandelville-Norden, and Hayes (2009) examined a larger offender sample (505 CPOs, 526 CSOs) on the Victim Empathy Distortion Scale (Beckett & Fisher, 1994) and the Children and Sex Cognitions Questionnaire (Beckett, 1987); on both scales, CSOs were found to have significantly higher scores than CPOs. In a follow-up study, Elliott et al. (2012) compared 526 CSOs, 459 CPOs and 13 mixed offenders (MOs; offenders with both offence types) and confirmed the stronger endorsement of cognitive distortions and victim empathy distortions in CSOs. Somewhat unexpectedly, the group of MOs displayed the highest empathetic concern in comparison to the other two groups.

Finally, in their meta-analysis, Babchishin et al. (2010) reported that contact offenders were found to display significantly stronger emotional identification with children and higher endorsement of cognitive distortions than CPOs. However, they did not identify any difference between the offender types regarding victim empathy. There are two potential explanations for these findings: (1) CPOs endorse fewer cognitive distortions than contact CSOs or (2) CPOs endorse different cognitive distortions to those supported by CSOs, which are not included in current standardised measures. With regards to the latter, O'Brien and Webster (2007) developed a questionnaire on Internet Behaviours and Attitudes (IBAQ), which includes two subscales: (1) Behavioural items: Items regarding various online behaviours; for example, which online facilities were visited by the offender or which methods were used to obtain child pornography from the Internet; and (2) Attitudinal items: Items referring to the offender's attitudes about the Internet in general and his child pornography offending. Amongst the 123 CPOs tested, it was found that the more behaviours a person admitted to, the higher the attitudinal score obtained by the individual (indicative of offence-supportive cognitive distortions). People with higher attitudinal scores generally showed more online social activities relating to child pornography. Furthermore, they appeared more organised and were more engaged in

their child pornography offending, used the material in a sexual manner, and reported fewer regrets about their offensive behaviour.

However, no follow-up research was identified using the IBAQ for further validation. Howitt and Sheldon (2007) developed the Children and Sexual Activities Inventory (C&SA) from existing cognitive distortion scales, i.e., the ABCS, the MOLEST (Bumby, 1996) and Hanson Sex Attitude Questionnaire (Hanson, Gizzarelli, & Scott, 1994). The 39 items of the C&SA allow for classification according to Ward and Keenan's (1999) five implicit core schemas of cognitive distortions: (1) Children as Sexual Objects, (2) Entitlement, (3) Dangerous world, (4) Uncontrollability and (5) Nature of Harm, suggesting some similarity to conventional distortion scales. Using a sample of 16 CPOs, 25 CSOs and 10 MOs, two principal components emerged underlying the C&SA: Children as Sexual Objects and Justifications for Offending, with CPOs scoring higher on the first factor. Despite its contribution to this novel area, the study by Howitt and Sheldon (2007) had several limitations including small sample sizes and the use of the same participants for both factor analytic validation and for group comparisons. In addition, the extracted factors accounted for only 40.38% of the overall variance. Nevertheless, a developing research area such as online sex offending is dependent on exploratory research projects to build a larger-scale, theory-based empirical foundation.

Scope of the current study

The current study is aimed to build on Howitt and Sheldon's original contribution and to further broaden the knowledge base about CPOs' cognitive distortions in a predominantly exploratory manner. While existing assessment and treatment models for CPOs are strongly oriented to the 'what works' literature based on CSOs (e.g., Hayes & Middleton, 2006), more specific knowledge about their content, such as the cognitive distortions endorsed by CPOs, will assist in developing assessment and treatment methods responsive to their criminogenic needs and provide further insight into the role of cognitive distortions in the contact offence process. In short, CPOs should not be treated like CSOs without supportive research evidence. Consequently, the predominant research task of comparing CSOs and CPOs should initially build upon the recognised research knowledge in the field, for example, by using a cognitive distortion scale that has been well-established with CSOs as a starting point. Abel et al.'s (1984) ABCS was the first scale developed to assess cognitive distortions relating to children and sex. The ABCS has since been applied in many studies on child contact sex offenders (e.g., Allan, Grace, Rutherford, & Hudson, 2007; Kolton, Boer, & Boer, 2001; Marshall, Hamilton, & Fernandez, 2001; Stermac & Segal, 1989) but, to the knowledge of the authors, it has not been applied to CPOs.

As stated, CPOs might experience distortions of a different quality than CSOs, as explored by Howitt and Sheldon (2007) in their C&SA. The current study therefore included

items of the C&SA with potentially higher content validity for CPOs for additional analysis alongside the ABCS.

Method

Participants

The data for this project were collected as part of a larger study. For the current study, responses from 22 CPOs, 29 CSOs and 17 MOs were available. Offender classification was based on self-report information. Individuals were eligible for this study if they had a minimum age of 18 years, were male and had a sufficient understanding of English reading and writing. It was also essential that the individual had no intellectual impairment (that affected his ability to make an informed decision about participation or to understand the test material) and a history and/or interest in sexual contact with a minor and/or possession, distribution and production of child pornography. Participants were recruited from both community sex offender treatment centres and prison settings throughout New Zealand. Staff at the treatment centres and the prisons assessed the participants for eligibility, thus, no information was available on the representativeness of this sample. There were only few significant differences in demographics between the offender groups (see Table 1): Only one CPO was in prison at the time of data collection in comparison to 90% of CSOs (n = 26) and nearly 60% of MOs (n = 10). Overall, the difference in their status (community vs. prison) between CPOs and CSOs was found to be highly significant ($p < .001$, Fisher's exact test). Hence, the demographic differences between CPOs and CPOs may reflect a difference in their prison status. Indeed, participants in the community were found to have a higher average education than participants in prison (Mdn = 12 vs. Mdn = 8), $U = 341.5$, $z = -2.565$, $p = .01$, $r = -.315$ and were less likely to belong to an ethnic minority (i.e., Maori; $p < .05$, Fisher's exact test). Table 1 also provides details of the contact sexual crimes committed by CSOs and MOs; no data were available on the timely order of crimes committed by MOs. Of the 46 offenders with contact sex offences, 6 self-identified as producers of child pornographic material.

