Scoring Guide for the Child Pornography Offender Risk Tool (CPORT): Version 2

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Includes Scoring for CPORT and CASIC

The information in this document is based on the CPORT development sample and the recent validation sample. It is subject to change over time, as more research is conducted in this area and greater knowledge acquired. Part of the purpose of this guide is to provide greater detail about the development and applied use of CPORT; we recommend you review and become familiar with this information prior to using the CPORT in research or practice. This version is an update of the original scoring guide, dated December 15, 2016. In this revision we include recent validation data, additional and updated scoring information as well as further our discussion regarding the interpretation of scores. To distinguish this version from any future versions, the current document date is: **20 June 2018.**

This document and any future updates we are involved in will be available at the CPORT project page on ResearchGate: https://www.researchgate.net/project/Child-Pornography-Offender-Risk-Tool-CPORT

We have also posted FAQs on the CPORT project page. While we will endeavor to add new work to the CPORT project page, it is just one resource; remaining current in the related fields (sexual offending, child sexual exploitation, risk assessment) is an individual's responsibility.

We thank other researchers and clinicians for allowing us to post their work relating to CPORT, including the translations into Dutch (Wilpert, Smid, & Wever, 2018) and Spanish (Soldino & Carbonell, 2018). Please direct questions or interest in using these translations with the authors.

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INTRODUCTION

Individuals involved in accessing, sharing, and/or producing child sexual exploitation material are increasingly being seen in clinical and criminal justice settings (see Seto, 2013). An important question facing decision makers is the risk that these individuals might pose to commit further sexual offences (i.e., sexual recidivism, typically defined as new arrests, new charges, or new convictions for sexual crimes, based on official records). A better understanding of risk assists with risk management strategies including sentencing, institutional placement, treatment and supervision decisions.

A meta-analysis of 9 recidivism studies found that approximately 5% of 2,630 online (mostly child pornography) offenders were known to have committed a new sexual offence of some kind during a follow-up period ranging from 1.5 to 6 years; 2% committed a contact sexual offence and 3% committed a new child pornography offence (Seto, Hanson & Babchishin, 2011). Recidivism studies published since the meta-analysis continue to report similar rates of sexual reoffending (Table 1):

Table 1. Sample recidivism data, post Seto, Hanson, & Babchishin (2011)

Authors	Location	Sample Size	Description of Sample	Follow-up Time	Sexual Recidivism
Aebi, Plattner, Ernest, Kaszynski, & Bessler (2014)	Switzerland	54	Males, youth (10 to 18 years of age), convicted of CP.	2.95 years (*SD* = 1.45)	1.9% - new sexual offence charges
Eke, Helmus, & Seto (in press)	Canada	346	Males, convicted of CP. 266 child pornography with no contact sexual offending 80 dual (also had a contact sex offence)	Five year fixed follow-up	New sexual offence charges 11.6% (full sample) 8.2% (those without contact sexual offences) 25.4% (dual offenders)
Faust, Bickart, Renaud, & Camp (2015)	USA	428	Males, served a federal sentence for CP and no known contact sex offending	4.8 years (*SD* = 1.5)	3.0% had a re-arrest for sex offence with a targeted victim 1.6% had a re-arrest for a child pornography offence
Goller, Jones, Dittman, Taylor, & Graf (2016)	Switzerland	4612	National cohort study, convictions for illegal pornography (most were for child pornography). 4249 illegal pornography only. 363 dual (also had a contact sex offence)	3, 5 and 10 year reconviction rates	10 year reconviction rates for contact sexual offending. 0.5% (illegal pornography group) 6.4% (dual group)
Krone & Smith (2017)	Australia	152	Males. Convicted of at least one child sexual exploitation offence.	3.5 years (median) post-conviction	6.6% any sexual reoffence.

The highest rates of recidivism are evident in our own work (12% any new sexual offending) and may reflect access to official data including both National conviction data as well as arrest data provided from partner police services. *Dual offenders*, those with a history of both child pornography and contact sexual offending, demonstrate the highest rates of recidivism (e.g., Eke, Helmus & Seto, in press; Goller, Jones, Dittman, Taylor & Graf, 2016).

Data on future offending is not the same as evidence of a contact sexual offending history. In our samples, some individuals were charged with previously undetected (historical) contact sexual offences against children; additional individuals were suspects in prior contact sexual abuse cases. As well, approximately half of individuals identified as having no prior reported contact sexual offences self-report committing such

offences against children (e.g., see Bourke et al., 2014, and Seto, et al., 2011). Of interest will be methods or tools that help identify those most likely to have previous unidentified, undetected contact sexual offence(s). This is important in police investigations, considerations for victim identification and may also assist our understanding of future risk for offending. Researchers in the United Kingdom developed the Kent Internet Risk Assessment Tool (KIRAT; Long, Alison, Tejeiro, Hendricks, & Giles, 2016) to assist police in prioritizing suspects involved with indecent images of children by identifying those who were more likely to have *already committed* a contact sexual offence. As previously indicated however, this is not the same task as identifying those who are at higher risk of recidivism, that is, offending in the future.

The current work involves those detected for offending. Contact sexual offending history appears to be relevant to the risk that a person involved with child pornography will commit a contact sexual offence in the future. However, it is not equivalent; not all individuals who have committed a contact sex offence (who by definition, have a contact sexual offending history) go on to commit additional contact sexual offences (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). As well, some individuals with no known prior contact sexual offending history will go on to commit a (detected) contact sexual offence, post-conviction.

Being involved with child pornography content (accessing, possessing, distributing, producing) as well as committing other sexual offences with children may be evidence of the extent of an individual's sexual preference for children (pedophilia[1]; Seto, Cantor & Blanchard, 2006). Other factors could also help explain who will continue or persist in offending, particularly indicators of antisocial tendencies or criminality such as criminal history, attitudes and beliefs, and antisocial personality traits.

Previous research has shown that some well-established criminological factors such as a person's age and having a prior criminal history are associated with sexual recidivism among individuals involved with child pornography (Eke, Seto, & Williams, 2011) and that the modification of current risk assessments developed for those with contact sexual offences could also work (e.g., see information regarding the RM2000 in Wakeling, Howard, & Barnett, 2011, and Eke & Seto, 2012). However, it was not until recently that a child pornography offender specific risk assessment tool, the CPORT, was developed.

Another consideration in the development of relevant risk tools and guides comes from research with various professionals working in the area of child pornography and contact sexual offending against children; a number of barriers exist to the communication and sharing of information between stakeholders regarding general educational information as well as material related to a specific case (e.g., see Glasgow, 2012; Martin, 2016; Martin & Slane, 2015)[2]. A goal is risk-informed collaborative interventions that are not solely about predicting outcomes, but are also about identifying priorities for intervention and acting as a first step in individual risk management. Information collected using such tools is also valuable for providing information for further research, with larger samples and longer follow-ups – perhaps particularly important in the area of child pornography as we do not yet have well validated tools for use by practitioners in a range of assessment situations or for different groups of individuals who have committed child pornography offences.

The current document describes the development of the *Child Pornography Offender Risk Tool* (CPORT, pronounced "seaport"; Seto & Eke, 2015), a risk assessment tool designed to predict any sexual

[1] Pedophilia is clinically defined as a sexual attraction to prepubescent children (American Psychiatric Association, 2013; World Health Organization, 2015).

[2] Some of these barriers are perhaps not uncommon in the risk assessment area more generally; in response to a need for standardized and consistent collection and sharing of risk factor information by police as part of their initial investigation in cases of intimate partner violent, the province of Ontario (Canada) created the Domestic Violence Risk Management (DVRM) guide.

recidivism (which could include new contact or non-contact sexual offences, as well as child pornography recidivism) among adult male offenders with a conviction for a child pornography offence. We have also added the recent validation research to this document and provide data based on the combined samples (Eke, Helmus & Seto, in press). At this time, the CPORT may be useful for ranking offenders according to risk score (rather than using probabilistic estimates). In this revision, we further our discussion regarding the interpretation of scores, including the use of percentiles and risk levels (see page 30).

The CPORT does not include all relevant risk factors relating to child pornography and sexual offending. It was developed using the available data from a sample of men convicted of child pornography offences, and therefore other factors could not be examined. For example, phallometrically-assessed sexual arousal to children is a strong predictor of sexual recidivism among identified sex offenders, but we did not have this information in the development of the CPORT. There is a variety of research underway examining the use of the CPORT across a range of assessment situations, in conjunction with other tools (e.g., Stable 2007), in comparison to other tools (e.g., Static 99R) and using data collected at different time periods (e.g., post-conviction) or in different geographic areas.