[insert Table 1]

Instruments and procedure

Each participant responded to a self-guided survey provided on portable computers, covering different assessment areas, such as lifestyle and criminal history. The current study is focused on the last subsection of this survey, which consisted of the following questionnaires. The ABCS (Abel et al., 1984) contains 29 statements regarding children and sex, such as 'Most children 13 (or younger) would enjoy having sex with an adult, and it wouldn't harm the child in the future'. In the original research, factor analysis revealed six different dimensions underlying the cognitions of these samples, which indicates that offenders endorse different types of cognitions. Abel et al. (1989) found that CSOs were significantly more deviant than normal controls on all six dimensions of the scale. Overall, the scale is commonly used and has high to moderate levels of reliability (internal consistency: $\alpha = .59–.64$ and test–retest reliabilities: $r = .64–.76$; Tierny & McCabe, 2001).

In order to add items with potentially higher content-validity for CPOs, two of the authors independently chose items from the C&SA that appeared specific to child pornography offending. Ten items were agreed upon, namely items 3, 4, 7, 9, 12, 13, 15, 18 and 19 (Items 30–39 in Table 2). Item 16, 'Children are more reliable and more trusting than adults', arguably refers to emotional congruence with children; however, the original wording appeared too general to differentiate endorsement of distorted thought content. It was thus rephrased to 'I feel more comfortable with children than adults' to aim for a self-focused response on part of the offender.

Participants were required to rank the items on a 5-point Likert scale from 1 for 'strongly agree' to 5 'strongly disagree', with 3 as the neutral point of neither agreement nor disagreement. Thus, lower scores reflect stronger agreement with offence-supportive statements, and are thus considered indicative of the presence of cognitive distortions.

[insert Table 2 about here]

Analysis

The methodology employed followed the structure provided by Howitt and Sheldon (2007), however, in the current study, item responses were analysed using a principal component analysis (PCA) rather than Principal Axis Factor Analysis. While factor analysis derives an underlying model as the basis for factor extraction, PCA is a dimension-reduction technique used to simplify a variable set to its latent principal components by examining item clusters based on their variance–covariance structure (Johnson & Wichern, 2002). As outlined by Afifi, Clark, and May (2004), dimension reduction occurs by selecting the variables belonging to the principal components that explain the majority of the overall variance rather than the shared variance between items. In this way, PCA remains more closely related to the original data-set by providing a lower-level representation. In addition, PCA has a strong exploratory element given that it results in a reduced number of principal components that represent meaningful item 'clusters', weighted according to their explanatory power.

Both factor analysis and PCA provide an interesting methodological choice given the very small number of participants available. Similarly, Howitt and Sheldon (2007) acknowledged the limited generalisability of their analysis and presented the theoretical value of their findings as supportive of their methodology. Although it is conventionally recommended to have 10–15 cases per item for a successful factor analysis, there are no standard minimum numbers (SAS Library, 1995) and it is generally recommended to have more cases than variables. Field (2009) thus proposed using the Kaiser–Meyer– Olkin measure of sampling adequacy (KMO) to assess the value of conducting factor analytic methods, with higher KMO values suggesting more reliable results. As the current study yielded a comparable sample size, it is acknowledged that the reported findings need to be considered as exploratory and that validation with a larger sample is desirable.

Results

Descriptive analysis of cognitive distortions items

Overall, there was a potential score range of 39 (strongly agree for all items) to 195 (strongly disagree for all items). Participants had a median score of 162, with scores ranging from 85 to 195. This reveals a clear tendency towards the higher end of the response scale, conveying that more people disagreed with the statements than agreed to them. Scores were found to be normally distributed, $D(68) = .093$, $p > .05$, K–S test, with no significant outliers in the sum score distribution. Item responses were statistically independent from participants' status (community vs. prison, $r_{pb} = -.027$), their age ($r_S = .115$) and education levels ($r_S = -.042$). Table 2 displays the percentage of participants who agreed or strongly agreed with the items. Items receiving comparably high levels of support were: 'An adult can tell if having sex with a young child will emotionally damage the child in the future' (41.18%), 'For many men, sex offences against children are the result of stress and the offence helped to relieve the stress' (30.88%), 'My daughter (son) or other young child knows that I will still love her (him) even if she (he) refuses to be sexual with me' (27.94%), and 'An adult can know just how much sex between him (her) and a child will hurt the child later on' (26.47%). Low endorsement was received by items such as: 'When a young child has sex with an adult, it helps the child learn how to relate to adults in the future' (2.94%), 'If an adult has sex with a young child it prevents the child from having sexual hang-ups in the future' (2.94%), 'A man is justified in having sex with his children or step-children, if his wife doesn't like sex' (1.47%) and 'It's better to have sex with your child (or someone else's child) than to have an affair' (0%).

All but the three most strongly endorsed items had a median score of 4 (disagree) or 5 (strongly disagree), with the exception of Item 13 (Mdn = 3.5; 'An adult can tell if having sex with a young child will emotionally damage the child in the future'), Item 19 (Mdn = 3.5; 'My daughter [son] or other young child knows that I will still love her [him] even if she [he] refuses to be sexual with me') and Item 35 (Mdn = 3; 'For many men, sex offences against children are the result of stress and the offence helped to relieve the stress'). In summary, endorsement of the cognitive distortion items was low across all offender subgroups.

Group Comparisons

Sum scores. CPOs had a median sum score of 170 (range: 95–195), CSOs had a median sum score of 159 (range: 101–195), and MOs had a median sum score of 146 (range: 85–195), conveying that cognitive distortion items were mostly endorsed by contact offenders (MOs > CSOs). Box plot analysis identified one outlier in the group of CPOs, with a sum score of 95. After removal of the outlier, the difference in sum scores between offender types just reached significance, $H(2) = 5.992$, $p = .05$. Post-hoc Mann–Whitney tests between CPOs and CSOs and CSOs and MOs did not reach significance; hence, the overall significance finding is based on the difference between CPOs and MOs. In summary, MOs were found to be significantly more likely to endorse the cognitive distortion items than CPOs. CSOs' endorsement was not significantly different from either offender subgroup.

Scale comparisons. Kruskal–Wallis tests were conducted to test for differences between the offender groups on the original scales, i.e., the ABCS and the selected items from C&SA. There was a significant difference between the offender groups on the ABCS sum scores, $H(2) = 7.087$, $p < .05$. CPOs had significantly higher sum scores on the ABCS than the other two offender groups, $U = 206$, $z = -1.937$, p (one-tailed) $< .05$, $r = -.27$ (only tested with CSOs). There were no significant differences between the offender groups on the C&SA items.

Principal component analysis of cognitive distortions

PCA is dependent on two main criteria: Intercorrelations between items and adequacy of sample size. Analysis of the intercorrelation matrix between all items identified only four items with ten or more intercorrelations lower than $rS = |.3|$. PCA with Varimax rotation was conducted, extracting seven independent components, which explained about 75% of the total variance and reproduced 80% of the original item correlations with only minor deviations (for factor loadings, see Table 2). KMO was .829, which confirmed adequacy of the sample size. Analysis of KMO values for individual variables indicated acceptable values across all variables. Visual analysis of the scree-plot revealed a second inflexion after four components, however, this solution only explained 66% of the overall variance and omitted one item. Hence, the seven-component structure was retained (see Table 2).

Component 1 consisted of 13 items, explaining about one-fifth of the total variance. These items shared many of the features in Ward and Keenan's (1999) description of Children as Sexual Objects: perception of children as consensual sex partners, denial of harm, sex as expression of love and free choice by all participants. Hence, the title Sexual Objectification of Children was chosen. Subscale reliability of Component 1, using Cronbach's alpha, was $\alpha = .96$ (lowest item-total correlation: $r = .662$). Component 2 consisted of five items, explaining about 12% of the total variance. Items here combined features from Ward and Keenan's Entitlement and Children as Sexual Objects and communicate a sense of blame attribution. The component was therefore labelled as Justification. This subscale had an alpha of $\alpha = .885$ with the lowest item-total correlation at $r = .636$. Component 3 consisted of five items, explaining 11% of the total variance, relating to cognitions describing children as sexually active. This subscale, labelled Children as Sexual Agents, had a subscale alpha of $\alpha = .894$ and the lowest item-total correlation at $r = .626$.

The six items of Component 4 combine features from Ward and Keenan's Uncontrollability and Nature of Harm. In these statements, the offender either denies control over the situation or believes he can minimise harm to the victims. Therefore, the factor was labelled Denial of Sex Offender Status, given that the offender believes that he is different from the 'typical' sex offender. Subscale alpha was $\alpha = .844$, with the lowest item-total correlation at $r = .509$. The four items belonging to Component 5 resulted in a scale alpha of α

= .756 and the lowest item-total correlation was at r = .452. These items described some understanding of the negativity of one's action, and hence were labelled Emphasis on Cognitive Cognitive Element. They explain about 10% of the total variance. Component 6 also combined features from Ward and Keenan's Nature of Harm and Uncontrollability but emphasised the dominant position of the self, similar to their Entitlement schema. Thus, this component was labelled Power and Entitlement. This subscale had an alpha of $\alpha = .82$, with the lowest item-total correlation of r = .517, and explained 7% of the total variance.

Component 7 only constituted one item, Item 19, 'My daughter [son] or other young child knows that I will still love her [him] even if she [he] refuses to be sexual with me'. The item further stood out given that none of the offenders agreed or strongly agreed to this item. This is particularly interesting given some of the other components contain items that argue favourably towards potential harm minimisation, however, there seems to be a general understanding that incestuous sexual abuse does interrupt a healthy child– parent relationship. Given the singular outlier position of this item, it is not considered a genuine component.

In summary, dimension reduction revealed at least six meaningful underlying dimensions to these cognitions items. The subscale alphas were very high, resulting from the high number of participants disagreeing with these statements. As assumptions for ANOVA were not fulfilled, group differences on the cognitive distortion sum scores were tested using Kruskal–Wallis tests. The offender types significantly differed in their scores on three components, Justification, $H(2) = 14.344$, $p < .01$, Children as Sexual Agents, $H(2) = 7.756$, $p < .05$ and Power and Entitlement, $H(2) = 10.266$, $p < .01$. Selected Mann–Whitney tests were conducted to follow up these findings, with a Bonferroni-corrected alpha at .025. It appeared that CPOs were significantly more likely to disagree with these cognitive distortion statements than the other two offender types, with no significant difference between CSOs and MOs [only tested on CSOs, Justification: $U = 159$, $z = -2.801$, p (one-tailed) < .01, $r = -.39$; Children as Sexual Agents: $U = 199$, $z = -2.338$, p (one-tailed) < .01, $r = -.33$; Power and Entitlement: $U = 154$, $z = -2.787$, p (one-tailed) < .01, $r = -.4$].

Result summary

Overall, endorsement of the cognitive distortion items was generally low. MOs showed the highest affirmation across all offender subtypes, followed by CSOs; scale comparisons revealed that the identified difference was based solely on the participants' performance on the ABCS items. Follow-up item analysis using PCA showed that the differences amongst offender subgroups were based on three item components: Justification, Children as Sexual Agents and Power and Entitlement, with CPOs being significantly less likely to endorse these themes than contact sex offenders. There was no significant difference between CSOs and MOs in their agreement on cognitive distortion items.

Discussion

The current study explored the endorsement of cognitive distortions of CPOs in comparison to offenders with contact child victims. An established measure, the ABCS, was amended with 10 items retrieved from the Children and Sexual Activities Scale, in order to test for cognitive distortions with higher content validity for CPOs. The study sample included 22 CPOs, 29 CSOs and 17 offenders with both offence types. Overall, these MOs showed the highest endorsement of cognitive distortions, followed by CSOs. There were significant differences between CPOs and contact offenders (both CSOs and MOs) on the scale components Justification, Children as Sexual Agents and Power and Entitlement.

The current findings raised some critical points, regarding the role of cognitive distortions as potential facilitators of contact sex offending, the need for a specialist assessment tool for CPOs, as well as the challenges surrounding the assessment of cognitive distortions.

Cognitive distortions as potential facilitators of contact sex offending

The most recent meta-analysis on CPOs (Babchishin, Hanson, & VanZuylen, 2014) has just been released, comprising 30 offender samples (with ns ranging from 98 to 2,702). In comparing CPOs with and without contact sex offences, Babchishin et al. identified the main predictors of cross-over from child pornography to contact sex offending, namely, a sexual interest in children, access to children, high levels of antisociality and few psychological barriers to acting on one's sexually deviant interests. In the current study, CPOs were found to have the highest level of disagreement with the cognitive distortion items in general. In particular, CPOs were found to be less likely to agree to statements blaming other people (including their victims) for their sexual actions, to consider children as sexually willing and active, and to feel entitled to their sexual behaviour, thus portraying themselves as more aware of consent issues regarding child–adult sexual activities and as more conscious of their position of power over the victim than offenders with a contact victim. These findings are in line with Babchishin et al.'s research, exposing little evidence of antisociality and high psychological barriers amongst this noncontact offender group.