In this document, we also outline additional information that may be gathered from a child sexual exploitation investigation and helpful in other considerations, for example, contextual information can be useful in the application and implementation of management strategies when used in conjunction with structured risk assessment (e.g., see Kroner, Gray, & Goodrich, 2013; Mills, Kroner, & Morgan, 2011). Overall, the goals for the document are to:

1) **Serve as an investigative guide, to allow for information collection from a police investigation and provide an overview of the child sexual exploitation case.**
2) **Identify factors for consideration by police, supervisors, prosecutors, and other stakeholders involved in these cases, for risk considerations, treatment planning and assessing an individual's needs, as well as case management.**
3) **Provide the ability to collect information and prioritize cases using the CPORT.**
4) **Provide the ability to consider factors that appear related to sexual interest in children (e.g., CASIC).**
5) **Collect information that could support further research in this area.**

Definitions

Child pornography: For the research, the legal definition for *child pornography* in Canada was applied. The development sample was comprised of individuals who had been convicted of accessing, possessing, distributing and/or producing child pornography, which involved either children engaged in, or depicted as engaged in, sexual acts or material in which the dominant characteristics included sexual organs or the anal region of a child. Visual representations (e.g., photos, drawings, paintings, video, cartoon, animation), audio material, and text stories describing sex with children or advocating sex with children are included in the Canadian legal definition of child pornography and therefore in our research definition.

Nudity: In our research, *nudity* was defined as imagery where the dominant characteristics were not the sexual organs or anal regions of a child, but the child was unclothed. Many individuals involved with child pornography also have nude images of children (e.g., see Seto & Eke, 2015) and such images may be

important in the fantasies of indiviuals (e.g., Lanning, 2010). The cases included in our samples had a description of any nude images and may also have included a count of the images involving nudity, often provided from police categorization software. In some of our cases, the nudity and other child material was more extensive than the child pornography.

Other child material: Those with a sexual interest in children may also collect or access clothed or partially clothed images of children (e.g., images of children in bathing suits). Again, this may be part of their sexual fantasies or might reflect emotional fixation on children (Lanning, 2010; Seto, 2013). In our experience with police investigation case files, an individual may have images of children they have self-produced from parks or other places children gather and they may also collect content from publications (e.g., clothing catalogues, child celebrity images) or record television shows with children as the main focus. In some of our cases, the nudity and other child material was more extensive than the child pornography.

In summary, depictions of children who are clothed or partially clothed may meet the definition of child pornography if the dominant characteristic is the depiction, for a sexual purpose, of the sexual organs or anal region of a child; absent a sexual purpose or dominant characteristic, nudity or other child material is not illegal. As well, any visual representation is included, therefore computer generated images and videos of children (the latter more common in recent cases, as animation software continues to evolve) could fit the definition of child pornography depending on what is depicted. We discuss this again on page 10 in relation to the criteria for scoring CPORT.

Although child pornography is the legal term in Canada, the United States, and many other jurisdictions, we prefer the term *child sexual exploitation material (CSEM)* to capture the nature of the content and the criminal behaviour involved. We mainly use *child pornography* in this document to be consistent with the legal term.

Overview of the CPORT Development, Validation and Combined Samples

In our development study, Seto and Eke (2015), we examined a sample of 286 adult males with child pornography offences in Canada, all of whom were convicted of at least one count of possession (over 90%), accessing (21%), distribution (37%), or production[3] (23%) of child pornography. A fifth (21%) of the sample had a contact sex offence against a child that was either part of their criminal history or a charge at the time of their index child pornography charge. The CPORT was developed in a sub-sample of 266 individuals followed for a fixed five year period of opportunity.

Information about potential risk factors was obtained through careful review of police case files, comprising: individual demographic characteristics, criminal history, substance use; child pornography content; other child related content; other pornography; and online behaviour. These potential risk factors were selected on the basis of prior research (e.g., prior work showing that a person's age and criminal history were relevant) or speculations about aspects of digital content and online behaviour. For example, it has been speculated that individuals with larger collections of child pornography or higher ratios of child pornography relative to other pornography might be more likely to have pedophilic sexual interests, and thus might be at risk for further child pornography offences or contact sexual offences involving children. Recidivism information was obtained through a check of national criminal records and examination of police service reports regarding new criminal charges. Recidivism was counted from the index charge onwards, including new offences committed

[3] Under Canadian case law, production can include recording child sexual abuse the offender commits, taking images over a webcam, or altering an image to make a new image by morphing, e.g., placing a known child's face on a stranger's body.

while awaiting trial or sentencing but excluding new charges for historical sexual offences[4]. Only new offences that became known to police and resulted in criminal charges could be counted.

In the development sample, we compared recidivism across groups: 1) the full sample, 2) individuals with child pornography and no other offending history, 3) those with other offending but no contact sexual offending and, 4) individuals with child pornography who had a contact sexual offence history. The rate of any new offending was 39% for the full sample, 24% for those with only child pornography offences, 49% of those with other offending but no contact sexual offending and 54% for those with a known contact sexual offence. Sexual recidivism (contact or non-contact) was 16% for the full sample, however compared with individuals who had a contact sexual history (28%) it was significantly lower among individuals with no other offending history (12%) and those with other offending but no contact sex offending history (13%). More details are available in Seto and Eke (2015) and in presentations given by the authors.

In our five-year fixed follow-up period, 29% of the sample committed a new offence of any kind. Eleven percent committed a new sexual offence, with 3% committing a new contact sexual offence against a child (17 years of age or younger) and 9% committing a new child pornography offence. **Our analyses identified seven variables that were associated with a greater likelihood of any sexual recidivism (descriptions of items begin on page 13).** In order to increase ease-of-use, items were simply scored as present/true or absent/false, for a total possible score ranging from 0 to 7. In our 5-year fixed follow-up sample of 266 individuals involved with child pornography, the mean CPORT score was 1.94 (*SD* = 1.57, 95% CI = 1.74 - 2.12, range 0 – 7).

We examined the predictive accuracy of the CPORT in an independent but geographically similar sample of 86 men (80 men with 5-year recidivism data) convicted of a child pornography offence (Eke, et al., in press). We had access to similar information as in the development sample, with a few exceptions: We did not review videotaped police interviews and we did not access and categorize the child content ourselves. These exceptions perhaps more closely reflected the type of information users would have access to via police reports and court documents. Overall, the CPORT performed similarly in the validation sample; we combined the development and validation samples to provide greater statistical power, resulting in a combined sample of 346 men with five years of recidivism data.

In the combined sample, we divided individuals into two groups based on offence history: (1) The *child pornography non-contact group* (CP/NC; *n* = 279) consisted of individuals without a contact sexual offence history and; (2) The mixed group or *child pornography contact group* (CP+C; *n* = 67), these individuals had both child pornography and contact sexual offences in their records.

These groups are different than the original ones created in the development sample because we did not separate individuals with child pornography offences who had no other types of offending. Instead, we grouped them together with individuals with other (but not contact sexual) offending. We did this for a few reasons. Overall, this subgroup is lower in general criminality (a well-established risk dimension for all offenders) that receives lower scores on the CPORT than the same person with a contact criminal history and concomitantly has lower recidivism rates. Further, while individuals with child pornography offences and a contact sex offending history can be assessed for risk of sexual recidivism using other sex offender risk scales, there are no risk scales designed to assess risk of sexual recidivism among individuals with a noncontact sexual history or a nonsexual offence history. Therefore, this subgroup was combined as they are both in need

[4] New charges that arose from reports of past undetected offending (offences that occurred prior to the index offence) were excluded from recidivism counts. In Seto and Eke (2015, p. 423) we reported that nine offenders had a new charge for a historical contact sexual offence (all against children).

of a risk scale for sexual recidivism, and combining them retains variability in general criminality as a relevant risk domain.

Not all individuals involved with child pornography and have no other types of offending rank similarly in terms of risk to reoffend; for example, an individual could be at greater risk because of a prior child pornography offence, indication of sexual interest in children, or a preference for child material depicting boys. Future research that includes additional psychologically meaningful variables (e.g., psychopathy, emotional dysregulation) could better inform our understanding of risk among those with little or no other criminal history.