Across all three offender subgroups, MOs expressed the strongest endorsement of cognitive distortions, most significantly on the components of Children as Sexual Agents, Entitlement and Justification. Again, the current study confirms Babchishin et al.'s hypotheses, with MOs clearly expressing a sexual interest in children (Children as Sexual Agents), high levels of antisociality (Entitlement) and few psychological barriers in acting on their impulses (Justification). However, these findings stand in contrast to Elliott et al.'s (2012) large-scale comparison study where MOs were found to express the least endorsement of cognitive distortions in comparison to CSOs and CPOs, using the Victim Empathy Distortion Scale (Beckett & Fisher, 1994) and the Children and Sex Cognitions Questionnaire (Beckett, 1987). However, Elliott et al. described these results as 'contradictory' (p. 11) given

that MOs exposed themselves not only to sexual abuse imagery but also to the 'harmful realities of the sexual offense process' (p. 11). Indeed, in a recent study on offence motivations (Merdian, Boer, Thakker, Wilson, & Curtis, 2013), MOs were found to be more likely than CPOs to self-identify a sexual interest in minors as their main motivation to view child pornography, pointing towards higher endorsement of cognitive distortions relating to children and sex. An alternative explanation can be seen in the hypothesis that distorted cognitions are subject to change as the offender progresses in his offending behaviour (Carr, 2006; O'Brien & Webster, 2007; Quayle & Taylor, 2003), with CPOs and MOs arguably being placed at different stages on the fantasy versus contact-driven offending continuum. For example, Quayle and Taylor (2001) reported the case of a 33-year-old online sex offender, who, while progressing in his behaviour from child pornography consumption to engaging with victims online, also changed his language and self-portrayal from initially presenting himself as a child to that of a sexually aggressive adult, potentially indicating a shift in his cognitive processes. Thus, it is expected that contact and noncontact offenders endorse different types of cognitive distortions, and that these adapt following reinforcement from behavioural changes.

Need for a specialised assessment tool for CPOs

The low endorsement of cognitive distortions on part of CPOs may confirm the assumption that CPOs' cognitions are offence-specific and thus not picked up with existing scales. Indeed, CPOs' agreement was higher for items that were targeted towards their unique criminal situation, for example, Item 32 ('Sexual thoughts about a child are not that bad because it does not really hurt the child') and Item 33 ('Just looking at a naked child is not as bad as touching and will probably not affect the child as much'). As expected, agreement to these items was reduced for CSOs (Item 32 agreed by 29% MOs, 23% CPOs, 10% CSOs; Item 33 agreed by 36% CPOs, 29% MOs, 10% CSOs). CPOs have previously been found to endorse distortion items portraying children as sexual objects and to be less likely to endorse justification statements (Howitt & Sheldon, 2007). In the current study, offenders did not differ on items portraying children as sexual objects but CPOs displayed the lowest agreement with regards to justification items. The literature further suggested that CPOs are less inclined to identify emotionally with children (e.g., Babchishin et al., 2010; Elliott et al., 2012). None of the extracted components in this study explicitly referred to emotional identification with children, however, content analysis suggested the following items as measures of emotional identification; Item 15 ('I show my love and affection to a child by having sex with her (him)'; agreed by 23% MOs, 10% CSOs, 5% CPOs), Item 23 ('My relationship with my daughter (son) or other child is strengthened by the fact that we have sex together'; agreed by 18% MOs, 5% CPOs, 0% CSOs), and Item 37 ('I feel more comfortable with children than adults'; agreed by 29% MOs, 23% CPOs, 21% CSOs). While MOs showed the strongest support for these items, CPOs endorsement was higher than CSOs' on all but the first, contact-related item. Lastly, it has also been suggested that CPOs may support cognitions questioning societal morals (Sheldon & Howitt, 2007), as expressed in

Item 12 ('Sometimes in the future, our society will realise that sex between a child and an adult is all right'). Again, MOs showed the highest agreement (29%) with none of the other offender types supporting this statement.

In summary, these findings confirm that the CPOs in this sample had low endorsement of cognitive distortions in general but that there is some value in exploring offence-specific cognitions with this offender subgroup. There was no significant difference between the offender subgroups' agreement to cognitive distortions when only the items from the C&SA were examined. At the start of the paper, two explanations were proposed for the identified difference between CPOs and contact CSOs in their endorsement of cognitive distortions, namely, that CPOs endorse fewer cognitive distortions than contact offenders, or that they endorse cognitive distortions of a different quality. With the current findings in mind, the following interim clarifications can be added: (1) CPOs endorse fewer cognitive distortions than contact CSOs on conventional measures of attitudes towards children and sex and (2) CPOs endorse cognitive distortions of particular relevance to their offending, which are currently not included in standardised measures. This underlines the need for a more specialised assessment tool for non-contact offenders.

Challenges surrounding the assessment of cognitive distortions

The total scale and all subscales (with the exception of Item 19) resulted in very high scale reliability (α ranging from .756 to .968). This finding, even though desired, is most likely the result of a lack of variance in the participants' response patterns. Indeed, the participants showed a clear tendency towards the higher end of the Likert scale (rejection of items). The high disagreement with the items is statistically concerning as it is questionable if a ceiling effect can be meaningfully interpreted.

In addition, the content validity of the current scale, and arguably other scales purporting to measure cognitive distortion, is to be challenged. As indicated in the introduction of this paper, there is a professional debate surrounding the construct cognitive distortions in terms of its definition and appropriate measurement. When applying Beck's (1963) comparably broad definition of cognitive distortions as unfounded or dysfunctional thought content, cognitive distortions should refer to thoughts that a 'reasonable person' would not endorse. However, some of the items in the current scale, for example, Item 32 ('Sexual thoughts about a child are not that bad because it does not really hurt the child') or Item 37 ('I feel more comfortable with children than adults') may not to fit this definition. This observation is further confirmed when reviewing the items with high endorsement in Howitt and Sheldon's (2007) original study on the C&SA, such as 'A lot of the time men do not plan their sex offences involving children – they just happen' (41.2% agreement), 'Children are innocent and want to please adults' (66.6% agreement), 'For many men, their sex offences involving children were the result of stress and the offending behaviour helped

to relieve the stress' (43.1% agreement) and 'Children are more reliable and more trusting than adults' (92.2% agreement). As in the current study, items with a positive framing of sexual activities between children and adults were endorsed with a much lower frequency, for example, 'Sexual activities with children can make a child feel closer to adults' (19.6% agreement) and 'Sometime in the future our society will realise that sex between a child and adult is alright' (5.9% agreement). Thus, the extent of distorted thought content within so-called cognitive distortion scales cannot be stated without a validation based on normative data from a non-offending control population.