An original goal in the development of the CPORT was to assist in the prioritization of cases for police and other criminal justice professionals as well as gathering information relevant to offending that could be important for case management, supervision, and prioritizing treatment goals. Based on our research to date, the CPORT can be helpful for ranking individuals. We are sometimes asked about the use of the probability estimates of sexual recidivism based on CPORT scores (the table reported in Eke et al., in press includes the development, validation and combined information and is partially included for reference in this document on page 27). The generalizability or stability of these estimates in other groups is not yet known; the CPORT still does not have the extensive validation and calibration found with more established tools such as the Static-99R: see www.static99.org). We encourage evaluators to be cautious when deciding how to report CPORT scores. CPORT may be useful to rank order individuals in their risk for recidivism, allowing prioritization of resources, as well as the sharing of item information. It is preferable to communicate risk without referring to the recidivism probabilities reported in the original article (Seto & Eke, 2015) or the validation article (Eke, et al., in press). If, an evaluator deems it necessary to comment on absolute risk of sexual recidivism, they should be extremely cautious in reporting the estimates, noting that much larger sample sizes will be needed to produce more reliable and credible recidivism estimates. This will come with more research. See page 26 for additional comments and our FAQ posted on the ResearchGate page for sample reports. To further assist in the sharing of information using CPORT scores we discuss the conversion of CPORT scores into percentiles and risk levels and starting on page 30.

In the CPORT, admission of sexual interest in children is a risk factor for predicting any sexual recidivism. The concern with this type of item is its vulnerability to faking or refusal to respond, especially in high-stakes situations such as being investigated for child pornography offences, sentencing and so forth. This led to our interest in potential correlates of sexual interest in children (Eke & Seto, 2013) and the development of a 6-item scale we called the *Correlates of Admission of Sexual Interest in Children Scale* (CASIC; Seto & Eke, 2017). Further, we also explored the impact of using alternate definitions for the CPORT item that assesses admitted or diagnosed pedophilic interests (e.g., online admissions to others, search criteria). In the current document, we describe both the CASIC as well as the collection of additional information that could provide context or a better understanding of an individual's sexual interest in children.

The CPORT is free and noncommercially (publicly) available. Its development is described in a peer-reviewed journal article (Seto & Eke, 2015) that first appeared online in April 2015. We provide details of CPORT in this current document as well as on the CPORT ResearchGate project page (https://www.researchgate.net/project/Child-Pornography-Offender-Risk-Tool-CPORT).

The CASIC is free and noncommercially (publicly) available. Its development is described in a peer-reviewed journal article (Seto & Eke, 2017). We provide details of the CASIC scale in this current document as well as on the CPORT ResearchGate project page (see link above).

We have been asked to provide presentations on the development and scoring of CPORT and CASIC and have provided talks across various groups and stakeholders. Those interested in such presentations can contact any of the three of us for more information. Since the publication of CPORT and CASIC we have also kept track of frequently asked questions that arise from users and readers of the scoring manual and related documents; in December 2017, we posted the first version of an FAQ document outlining questions and our responses to those questions.

CPORT Coding Instructions and Item Background Information

Item descriptions and examples are from the development and validation samples. In our research, we focused on information that we believed could be coded from police investigation files, while keeping in mind what would likely be available to other professionals as well.

In this document, we describe the items and how they were coded, as well as provide examples of what would meet (and in some cases, not meet) the item. We briefly discuss some of the possible psychological or criminological meaningfulness of each item. We also provide some additional sample data related to each item (e.g., correlated variables) for those interested in conducting research with CPORT.

Items are scored dichotomously for ease of use and because exploration of more complicated weightings did not remarkably increase predictive accuracy. Consistent with the larger contact sex offender risk assessment literature, CPORT items appear to represent two risk dimensions (see Seto, 2013), the first group of items relating more to antisociality/criminality and the remaining items relating to sexual interest in children.

If you are going to use the scale in practice, it is important to adhere to how the item was defined in the research data, as described in this manual, any training as well as in our FAQ document. The further the scoring deviates from these definitions, the further your score is from the empirical support for the scale.

Criteria for Scoring CPORT and Using it to Prioritize Cases

1) *Adult male*: The development sample was comprised entirely of men convicted of child pornography offences. The generalizability or validity of these results to women or juvenile offenders is unknown.

2) *Convicted of a child pornography offence*: The development study was comprised of cases where the individual was convicted (none successfully appealed) of one or more child pornography offences.

As stated earlier, we used the legal definition for *child pornography* in Canada. Not all countries have the same definitions. CPORT can be used with individuals convicted of similar child pornography offences, specifically: accessing, possessing, distributing and/or producing material (any visual depiction, text etc) which involve either children engaged in, or depicted to engage in, sexual acts or material in which the

dominant characteristics included the sexual organs or anal regions of a child. Our definition is broader than some other countries because the Canadian legal definition of child pornography includes depictions of fictional children (e.g., stories, anime). In Canada, images of nude or partially dressed children where there is no sexual activity and no focus on the sexual organs or anal region of a child are not illegal. A conviction solely for possession of content depicting child nudity in another country (e.g., under obscenity legislation) would not fit the criteria for using CPORT.

One question that might arise is whether CPORT can be used with individuals who have been charged and are still involved in criminal proceedings (e.g., for use at a bail hearing). While there is reason to believe that CPORT would work similarly prior to conviction as it does post-conviction (e.g., the data used to score CPORT relates to prior criminal history or information available during the investigation but not post-conviction information, recidivism was collected from charge onwards) we have not empirically assessed CPORT with a charged group so we have no details on how it performs for those who do not go on to be convicted (a less common occurrence in Canada, where the majority of charged individuals are convicted). If an evaluator decides to use CPORT prior to conviction for the purpose of sharing information about the risk factors, we highly recommend you add a caveat about your use so those reviewing your report understand the CPORT scoring criteria have not been met, for example stating: "While there is reason to believe CPORT will be applicable to charged individuals, there is currently no empirical support for this use. This information is intended to provide insight into individual risk factors and provide some context to an individual's offending, but it is not being used to score the individual in comparison to other offenders." If a conviction is registered you might then decide to use the CPORT as a score. Do not use CPORT in cases where the individual's child pornography charge has already been withdrawn or dismissed until there is further research evidence of the use of CPORT with this type of group.

As stated, we anticipate additional questions relating to the use of CPORT. For example, we are sometimes asked about use of CPORT with individuals who have no known other criminal offending. We include a response to this question, and others, in the FAQ document posted on the CPORT project page; we encourage users to check this page regularly as well as seek other sources of information (e.g., subsequent research) that might relate to the CPORT.

Information relating to CPORT, CASIC (Appendix B) and the additional considerations (Appendix C) may have value in a police investigative environment, as well as for mental health professionals conducting assessments and developing treatment priorities and plans.

Sources of Information

A number of sources of information were helpful during data collection, these are listed below. When collecting information for scoring CPORT, the sexual interest items, and any additional variables of interest we recommend that you indicate your source of information.

- Criminal history (e.g., police occurrence reports, national criminal records as recorded by the Canadian Police Information Centre, CPIC)
- Police occurrence reports
- Warrant information
- Police notes
- Forensic reports based on seized devices
- Offender interviews
- Victim and family interviews

Missing Information

As stated in Seto and Eke (2015), CPORT was relatively robust in terms of missing data (page 426):

There were missing data for 11 individuals regarding sexual interests and for one individual regarding contact sexual offending history. Its AUC was only slightly higher (.76, 95% CI [.66, .85] for the 254 cases with no missing items.

We also examined a version of the CPORT excluding the items about child content other than child pornography and admission/diagnosis of sexual interest in children, on the assumption that these would be more likely to be missing information in clinical or correctional files. This compact version of the CPORT had AUCs of .73 (95% CI [.63, .83]) for the full sample.

In the validation sample, the CPORT was similarly robust in terms of missing data, with an overall AUC of .70 (*95% CI [.54, .86])* for sexual recidivism and .72 for the 55 cases with no missing data (*95% CI [.46, .98]).* The combined samples had an overall AUC of .72 (N = 346, *95% CI [.64, .81]),* and an AUC of .75 for cases with no missing data (N = 309, *95% CI [.66, .85]).* Table 3 in our *in press* paper provides additional information relating to child pornography recidivism as well as a breakdown based on offender subgroups.

Overall, few items in the development sample were missing, however in our validation sample we had a greater number of missing data (N =25, 31%) and in practice (e.g., outside of policing) information on certain items might not be as easily available. Anecdotally, feedback from attendees of our presentations is that the two content related items would be the most difficult to score for clinicians and other later-stage users. Validation research or field tests might refine the number and type of items that can be missing and suggest ways to prorate scores.

We assessed substitutes for CPORT Item 5 (admission/diagnosis of sexual interest in children), the more commonly missing and more vulnerable item in our development sample, including a short scale consisting of behavioural and content variables (the CASIC scale). We provide some details on this research in Appendix B and the use of CASIC as a substitute for CPORT Item 5 (also see Seto & Eke, 2017).