These concerns surrounding the content validity of the existing scales are closely related to, or a consequence of, the lack of construct validity. There is a body of research challenging what exactly assessments of cognitive distortions claim to measure. Ó Ciardha and Gannon (2011) and Maruna and Mann (2006) pointed to the wide range of meanings associated with the term cognitive distortions, ranging from higher order belief systems to post-offence rationalisations and excuses. Maruna and Mann stated that Abel et al. (1989) extended Beck's (1963) original definition of cognitive distortions to include a self-serving bias on part of the offenders, thus potentially representing them as post-hoc justifications rather than genuine attitude differences regarding children and sex. Maruna and Mann (2006) challenged the negative evaluation of such 'excuse-making', suggesting that the attribution of shameful or otherwise negative events to external and unstable causes represents a normal coping mechanism with no empirical relationship to risk. In addition, due to their nature, post-hoc rationalisations cannot be regarded as causal to offending and should be considered separate from underlying offence-supportive beliefs that may genuinely contribute to the offending behaviour.

These considerations allow two main conclusions. First, the current component structure is reflective of the nature of the original items that had been included in the analysis, and is thus biased towards Abel et al.'s (1984) and Howitt and Sheldon's (2007) conceptualisation of cognitive distortions. Thus, an exploration of cognitive distortions of CPOs may benefit from an additional theoretical approach. Secondly, the discussion about the lack of content and construct validity of cognitive distortion scales relates back to the issue concerning their appropriate measurement and the high transparency of these scales. As discussed, the research focus has in recent years expanded to include indirect measures of cognitions, such as the Implicit Relational Assessment Procedure (Barnes-Holmes et al., 2006) or the Implicit Association Test (Gray et al., 2005), which may be considered more apt at 'breaking through' the outer layer of excuse-making. Keown, Gannon, and Ward (2010) examined the cognitive distortions of CSOs by using three differing assessment methods: an interview (explicit assessment with direct researcher input), a questionnaire (explicit assessment without direct researcher input) and an experimental task (Rapid Serial Visual Presentation-Modified; implicit assessment). Between these assessment methods, there was no agreement regarding the cognitive distortions identified for each individual, confirming that the current understanding of cognitive distortions does not define a theoretical construct but rests on its operational definition based on the choice of measurement.

Limitations of the current study

There are two main concerns with this study. The study included a small sample which significantly reduces the generalisability of the findings. In addition, study participation was voluntary and based on self-report data. A potential methodological limitation is that most offenders belonging to the group of CSOs and MOs were located in prison at the time of data collection while nearly all CPOs resided in the community, which could have affected their responses to the survey questions. In addition, the location of an offender determined the procedures of data collection; thus, presence of the main researcher and other participants could have influenced the responses. The scale has a number of limitations, particularly its transparent nature. This is especially concerning given that CSOs might often be tested in a setting where participants are prone to misrepresentation (Blumenthal, Gudjonsson, & Burns, 1999; Gannon, Keown, & Polaschek, 2007). Finally, the sample used to assess the psychometric properties of the scale was also used as a study sample to explore differences between CPOs and CSOs. Even though this is common in studies regarding scale development (e.g., Howitt & Sheldon, 2007), it is only acceptable as a form of exploratory investigation and needs to be followed up with more rigorous research.

Conclusion

While the validity of this research is limited by its small sample size, it provides some preliminary findings of interest. The most significant finding of this study is that CPOs were less inclined to endorse cognitive distortions relating to children and sex than contact sex offenders. It was expected that an understanding of the cognitive processes of CPOs will provide further insight into the role of cognitive distortions in the contact offence process. The strong endorsement of cognitive distortions by MOs provides some support for the relationship between maladaptive schemata and contact sex offending, however, a developmental cause needs to be clarified. Overall, the profile of MOs raises concerns; based on their strong pedophilic preferences and resilient endorsement of cognitive distortions, MOs are potentially placed at a high risk of reoffending, for both child pornography and contact sex offending (see Babchishin et al., 2014). However, these findings may also imply that such cognitive distortions are causally linked to contact sex offending. For example, CPOs may not perceive their offending as severe enough to develop the same level of justifications as do contact sex offenders.

In practical terms, these preliminary results show that the ABCS scale can be meaningfully extended using items from the C&SA, and that it has very good psychometric properties for its application on CPOs, for example, as a pre-treatment assessment tool. Furthermore, the findings have relevance for the treatment of CPOs as the offenders' motivation to commit a sexual crime might consequently be different from contact sex offenders, specifically with regards to power and consensus issues. For example, CPOs

appear to be less inclined to blame the victim. Reversely, an offender who has a higher agreement with the items on Power and Entitlement or Children as Sexual Agents may thus be at a higher risk to conduct a contact sex offence. However, the concerns raised regarding the conceptualisation and terminological specificity of cognitive distortions call for further research, employing various means of their measurement, before these findings can be meaningfully implemented in the existing offender management.

The paper raised some noteworthy questions about the definition of cognitive distortions and their appropriate measurement, which limit the validity of existing assessment tools. In the current study, most participants rejected the endorsement of cognitive distortions, indicating that most CSOs do not hold such distortions. Alternatively, some offenders may superficially endorse some cognitive distortions as a way of feeling more comfortable with this behaviour, while still maintaining an awareness of the inappropriateness of his actions. Furthermore, the presence or absence of a distortion and the degree to which it is endorsed may fluctuate over time. These possibilities highlight the complexity of the topic and therefore the challenges for researchers in this area.

References

Abel, G. G., Becker, J. V., Cunningham-Rathner, J., Rouleau, J. L., Kaplan, M., & Reich, J. (1984). *Treatment manual: The treatment of child molesters.* Atlanta, US: Emory University.

Abel, G. G., Gore, D. K., Holland, C. L., Camp, N., Becker, J. V., & Rathner, J. (1989). The measurement of the cognitive distortions of child molesters. *Annals of Sex Research, 2*, 135 – 153.

Afifi, A., Clark, V. A., & May, S. (2004). *Computer-aided multivariate analysis (4th ed.)*. Boca Raton, FL: Chapman & Hall/CRC.

Allan, M., Grace, R. C., Rutherford, B., & Hudson, S. M. (2007). Psychometric assessment of dynamic risk factors for child molesters. *Sexual Abuse: A Journal of Research and Treatment, 19*(4), 347-367. doi: 10.1007/s11194-007-9052-5

Babchishin, K. M., Hanson, R. K., & Herrmann, C. A. (2010). The characteristics of online sex offenders: A meta-analysis. *Sexual Abuse: A Journal of Research and Treatment, 23*(1), 92-123. doi: 10.1177/1079063210370708

Barnes-Holmes, D., Barnes-Holmes, Y., Power, P., Hayden, E., Milne, R., & Stewart, I. (2006). Do you know what you believe? Developing the Implicit Relational Assessment Procedure as a direct measure of implicit beliefs. *Irish Psychologist, 32*, 169-177.

Bates, A., & Metcalf, C. (2007). A psychometric comparison of Internet and non-Internet sex offenders from a community treatment sample. *Journal of Sexual Aggression, 13*, 11-20. doi:10.1080/135526007

01365654

Beck, A. T. (1963). Thinking and depression: 1. Idiosyncratic content and cognitive distortions. *Archives of General Psychiatry, 9*, 324–333.

Beckett, R. C. (1987). *The Children and Sex Questionnaire*. Oxford, UK: Littlemore Health Centre.

Beckett, R. C. & Fisher, D. (1994, November). *Assessing victim empathy: A new measure.* Paper presented at the 13th Annual Conference of the Association for the Treatment of Sexual Abusers, San Francisco.

Blake, E., & Gannon, T. A. (2010). The implicit theories of rape-prone men: An information-processing investigation. *International Journal of Offender Therapy & Comparative Criminology, 54*, 895-914. doi:10.1177/0306624x09347732

Blumenthal, S., Gudjonsson, G., & Burns, J. (1999). Cognitive distortions and blame attribution in sex offenders against adults and children. *Child Abuse and Neglect, 23*(2), 129-143. doi: 10.1016/S0145-2134(98)00117-3

Briere, J. & Runtz, M. (1989). University males' sexual interest in children: Predicting potential indices of „pedophilia" in a nonforensic sample. *Child Abuse and Neglect, 13*(1), 65-75. doi: 10.1016/0145-2134(89)90030-6

Carr, A. (2006). *Internet censorship offending: A preliminary analysis of the social and behavioural patterns of offenders* (Doctoral dissertation). Retrieved from http://epublications.bond.edu.au/theses/carr/

DeLong, R., Durkin, K., & Hundersmarck, S. (2010). An exploratory analysis of the cognitive distortions of a sample of men arrested in internet sex stings. *Journal of Sexual Aggression, 16*(1), 59-70. doi: 10.1080/13552600903428235

D'Ovidio, R., Mitman, T., El-Burki, I. J., & Shumar, W. (2009). Adult-child sex advocacy websites as social learning environments: A content analysis. *International Journal of Cyber Criminology, 3*(1), 421-440. Retrieved from http://www.cybercrimejournal.com/robertetaljan2009.htm

Durkin, K. & Bryant, C. (1999). Propagandising pederasty: A thematic analysis of the online exculpatory accounts of unrepentant paedophiles. *Deviant Behavior: An Interdisciplinary Journal, 20*(2), 103-127. doi: 10.1080/016396299266524

Elliott, I. A., Beech, A. R., & Mandelville-Norden, R. (2012). Psychological profiles of internet, contact, and mixed internet/contact sex offenders. *Sexual Abuse: A Journal of Research and Treatment* [Online First Publication]. doi: 10.1177/1079063212439426

Elliott, I. A., Beech, A. R., Mandelville-Norden, R., & Hayes, E. (2009). Psychological profiles of internet sex offenders: Comparisons with contact sex offenders. *Sexual Abuse: A Journal of Research and Treatment, 21*(1), 76-92. doi: 10.1177/1079063208326929

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London, UK: Sage.

Friestad, C. (2011). Making sense, making good, or making meaning? Cognitive distortions as targets of change in offender treatment. *International Journal of Offender Therapy and Comparative Criminology, 56*(3), 465 – 482. doi: 10.1177/0306624X11402945

Gannon, T. A. (2009). Current cognitive distortion theory and research: An internalist approach to cognition. *Journal of Sexual Aggression, 15*(3), 225-246. doi: 10.1080/13552600903263079

Gannon, T. A., Keown, K., & Polaschek, D. L. L. (2007). Increasing honest responding on cognitive distortions in child molesters: The Bogus Pipeline revisited. *Sexual Abuse: A Journal of Research and Treatment, 19*(1), 5-22. doi: 10.1177/107906320701900103

Gannon, T. A. & O'Connor, A. (2011). The development of the Interest in Child Molestation Scale. *Sexual Abuse: A Journal of Research and Treatment, 23*(4), 474-493. doi: 10.1177/1079063211412390

Gannon, T. & Polaschek, D. (2005). Do child molesters deliberately fake good on cognitive distortion questionnaires? An information processing-based investigation. *Sexual Abuse: A Journal of Research and Treatment, 17*(2), 183-300. doi: 10.1177/10790632050170020

Gannon, T. A. & Polaschek, D. L. L. (2006). Cognitive distortions in child molesters: A re-examination of key theories and research. *Clinical Psychology Review, 26*, 1000 – 1019.

Gray, N. S., Brown, A. S., MacCulloch, M. J., Smith, J., & Snowden, R. J. (2005). An Implicit Test of the Associations between children and sex in pedophiles. *Journal of Abnormal Psychology, 114*(2), 304-308. doi: 10.1037/0021-843X.114.2.304

Hanson, R. K., Gizzarelli, R., & Scott, H. (1994). The attitudes of incest offenders: Sexual entitlement and acceptance of sex with children. *Criminal Justice and Behavior, 21*(2), 187-202. doi: 10.1177/00938

54894021002001

Hayes, E. & Middleton, D. (2006). *Internet Sexual Offending Treatment Programme (i-SOTP): Theory Manual.* Westminster, UK: National Offender Management Service.

Hermann, C. A., Babchishin, K. M., Nunes, K. L., Leth-Steensen, C., & Cortoni, F. (2012). Factor structure of the Bumby Rape Scale: A two-factor model. *Criminal Justice and Behavior, 39*(7), **869-886. doi:** 10.1177/0093854812436802.

Holt, T. J., Blevins, K. R., & Burkert, N. (2010). Considering the paedophile subculture online. *Sexual Abuse: A Journal of Research and Treatment, 22*(1), 3-24. doi: 10.1177/1079063209344979

Howitt, D. & Sheldon, K. (2007). The role of cognitive distortions in paedophilic offending: Internet and contact offenders compared. *Psychology, Crime and Law, 13*(5), 469-486. doi: 10.1080/10683160601060564

Johnson, R. A. & Wichern, D. W. (2002). *Applied multivariate statistical analysis (5th ed.).* New Jersey, NJ: Prentice Hall.