In our development sample, we examined cases allowing for one missing item (not including Item 5 in cases where CASIC was used). The AUC was .74 (95% CI [.63, .84]) for predicting any sexual recidivism and .76 (95% CI [.64, .88]) for specifically predicting child pornography recidivism. CASIC was similarly effective as a substitute for Item 5 in the validation and combined sample.

Until further research is available, **we do not recommend using CPORT if there is more than one item missing.** Substituting Item 5 with the CASIC score as per Appendix B would not be counted as a missing item.

Item 1: ***Offender age at time of the index investigation, coded as higher risk if age 35 or younger (48% of the combined sample was higher risk on this item)***

Coding:

What to use when coding age at time of index investigation
• Calculation based on date police began investigation
• Initial focus of investigation may not have been on child pornography
• For cases reported by those outside of Canada, the index date is the day Canadian police began their investigation
• If age at index investigation is not known, other age variables could be used, but with a caveat

- This is calculated based on the date the police service began their investigation into the individual.
- Child pornography offences may not have been the initial focus of the investigation, for example:
    - an officer attends a traffic accident and child pornography is discovered in the vehicle (the index investigation date is the day that police attended the accident).
    - a sexual assault complaint is made to police and during the investigation, child pornography is located in the suspect's home (the investigation date is the day the police became aware of the sexual assault complaint).
- If the individual came to the attention of an agency outside Canada, the index investigation date is the day the Canadian police service became aware of the suspect and began their investigation, for example:
    - A foreign service such as the Federal Bureau of Investigation is online investigating an individual, they track him to Canada and contact Canadian authorities; the index investigation date is the day the police service in the relevant Canadian jurisdiction are made aware of the case.
- We used an online time and date calculator (www.timeanddate.com) to calculate age from the person's date of birth to the start date for the index investigation.

Cases where age at investigation is unknown:

- Because there may be greater access to information regarding age at the index conviction, we examined the relationship between age variables in the development sample:
    - The majority of child pornography charges were laid within a month of the start of the investigation (most individuals were arrested during the warrant search)
    - Also, age at the index investigation was closely associated with age at conviction as most court cases were completed within 15 months, for example when grouped based on 35 or younger, χ^2 (1) = 331.70, $p < .001$.
- Also, age at index investigation was similar to other age variables:
    - Within our development sample, the child pornography offence was the individual's first criminal charge in over half the cases (57%).
- In the development sample, the majority received no time in custody (60%) or intermittent time in custody (e.g., on weekends, 9%), therefore their age at index investigation was often age at risk to the community (age at first release). In the validation sample, likely due to changes in minimum sentencing, few individuals received no time in custody (5%); overall, 57% of the validation sample received no time in custody, intermittent time or less than 6 months (which could be served less time, for example 4 months) and 78% had less than a year before they would be back in the community
- Overall, this item could be scored with other age information however an evaluator would need to comment on the fact different age information was used and that it might impact on the score.

Background:

Younger age is well established as a risk factor for recidivism across different types of offenders, including sex offenders more generally (Hanson & Morton-Bourgon, 2005) and child pornography offenders specifically (Eke et al., 2011; Wakeling et al., 2011). In the general offender literature, age is one of the strongest and most universal correlates of crime (Hirschi & Gottfredson, 1983).

Item 2: ***Any prior criminal history, coded as higher risk if yes (41% of the combined sample was higher risk)***

Coding:

What to use when coding any prior criminal history	
Criminal charges (regardless of outcome)	✓
All prior criminal charges (sexual or otherwise)	✓
Non-criminal charges (e.g., traffic offences, Customs Act charges)	X
Offences committed in the past that result in charges at index (i.e., historical)	X
Self-report	X

- These are prior detected offences resulting in a criminal charge.
- Criminal charges were counted regardless of outcome (e.g., the charge was withdrawn).
- An offence did not have to be sexually related; all prior criminal charges were counted.
- Non-criminal charges, for example traffic offences or Customs Act charges, were excluded.
- This item also excludes offences committed in the past that result in charges at the index investigation:
    - For example, an individual is being charged at the index investigation for a sexual assault that occurred 5 years ago; the sexual assault would not be considered prior criminal history because it was unknown/undetected until the index set of charges (the formal response for this past offence is at the time of the index investigation for child pornography).
    - Charges for previously undetected contact sexual offending are included as part of the index offending in CPORT Item 4.
- Our sources for information included a national system for tracking offending, police occurrence reporting systems, and court documents outlining charges and convictions
- We did not have consistent information on self-reported offending, so do not score this item based on self-report without further research examining whether self-report information can be used instead of official records.

Background:

It is well established that prior criminal history is a recidivism risk factor for many different types of offenders, including those who commit sexual offences more generally (Hanson & Morton-Bourgon, 2005) and specifically those involved in child pornography offences (Seto & Eke, 2005; Wakeling et al., 2011). Among general offenders, criminal history is the strongest of the Central Eight risk factors (Andrews & Bonta, 2010).

Item 3: ***Any prior or index failure on conditions such as probation, parole or conditional release, coded as higher risk if yes***
(15% of the combined sample was higher risk)

Coding:

What to use when coding any prior failure on conditions	
Prior or Index failure on conditional release	✓
Detected offence with formal response	✓
Criminal Charges (regardless of outcome)	✓
Self-report	X

- This item is scored positively for any type of failure on conditional release, either prior to or at the time of the index investigation for child pornography.
- These were detected breaches or technical violations for which there was a *formal* response, such as charge or recommitment (e.g., parole revocation).
- Criminal charges were counted regardless of outcome (e.g., the charge was withdrawn).
- Examples include failure to appear for court, a technical breach of probation or parole (e.g., not reporting as required), a failure to abide by conditions relating to the use of the internet or computers, or being around children without a responsible adult present.

Background:

Failure on conditional release is another well-established criminal risk factor, where those who have not been able to comply with bail, probation or parole conditions are more likely to further break rules by committing new crimes. This has been demonstrated among those involved in sexual offences more generally (Hanson & Morton-Bourgon, 2005).

Item 4: ***Any prior or index contact sexual offence history, coded as higher risk if yes (19% of the combined sample was higher risk)***

Coding:

What to use when coding prior or index contact sexual offence history	
Sexual offence with formal response	✓
Criminal Charges (regardless of outcome)	✓
Contact sex offence (included any touching of a sexual nature)	✓
Invitation to sexual touching	X
Offences committed in the past that result in charges at index	✓
Self-report	X

- These are detected sexual offences for which there was a formal response (criminal charge or conviction).
- Criminal charges were counted regardless of outcome (e.g., the charge was withdrawn).
- Contact sexual offences included any contact of a sexual nature; coding was based on the nature of the offence – in many cases, police report information allowed us to confirm that charges reflected an individual's actions during the offence (e.g., a charge of sexual assault related to touching a child).
- This item included offences committed in the past that resulted in charges at the index investigation:
    - For example, the individual was charged at the index investigation for a sexual assault that occurred two years ago but that had just came to light; this sexual assault would not be considered prior criminal history as it was undetected/unknown until the index investigation, but it would still count on this item because index offences are included.
    - The following types of situations would count: (a) After media reports of the child pornography charges, victims come forward with reports of past contact sexual offending by the individual; (b) the child pornography images depict evidence of contact sexual offending by the individual.
- Our sources for information included police occurrence reports, a national system for capturing offending, police occurrence reporting systems, and court documents outlining charges and convictions.
- We did not have consistent information on self-reported offending, so do not score this item based on self-report without further research examining whether self-report information can be used instead of official records.
- This item does not include offences where there was no sexual contact, for example invitation to sexual touching (such as during online chat).

Background:

Evidence of contact sexual offending is a risk factor for sexual recidivism (Hanson & Morton-Bourgon, 2005) including among child pornography offenders (Eke et al., 2011; Wakeling et al., 2011). Individuals involved with child pornography who have no known history of contact sexual offending may have individual characteristics (e.g., high empathy, high self-control) or situational factors (e.g., stable family and social ties, limited access to children) that help prevent contact sexual offending.

Further, *dual* or *mixed* offenders who have committed both child pornography and contact sexual offences are more likely to be pedophilic than either child pornography only offenders or contact offenders with no history of child pornography offending (see Babchishin, Hanson, & VanZuylen, 2015). Being sexually interested in

children is a well-established risk factor for sexual recidivism among individuals who commit non-internet sexual offences (Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2005).