Keown, K., Gannon, T. A., & Ward, T. (2010). What's in a measure? A multi-method study of child sexual offenders' beliefs. *Psychology, Crime & Law, 16*, 125-143. DOI:10.1080/10683160802622022

Kolton, D. J. C., Boer, A., & Boer, D. P. (2001). A revision of the Abel and Becker Cognition Scale for intellectually disabled sex offenders. *Sexual Abuse: A Journal of Research and Treatment, 13*(3), 217-219. doi: 10.1177/107906320101300306

Langevin, R. (1991). A note on the problem of response set in measuring cognitive distortions. *Annals of Sex Research, 4*, 287 - 292.

Mann, R., & Beech, A. (2003). Cognitive distortions, schemas, and implicit theories. In T. Ward, D. R. Laws & S. M. Hudson (Eds.), *Sexual deviance: Issues and controversies* (pp. 135-153). London, UK: Sage.

Marshall, W. L., Hamilton, K., & Fernandez, Y. (2001). Empathy deficits and cognitive distortions in child molesters. *Sexual Abuse: A Journal of Research and Treatment, 13(2),* 123 -130. doi: 10.1023/A:1026652321327

Marshall, W. L., Marshall, L. E., & Kingston, D. (2011). Are the cognitive distortions of child molesters in need of treatment? *Journal of Sexual Aggression: An International, Interdisciplinary Forum for Research, Theory, and Practice, 17*(2), 118-129. doi: 10.1080/13552600.2011.580572

Maruna, S., & Mann, R. E. (2006). A fundamental attribution error? Rethinking cognitive distortions. *Legal and Criminological Psychology, 11*, 155-177. doi: 10.1348/135532506X114608

Merdian, H. L., Boer, D. P., Thakker, J., Wilson, N., & Curtis, C. (in press). "So why did you do it?" Explanations provided by child pornography offenders. *Journal of Sex Offender Therapy*.

Merdian, H. L., Curtis, C., Thakker, J., Wilson, N. & Boer, D. P. (2011). The three dimensions of online child pornography offending. *Journal of Sexual Aggression* [OnlineFirst Publication] doi:10.1080/13552600.2011.611898

O'Brien, M. D. & Webster, S. D. (2007). The construction and preliminary validation of the Internet Behaviours and Attitudes Questionnaire (IBAQ). *Sexual Abuse: A Journal of Research and Treatment, 19*(3), 237-256. doi: 10.1007/s11194-007-9057-0

Ó Ciardha, C. & Gannon, T. (2011). The cognitive distortions of child molesters are in need of treatment. *Journal of Sexual Aggression: An International, Interdisciplinary Forum for Research, Theory, and Practice, 17*(2), 130-141. doi: 10.1080/13552600.2011.580573

O'Halloran, E. & Quayle, E. (2010). A content analysis of a "boy love" support forum: Revisiting Durkin and Bryant. *Journal of Sexual Aggression, 16*(1), 71-85. doi: 10.1080/13552600903395319

Quayle, E. & Taylor, M. (2001). Child seduction and self-representation on the internet. *CyberPsychology and Behavior, 4*(5), 597-608. doi: 10.1089/109493101753235197

Quayle, E. & Taylor, M. (2003). Model of problematic internet use in people with a sexual interest in children. *CyberPsychology and Behavior, 6*(1), 93-106. doi: 10.1089/109493103321168009

SAS Library (1995). *Factor analysis using SAS PROC FACTOR.* Retrieved from http://www.ats.ucla.edu/stat/sas/library/factor_ut.htm

Sheldon, K. & Howitt, D. (2007). *Sex offenders and the internet.* Chichester, UK: West Sussex.

Snowden, R. J., Craig, R. L., & Gray, N. S. (2011). Indirect behavioural measures of cognition among sexual offenders. *Journal of Sex Research, 48*(2-3), 192-217. doi: 10.1080/00224499.2011.557750

Stermac, L. & Segal, Z. (1989). Adult sexual contact with children: An examination of cognitive factors. *Behavior Therapy, 20*(4), 573-584. doi: 10.1016/S0005-7894(89)80135-2

Tierny, D. W. & McCabe, M. P. (2001). An evaluation of self-report measures of cognitive distortions and empathy among Australian sex offenders. *Archives of Sexual Behavior*, *30*(5), 495-519.

Ward, T. & Beech, A. (2006). An integrated theory of sexual offending. *Aggression and Violent Behaviour, 11*(1), 44-63. doi: 10.1016/j.avb.2005.05.002

Ward, T. & Keenan, T. (1999). Child molesters' implicit theories. *Journal of Interpersonal Violence, 14*(8), 821-838. doi: 10.1177/088626099

014008003

Table 1: Characteristics of the Offender Samples

Demographics	Total n = 68	CSEMOs n = 22	CSOs n = 29	MOs n = 17	sign. Differences
Age (yrs)	*M=43.43*	*M=41.82*	*M=41.29*	*M=45.56*	
	SD=13.2	*SD=14.5*	*SD=7.86*	*SD=13.2*	
	Mdn=42.5	*Mdn=39.5*	*Mdn=42*	*Mdn=44.5*	
Ethnicity					
NZ Europ.	*57.35*	*77.27*	*41.38*	*58.82*	*Maori:*
Maori	*27.94*	*4.55*	*44.83*	*29.41*	*CSOs > CPOs*
Pacific Isl.	*1.47*	*4.55*			
Other	*7.35*	*9.09*	*6.9*	*5.88*	
Education (yrs)	*M=9.69*	*M=11.62*	*M=7.87*	*M=9.69*	*CPOs > CSOs*
	SD=5.29	*SD=5.18*	*SD=5.12*	*SD=4.09*	
	Mdn=10	*Mdn=12*	*Mdn=8*	*Mdn=9.5*	
Annual income (NZ$)[a]	*M=34,414*	*M=37,565*	*M=22,248*	*M=49,454*	*CPOs > CSOs, MOs > CSOs*
	SD=23,588	*SD=15,222*	*SD=19,419*	*SD=30,982*	
	Mdn=31,000	*Mdn=36,000*	*Mdn=19,000*	*Mdn=50,000*	
Unemployed	*16.18*	*9.09*	*24.14*	*11.76*	
Own business	*23.53*	*27.27*	*20.69*	*23.53*	
Relationship Status and Sexual Preference					
Sex. Preference					
Females	*73.53*	*86.36*	*72.41*	*58.82*	
Males	*16.18*	*9.09*	*20.69*	*17.65*	
Both	*10.29*	*4.55*	*6.9*	*23.53*	
Current partner					
Sexual	*30.88*	*36.36*	*20.69*	*41.18*	
Live-in	*25*	*31.82*	*13.79*	*35.29*	
Stable partner					
None	*27.94*	*36.36*	*27.39*	*17.65*	
1	*23.53*	*18.18*	*24.14*	*29.41*	
2	*20.59*	*18.18*	*20.69*	*23.53*	

3+	*27.94*	*27.27*	*27.59*	*29.41*	
Own children	*52.94*	*40.91*	*51.72*	*70.59*	
Criminal activities					
In prison	*54.41*	*4.55*	*89.66*	*58.82*	*CSOs > CPOs*
Sex offending					
Adult victim					
Current	*10.29*		*20.69*	*5.88*	
Previous	*5.88*		*10.34*	*5.88*	
> 1	*5.88*		*10.34*	*5.88*	
Minor victim					
Current	*54.41*		*89.66*	*64.71*	
Previous	*35.29*		*58.62*	*41.18*	
> 1	*41.18*		*55.17*	*70.59*	

Note. Figures denote percentage scores if not labelled otherwise.

[a]Outliers removed.

Table 2: Percentage agreeing/strongly agreeing with cognitive distortions and factor loadings on the extracted components

Item	Cognitive Distortion Items	% Agreement	Principal Components						
			1	2	3	4	5	6	7
10	Most children 13 (or younger) would enjoy having sex with an adult, and it wouldn't harm the child in the future.	8.82	.760						
17	An adult fondling a young child or having the child fondle the adult will not cause the child any harm.	5.88	.745						
24	If a child has sex with an adult, the child will look back at the experience as an adult and see it as a positive experience.	5.88	.733		.421				
3	A child 13 or younger can make her (his) own decision as to whether she (he) wants to have sex with an adult or not.	14.71	.710						
15	I show my love and affection to a child by having sex with her (him).	11.76	.707	.403					
1	If a young child stares at my genitals it means the child likes what she (he) sees and is enjoying watching my genitals.	13.24	.637						
12	Sometimes in the future, our society will realize that sex between a child and an adult is all right.	7.35	.635						
11	Children don't tell others about having sex with a parent (or other adult) because they really like it and want it to continue.	8.82	.629		.392				
23	My relationship with daughter (son) or other child is strengthened by the fact that we have sex together.	5.88	.609	.425					
7	Having sex with a child is a good way for an adult to teach the child about sex.	5.88	.602	.460	.425				
14	An adult just feeling a child's body all over without touching her (his) genitals is not really being sexual with the child.	11.76	.591					.403	

Commented [hlm1]:
Reviewer 1: Change sorting according to component loadings rather than agreement
Response: see changes

21	If an adult has sex with a young child it prevents the child from having sexual hang-ups in the future.	2.94	.569	.414	.489	
32	Sexual thoughts about a child are not that bad because it does not really hurt the child.	19.12	.544			.493
2	A man is justified in having sex with his children or step-children, if his wife doesn't like sex.	1.47		.819		
4	A child who doesn't physically resist an adult's sexual advances, really wants to have sex with the adult.	11.76		.597		.436
9	When a young child has sex with an adult, it helps the child learn how to relate to adults in the future.	2.94	.518	.564		
5	If a 13 year old (or younger) child flirts with an adult, it means he (she) wants to have sex with the adult.	13.24	.430	.535	.406	.399
16	It's better to have sex with your child (or someone else's child) than to have an affair.	0.00		.766		
20	When a young child asks an adult about sex, it means she (he) wants to see the adult's sex organs or have sex with the adult.	4.41			.676	
18	A child will never have sex with an adult unless the child really wants to.	11.76	.478		.669	
8	If I tell my young child (step-child or close relative) what to do sexually and they do it, that means they will always do it because they really want to.	13.24		.490	.610	
26	When children watch an adult masturbate, it helps the child learn about sex.	11.76	.546		.605	
34	Children who are molested by more than one adult probably are doing something to attract adults to them.	13.24			.406	

13	An adult can tell if having sex with a young child will emotionally damage the child in the future.	41.18			.782		
27	An adult can know just how much sex between him (her) and a child will hurt the child later on.	26.47			.773		
36	Sometimes the offender suffers, loses or is hurt the most.	22.06			.736		
31	Some people who have sex with children are not true “sex offenders” – they are out of control and make a mistake.	22.06			.728		
35	For many men, sex offences against children are the result of stress and the offence helped to relieve the stress.	30.88			.450		
30	Because men have higher sexual needs, it is not always possible to control sexual urges.	19.12			.448	.422	
28	If a person is attracted to sex with children, he (she) should solve that problem themselves and not talk to professionals.	5.88				.821	
29	There is no effective treatment for child molestation.	10.29				.702	
22	When a young child walks in front of me with no or only a few clothes on, she (he) is trying to arouse me.	4.41		.426		.574	
33	Just looking at a naked child is not as bad as touching and will probably not affect the child as much.	23.53	.515			.521	
39	A person should have sex whenever it is needed.	16.18					.631
25	The only way I could do harm to a child when having sex with her (him) would be to use physical force to get her (him) to have sex with me.	17.65					.584
38	Children are supposed to do what adults want and this might include serving their sexual needs.	4.41					.523
37	I feel more comfortable with children than adults.	23.53	.470				.494

6	Sex between a 13 year old (or younger child) and an adult causes the child no emotional problems.	5.88	.402	.468	
19	My daughter (son) or other young child knows that I will still love her (him) even if she (he) refuses to be sexual with me.	27.94			.810

Table 3: Seven-Component Structure Resulting from Principal Component Analysis on Cognitive Distortion Items

Components						
1	2	3	4	5	6	-
Sexual Objecti-fication of Children	Justifi-cation	Children as Sexual Agents	Denial of Sex Offender Status	Emphasis on Cognitive Element	Power	
Dis01	Dis02	Dis08	Dis13	Dis22	Dis06	Dis19
Dis03	Dis04	Dis18	Dis27	Dis28	Dis25	
Dis07	Dis05	Dis20	Dis30	Dis29	Dis37	
Dis10	Dis09	Dis26	Dis31	Dis33	Dis38	
Dis11	Dis16	Dis34	Dis35		Dis39	
Dis12			Dis36			
Dis14						
Dis15						
Dis17						
Dis21						
Dis23						
Dis24						
Dis32						
% Explained variance:						
21.46	11.51	10.92	9.88	9.25	7.13	4.98
Cronbach's alpha:						
.960	.885	.894	.844	.756	.820	

Note. Component labels are the result of a discussion between the researcher and three independent sources, that is, a layperson and two researchers experienced in the area of sexual crimes.