Undetected prior contact sexual offending among those involved in child pornography offences has been examined, with Seto and colleagues (2011) and Bourke and colleagues (2014) reporting just over half of child pornography offenders with no known contact history admit (mostly as part of a polygraph process) to committing prior contact sexual offences against children. Methods for assessing the likelihood of undetected prior contact offending among individuals involved with child pornography are being examined, for example, as stated earlier in the introduction the KIRAT, was developed to assist police in prioritizing suspects involved with child sexual exploitation material by identifying those more likely to have already committed a contact sexual offence (see see Long, Alison, Tejeiro, Hendricks, & Giles, 2016). How assessments of prior undetected offending might assist in considerations of risk for future sexual offending among those involved in child pornography offences will be an important question for future research.

Additional Item Information:

- In the combined samples, prior or index contact sex offences usually involved children

Item 5: ***Indication of pedophilic interests, coded as higher risk if yes (37% of the combined sample was higher risk)***

Coding:

- This item is composed of admissions and/or evidence of a diagnosis of pedophilia or hebephilia[5] (which can be identified as Paraphilia Not Otherwise Specified under the DSM-IV-TR nosology in place at the time this research was conducted).
- Pedophilia is clinically defined as a persistent, intense sexual interest in prepubescent children, whereas hebephilia is clinically defined as a persistent, intense sexual interest in pubescent children. Pubescent children are typically between the ages of 11 and 14 and are sometimes described as "tweens" or "young adolescents". Age is a proxy for developmental stage, however, because of variation in the age of onset of puberty. Hebephilia should not be confused with a sexual interest in postpubertal adolescents who are nonetheless below the legal age of consent (e.g., sexually mature looking 15 year olds, when the age of consent is 16).
- This item involves admissions to police regarding sexual interest in the child material (pornography, nudity and other), masturbating to the child material, or sexual interest in children in general.
- Admissions were coded across interactions with police investigators:
    - We coded this item from recorded/transcribed interviews and from officers' notes (e.g., those describing verbal interactions with the individual, for example that occurred during the execution of the search warrant or notes taken from verbal interactions during transport after charges were laid).
    - Recorded interviews and officer notes are "disclosable" for court and therefore information regarding an individual's self-report about sexual interests may be available or mentioned beyond the investigative file.
    - This item was not positively scored for non-specific comments, for example, "I have a problem" would not be positively scored on its own; the admission had to be in the context of a discussion about sexual interest in children and/or images relating to children (e.g., "I have a problem, I can't help it, the pictures turn me on" or admissions about use "I like to masturbate to this material when I'm stressed or feeling lonely").

What to use when coding pedophilic interests	
Admission to police to sexual interest in child material, masturbating to child material or general sexual interest in children	✓
Admission to an undercover officer (individual not aware the person is a police officer)	X
Admissions made to others online (e.g., in chats)	X
Non-specific responses; responses not directly related to sexual interest in children	X
Reporting to police previous diagnosis of sexual interest in children	✓
Collateral evidence of formal diagnosis pre-index	✓
Collateral evidence of formal diagnosis post-index	X
CASIC score of 3 or more	✓

[5] Hebephilia is a less well known or studied age attraction to pubescent children (Blanchard et al., 2009). Pedophilia and hebephilia (either *pedohebephilia* or pedophilia alone under the ICD-10 and in this document) can be assessed in different ways (Seto, 2008, 2013).

    - This item was not positively coded if the individual did not know they were talking to a police officer (e.g., online undercover officer in a chat room).
- This item includes the individual reporting to police that he had been previously diagnosed with pedophilia or hebephilia, or collateral evidence of a formal diagnosis (e.g., from a mental health report).
- We did not (reliably) have access to assessment information and admissions of sexual interest that occurred after conviction, for example those resulting from evaluations conducted for court purposes (e.g., sentencing), assessments conducted for treatment purposes, or admissions made to probation and parole. Therefore, these assessment results and admissions cannot be included in the coding of this item. Future research examining the influence of these later assessments and admissions in predicting future offending will be valuable.
- The original variable was strict and focused on admissions to police or information based on a formal clinical assessment, in the admission variable we did not include other suggestive evidence of sexual interest in children such as:
    - File sharing rules or search criteria (e.g., "girls only! aged 5-12 only! no adult!"), admissions made to others online (e.g., "have loved boys since I was a boy, sexually turned on by beautiful boys…"), postings in child sexual interest groups, or sexualized chat in cases involving luring.
    - We are adding to our work in this area and testing additional sources and ways of coding sexual interest in children (e.g., search criteria, post-conviction assessments and admission).
    - We discuss some of this in Appendix C, Other Considerations.
- Further, we coded a series of variables relating to an individual's collection content and their collecting behaviour. Six of these variables predicted Item 5 scores and can be used as a substitute for this item (using a score of 3 or more). <u>The Correlates of Admitted Sexual Interest in Children (CASIC) scale is described in Appendix B of this document</u>.

<u>Background:</u>

Research has repeatedly shown that individuals who have sexually offended and have pedophilic interests are more likely to reoffend sexually than individuals without pedophilic interests (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). In some studies, pedophilia and hebephilia are combined, such that individuals who are sexually attracted to pubescent children are still considered pedophiles. Most child pornography cases involved images of children who are clearly pre-pubescent or just beginning to show secondary sex characteristics. Perhaps in part, practically, it is easier to identify a pre-pubescent child in an image than it is to discern a youth with secondary sex characteristics from an adult.

The finding that pedophilic sexual interests is associated with a greater likelihood of sexual recidivism among individuals involved with child pornography is consistent with the motivation-facilitation model proposed by Seto (2008, 2013) to explain contact sexual offending against children and child pornography offending.

An important question for validation research is whether other evidence of pedophilic sexual interests can substitute for this item. For example, as stated earlier, should this item be endorsed if the individual is assessed after the index investigation and there is evidence from phallometric testing that the person shows greater sexual arousal to children than to adults? What if the individual admits his sexual interest in children to a clinician or a probation or parole officer? As well, we tested the use of other communications (that would be known at the time of the index investigation), such as how an individual requests material online and the

content of their chats; this broader coding might hold some promise. We suggest some ways to collect this information in Appendix C.

Additional Item Information:

- Sexual interest was of the more commonly missing items; this may not be the case in a clinical setting, where there is perhaps more opportunity to build rapport, work with an individual and use various assessment methods. As stated earlier, the coding of this variable using post-conviction information needs to be tested.
- It should be noted that evidence of a past diagnosis of pedophilia or hebephilia is associated with sexual offending history, which is already represented in Item 3. It is perhaps more likely that individuals who have previously committed a sexual offence would be evaluated regarding pedophilia or hebephilia (though sexological testing may be more common in recent child pornography cases, and also in some cases the person might have self-referred because of distress or concerns about their sexual interest in children).
- In the development sample, almost all of those who were diagnosed with pedophilia or hebephilia also admitted their sexual interest in children to police investigators, so the primary variable considered here reflects admission of sexual interests in prepubescent or pubescent children.
    - There were 37 individuals with evidence of a formal diagnosis of pedophilia and/or hebephilia; the majority (33, 89%) also admitted their sexual interest to police.

Item 6: More boy than girl content (≥ 51%) in the child pornography content
(16% of the combined sample was higher risk)

Coding:

What to use when coding more boy than girl content in child pornography	
Only child pornography is considered for this item.	✓
Child pornography = sexually explicit depiction of person under 18 years.	✓
More than half the child pornography material included boys.	✓
Adults in content	X
Child nudity or other content	X

- In our development sample, child content seized by police and available to our research coders was divided into three categories – child pornography, child nudity, and child other – and the proportions of these categories in the total content was estimated by coders to the nearest 5%, distinguishing by age (infant/toddler, prepubescent child, pubescent child) and gender (boy or girl); further, gender and age group information were always recorded by police in the development sample.
- Child pornography refers to a sexually explicit depiction of a person under the age of 18 and in Canada this can include depictions of fictional children (e.g., cartoon) or text describing explicit sex between a child and an adult or another minor; only child pornography content is considered for the current item. Child pornography was fully defined on page 5.
- The two latter categories we examined included child nudity, children in stages of undress, or fully clothed children; this material is discussed in Item 7.
- If more than half (≥ 51%) an individual's *child pornography material* included boys, the current item was coded positively.
- Images with both boys and girls were counted as both boy and girl content; adults were not included in these gender counts.

Background:

- This variable likely represents atypical sexual interests; men who sexually offend against boys are more likely to be diagnosed as pedophilic than those who offend only against girls.
    - For example, a screening tool, the Screening Scale for Pedophilic Interests (SSPI; Seto & Lalumière, 2001), used to assess pedophilic interest based on victim characteristics, includes having a boy victim as one item, in fact this item is the most heavily weighted item in the scale. The SSPI is significantly related to other measures of pedophilia including phallometric testing (Seto & Lalumière, 2001) and has distinguished arousal to pubescent males from arousal to pubescent females (Canales, Olver, & Wong, 2009).
- Having a sexual interest in boys is associated with a greater likelihood of persistence in contact sexual offending (Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2005).
- Those with a sexual interest in boys may also be higher in emotional congruence with children; with emotional and intimacy needs fulfilled by children rather than adults (e.g., see Underhill, Wakeling, Mann, & Webster, 2008; McPhail, Hermann, & Fernandez, 2014; McPhail, Hermann, & Nunes, 2013).

Additional Item Information:

- We collapsed counts into a dichotomous variable of ≥ *51% or not* rather than using more complicated ratios that require exact counts for practical reasons:
    - Specific image counts are not carried out by all police in different jurisdictions; however, general themes regarding age and gender of content are usually reported or available.
    - Even when all images are catalogued, the information may not be made available to professionals outside of policing (see Glasgow, 2010, 2012) and therefore global descriptions regarding gender of the children in the child pornography counts is of more practical use.
- In the development sample, most individuals had child pornography as well as the other child content such as nudity – only 7% of the sample had only child pornography and no other child content.
- Gender preferences in child pornography material were similar to those evident in other child content.
- In most cases where the child pornography collection was coded as 51% or more boys, the collection could also be described as 75% or more boys, suggesting when a preference exists for boys, it is quite evident and this information would be reliably shared beyond the investigative file; we did not use the 75% criterion for scoring the current item because it did not improve prediction of sexual recidivism.
- Gender of the children in the collection was always recorded by police in the development sample; we expect that in general information shared about the child content, beyond the full investigative file (e.g., in a general report, for court etc), could include a comment about the predominant gender of the children in the child pornography material, though not always. In our validation sample we did not directly access the collections and found we could code Item 6 in 92% of cases.
- We recently examined gender preferences in the child sexual exploitation material and child other material, comparing it in cases where individuals had contact sexual victims; child content was congruent with gender of contact sexual victims, e.g., individuals with more boy content were more likely to have boy contact victims (see Eke & Seto, 2017).

Item 7: ***More boy than girl content (≥ 51%) in child nudity and other child content, excluding child pornography content***
(17% of the combined sample was higher risk)

Coding:

What to use when coding more boy than girl other child content	
Only child nudity and child other content considered for item.	✓
Child nudity and child other = person under 18 years of age clothed, nude or in stages of undress.	✓
More than half the child nudity and other child content included boys.	✓
Adults in content	X
Child pornography content	X

- In the development sample, child content seized by police and available to our research coders was divided into three categories – child pornography, child nudity, and child other – and the proportions of these categories in the total content was estimated by coders to the nearest 5%, distinguishing by age (infant/toddler, prepubescent child, pubescent child) and gender (boy or girl); further, gender and age group information were always recorded by police in the development sample.
- The two latter categories include nudity, children in stages of undress, and children fully clothed. This content would NOT meet the legal definition of child pornography (in Canada) as described for Item 6 above.
- If more than half (≥ 51%) an individual's *child nudity and other child content* included boys, the current item was coded positively.
- Images with both boys and girls were counted as both boy and girl content; adults were not included in these gender counts.
- Any child content considered in scoring CPORT can be classified as child pornography (Item 6) OR child nudity and other content (Item 7). No images or material can be considered in scoring BOTH items.

Background:

- A person with a sexual interest in children may find a variety of child material sexually stimulating, not only depictions of child pornography (e.g., Krone, 2004; Taylor & Quale, 2003). This can include depictions of nude children that do not meet legal definitions of child pornography, children in underwear or swimsuits, and children who are fully clothed.
- Interest in boys can include both pornographic and non-pornographic content, because the children in the images are appealing to the person; individuals involved with child pornography often have this content and individuals with pedophilia may also collect this content regardless of having child pornography (see Seto, 2008).
- Having a sexual interest in boys is associated with a greater likelihood of persistence in contact sexual offending (Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2005)
- Those with a sexual interest in boys may also be higher in emotional congruence with children; with emotional and intimacy needs fulfilled by children rather than adults (e.g., see Underhill, Wakeling, Mann, & Webster, 2008; McPhail, Hermann, & Fernandez, 2014; McPhail, Hermann, & Nunes, 2013).
- This item may speak to the breadth of the person's interest in children, e.g. content might be sought that is not strictly for sexual arousal but also for aesthetic or emotional reasons.

Additional Item Information:

- In the current sample, most individuals had other child content; only 7% of the development sample had only child pornography and no other child content.
- This content does not meet the Canadian legal definition of child pornography, therefore it may not always be fully catalogued by police or the information may not commonly be shared beyond the investigative file; in the development sample, the CPORT AUC without this item (and with no other missing items) was .75 (95% CI .64 - .85) compared to an AUC of .76, 95% CI [.66, .86]) with this item and no other missing information.
- We did not directly access the collections in our validation sample but still found we could code Item 7 in 90% of cases.
- We recently examined gender preferences in the child sexual exploitation material and child other material, comparing it in cases where individuals had contact sexual victims; child content was congruent with gender of contact sexual victims, e.g., individuals with more boy content were more likely to have boy contact victims (see Eke & Seto, 2017).

CPORT Recidivism Probabilities

Findings were similar in our development and validation studies (see Eke et al., in press, including Online Supplement B). Also, the effect sizes from the validation sample for the individual CPORT items were not significantly different than the effect sizes from the development sample, using the formula for testing AUCs between groups from Hanley and McNeil (1983).

In our 5-year fixed follow-up combined sample of 346 individuals convicted of child pornography offences, the mean CPORT score was 1.94 (*SD* = 1.57, CI = 1.74 - 2.12, range 0 – 7; CPORT score was a significant predictor of any sexual recidivism (AUC[6] = .72, 95% CI [.64, .81]) and any child pornography recidivism (AUC = .74, 95% CI [.64, .84) specifically, regardless of missing items. The CPORT was relatively robust for these missing items, with an AUC only slightly higher for any sexual recidivism (.75, 95% CI [.66, .85]) for the 309 cases with no missing items. We discuss missing items on pages 10- 11. Note that sexual recidivism would include child pornography recidivism, as well as other (including contact) sexual offences and the above did not include CASIC substitutions.

We separated the analyses by offender type and reported these in Eke et al., in press; *in the combined sample, AUCs for CPORT total scores (with and without missing information) were lower for the CP/NC group compared to the CP+C group. For example, AUCs for CPORT total scores (including all cases) were .66 for the CP/NC group compared to .72 for the CP+C group. Confidence intervals for the CP+C group, however, were quite wide due to small sample size (depending on the analysis, n's vary between 59 and 67). For item analyses (see Online Supplement A), effect sizes were higher for the CP+C group in 9 out of 12 analyses.*

An original goal in the development of a risk tool for individuals with child pornography convictions was to assist in the prioritization of cases for police and other criminal justice professionals as well as gathering information relevant to offending that could be important for case management, supervision, and prioritizing treatment goals. Based on our research, the CPORT may be helpful for ranking individuals.

The following table is used to illustrate the relationship between CPORT scores and observed sexual recidivism in the development sample, as well as the estimated probabilities derived from logistic regression. The tool appears to perform sensibly. However, as per our previous statements (e.g., Seto and Eke, 2015, p. 12) <u>we do not recommend the actuarial use of the CPORT with reference to the recidivism probabilities reported here until there are further validation studies</u>. Although we do not yet recommend reporting recidivism probabilities in applied risk assessments, if the probabilities are referred to, it should be the predicted estimates from logistic regression that are used, as this is the method recommended for producing more stable and credible recidivism estimates (Hanson, Helmus, & Thornton, 2010) – also see our comments on page 9. As well, as has been demonstrated with other empirical actuarial tools, there is an importance in examining and updating norms over time with large samples, as well as across different types of samples or populations (e.g., see Hanson, Thornton, Helmus, & Babchishin, 2016; Hilton & Eke, 2017). The benefit of evidence based tools comes from research, which in turn can lead to changes in the scoring, application, and norms for a given instrument. Consequently, users should expect the CPORT properties to change over time as new information becomes available.

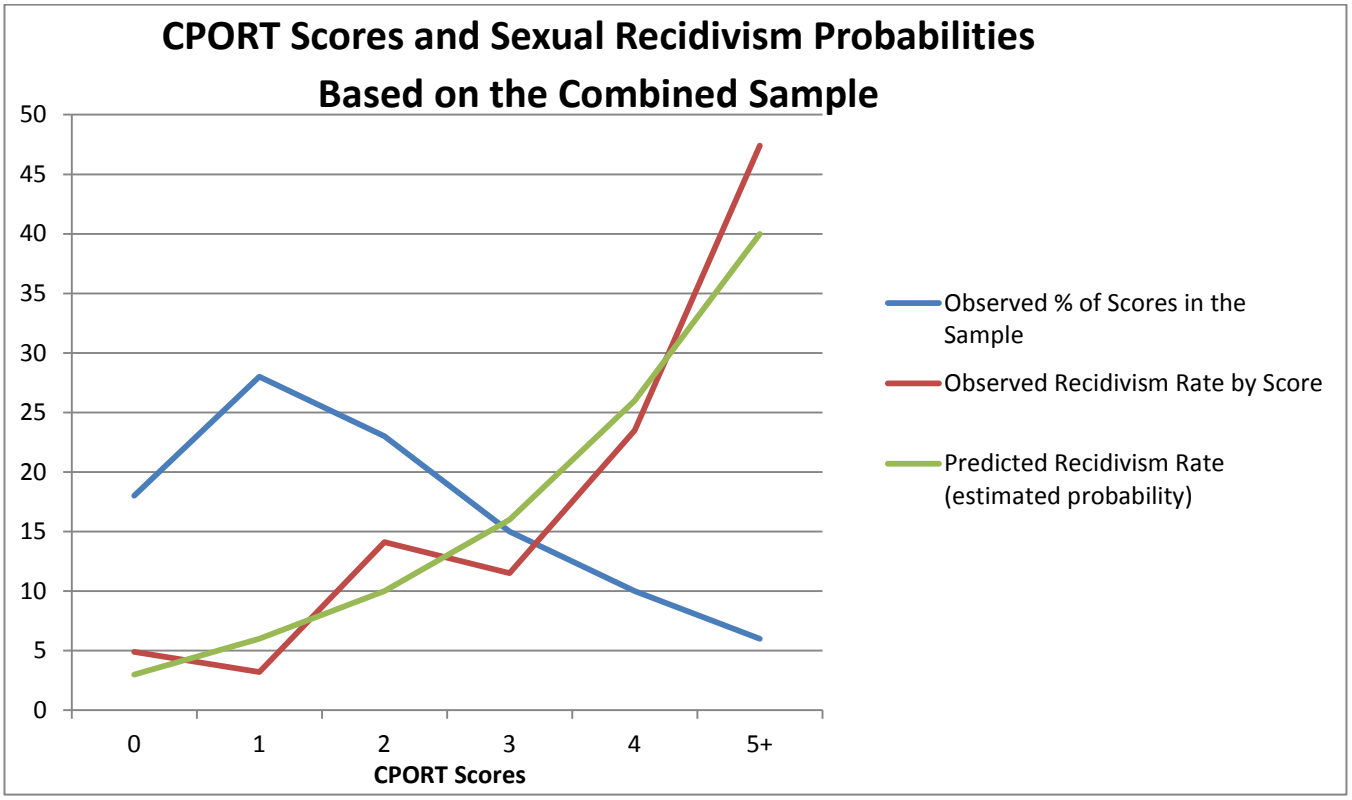
[6] AUC = area under the curve, a measure of predictive accuracy that can range from 0.00, to 1.00, with .50 signifying chance prediction, and 0 and 1 signifying perfect negative and perfect positive prediction, respectively. In a meta-analysis of risk assessment measures by Hanson and Morton-Bourgon (2009), the average ability of 'empirical actuarial risk assessments' (designed to predict sexual recidivism) to predict sexual recidivism was *d* 0.67, 95% CI [.63, .72], which relates, approximately, to an AUC of .68, considered to be a moderate effect size (see Rice & Harris, 2005; effect sizes over an AUC of .71 can be considered large).

Observed and Predicted 5-Year Recidivism Probabilities for the CPORT

	Observed Recidivism Rate (%)			Recidivism Estimates Derived from Logistic Regression (%)			
CPORT score	Combined	CP/NC	CP+C	Combined	Seto & Eke (2015) Development	CP/NC	CP+C
Any Sexual Recidivism							
0	4.9	4.9	0.0	3	2	3	5
1	3.2	3.4	0.0	6	5	6	8
2	14.1	11.1	26.7	10	9	9	13
3	11.5	12.2	9.1	16	15	14	20
4	23.5	29.4	17.6	26	26	22	30
5+	47.4	0.0	52.9	40	40	32	43
Total	11.8	8.4	25.8				
Any Child Pornography Recidivism							
0	4.9	4.9	0.0	2	-	2	2
1	1.1	1.1	0.0	4	-	4	3
2	7.7	6.3	13.3	7	-	7	7
3	11.5	12.2	9.1	12	-	11	12
4	17.6	23.5	11.8	20	-	18	21
5+	36.8	0.0	41.2	32	-	27	35
Total	8.6	6.2	18.2				

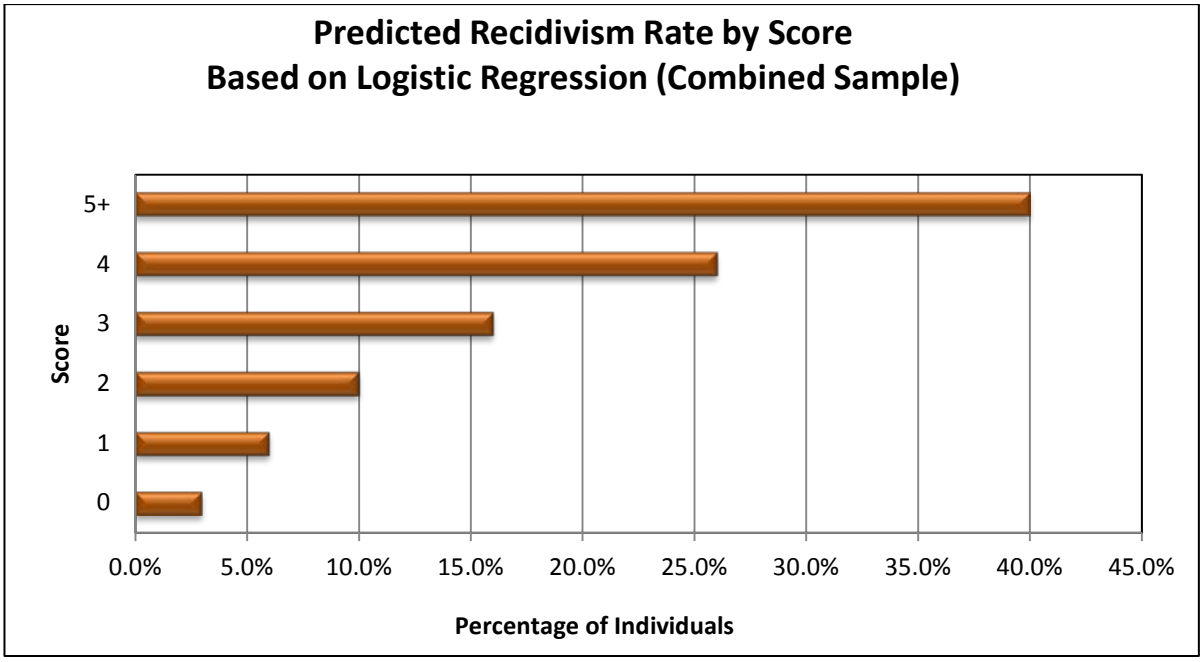
Note. CP/NC = child pornography/non-contact offences. CP+C = child pornography plus contact offences. In the Combined sample, the CPORT total scores were restricted to cases with no more than one item with missing information (excluding Item 5, where CASIC scores of 3+ were used as a substitute), resulting in a sample of 339. Recidivism estimates for CP/NC and CP+C are subgroups based on the combined sample. For additional information, see Eke et al., (in press).

A second way of viewing this information is with a graph. As might be expected, the majority of individuals in the combined sample had low scores on the tool (blue line). The red and green lines visually depict that higher scores are related to greater observed as well as predicted sexual recidivism. There is a strong similarity in the observed (red line) and predicted (green line) recidivism.



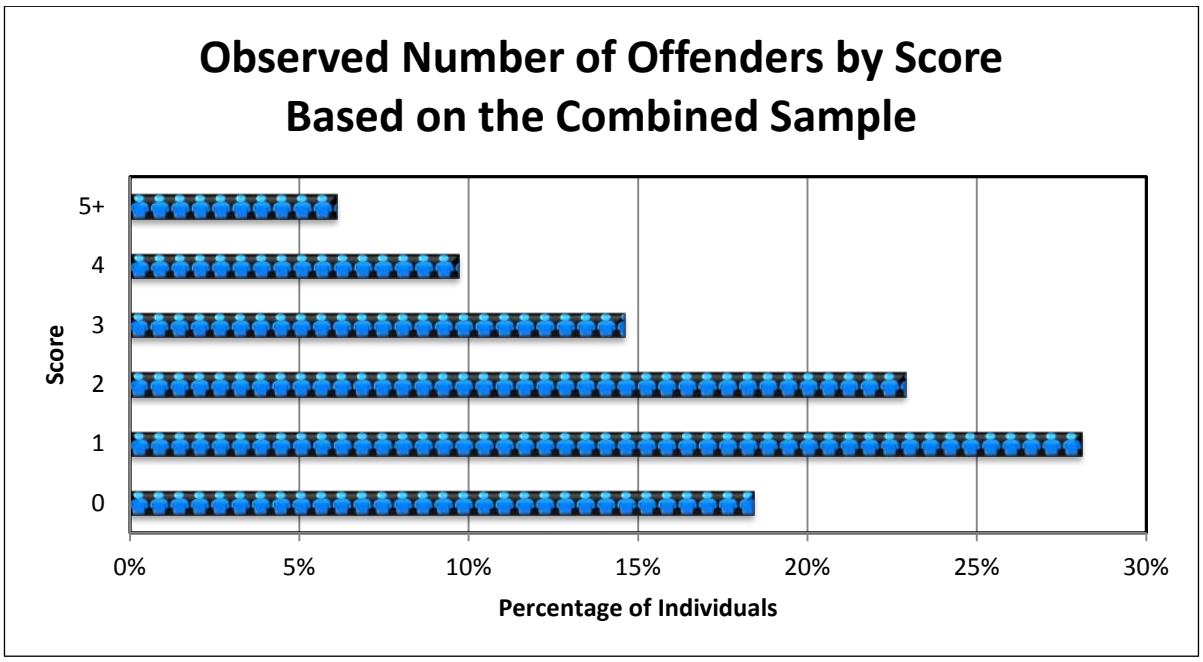
Note: Although the CPORT is relatively robust in terms of missing data, observed and predicted recidivism probabilities are based on the 309 cases with no missing items, as documented in Eke, Helmus and Seto (in press).

Below is another representation of likelihood of reoffending (predicted recidivism based on logistic regression) based on CPORT scores from the combined sample.



The figure below represents the number of individuals in the combined sample at each score. As with the information on recidivism probabilities, this is based on the 309 cases with no missing items. Although the CPORT is a scale out of 7, few scored a 5 (8 cases; 2.6%), a 6 (6 cases; 1.9%) or a 7 5 cases; 1.6%); therefore,

scores of 5 and higher were combined. As would be expected, the most common scores in the sample are the lower scores. Based on the earlier figure, these individuals account for the least recidivism; the few individuals with the higher scores (5+) accounted for the most recidivism, in the earlier graph.



CPORT Percentiles and Risk Categories

Percentiles for CPORT Scores

Percentiles describe how an individual's risk compares to other offenders, and can be particularly useful in resource allocation decisions (Harris, Lowenkamp, & Hilton, 2015). Percentiles are commonly used in many psychological tests, but they are harder to apply to a scale like CPORT, where the range of scores is from 0 to 7. Essentially, there are 100 percentile values (from 0 to 100), but only 8 possible CPORT scores, so due to 'ties' (a large percentage of individuals sharing a common score; e.g., roughly 28% of offenders are expected to score a 1 on CPORT), a single CPORT score may span a large range of percentile values. Reporting percentiles as exact percentile units (e.g., a midpoint average) may be impractical with this range of scores. Consequently, we recommend reporting more descriptive percentile information; specifically, the proportion of individuals expected to have the same score, as well as a higher score, and a lower score. Also note that percentiles cannot be used to infer absolute recidivism rates. For additional information on ways of calculating percentiles and their application to forensic risk assessment, see Hanson, Lloyd, Helmus, and Thornton (2012).

The table below provides the relevant percentile information for CPORT scores. Suggested wording in reports could look something like this:

Mr. XX's CPORT score was X. In the combined normative dataset from Eke et al. (in press), roughly XX% of individuals had the same CPORT score, XX% had a lower risk score, and XX% had a higher risk score. In other words, out of 100 individuals involved with child pornography material, XX would be expected to have a lower score, XX would have the same score, and XX would have a higher score.

	Observed Percentages		
CPORT Score	Lower Risk	Same Score	Higher Risk
0	0	18	82
1	18	28	54
2	46	23	31
3	69	15	16
4	84	10	6
5+	94	6	0

Percentile information was obtained from Eke et al., (in press), from the combined sample (Table 5).

A Discussion About Risk Levels for CPORT Scores

Converting CPORT scores into risk levels is intuitively appealing to many, but it's also tricky. Firstly, it's important to know that any time you clump scores into categories, you're losing information by referring to the categories instead of the score (e.g., you're treating individuals with different scores in that category as the same, and they may not be). So if risk levels are to be reported, they should be reported alongside CPORT scores, not instead of.

Assigning risk levels is fraught with difficulty given studies finding that professionals tend to have very different interpretations of labels like "low risk" or "high risk" (Hilton, Carter, Harris, & Sharpe, 2008; Monahan & Silver, 2003; Slovic, Monahan, & MacGregor, 2000). These labels are appealing, but their meaning is fuzzy. Risk levels are most useful when they have a defensible definition and are linked to meaningful actions regarding risk management (e.g., supervision and/or treatment). Given different policies and resources in different jurisdictions, it's possible that different groupings may be more meaningful in different settings. For example, if a jurisdiction only has enough resources to supervise 20% of the individuals involved in child pornography offences in their community, then for their purposes they may look to a CPORT score that identifies roughly the 20% highest risk individuals.

As part of a broader goal of improving risk communication, the United States Council of State Governments Justice Center assembled a working group to develop standardized risk levels for general offenders that would promote similar risk level definitions across different risk scales and jurisdictions, ideally improving consistency in risk communication (Hanson, Bourgon et al., 2017). This working group has proposed a five-level risk/needs classification system. This system has already been adopted for several sex offender risk scales, including Static-99R and Static-2002R (Hanson, Babchishin et al., 2017), STABLE-2007 (Brankley, Helmus, & Hanson, 2017), and the Violence Risk Scale – Sexual Offence Version (Olver et al., in press). In addition, Brankley has posted a three-part series of YouTube videos discussing this work and the relevance of common risk language. The link to the first in the series, published August 2017, is: https://www.youtube.com/watch?v=5DT6Juw0Epk

In the Justice Center's proposed 5 risk levels, the lowest risk category (Level I) describes generally prosocial individuals with limited criminal background or criminogenic needs. Their risk to reoffend is similar to the rate of offending among non-offenders (e.g., young males). Level II refers to offenders who don't meet the stringent definition of Level I, but are still below average risk. They are expected to have some, but limited, criminogenic needs. Level III offenders describe the "typical" offender. This group tends to be large (e.g., among the sex offender risk scales referenced above, roughly half of the distribution), and has the types of risk factors and criminogenic needs that would be considered typical of that type of offender, and in need of the standard level of interventions typically provided to offenders. Level IV offenders are perceptibly higher risk than Level III, and generally have higher than average criminogenic needs. Level V offenders are described as virtually certain to reoffend (minimum of 85% likelihood within 2 years). Given low base rates of sexual recidivism, it is not currently possible to empirically identify a Level V sex offender. Consequently, Static-99R, Static-2002R, STABLE-2007, and the VRS-SO have made a distinction between Level IVa and IVb offenders, with IVb offenders being a small subset of the highest risk offenders, in need of the most intensive supervision and management, but not considered virtually certain to reoffend.

We believe there is utility in following this Justice Center framework for establishing risk levels for CPORT scores. However, there are some challenges in applying this framework to the CPORT data:

1) We do not yet have a large enough sample size for reliable recidivism estimates, which is particularly important for distinguishing between Risk Levels I and II.

2) Given that CPORT scores range only from 0 to 7, with few individuals scoring 5 or more, there is an insufficient range of scores to meaningfully distinguish five risk levels, especially if considering measurement error in determining the width of the levels.

3) It is unclear if risk levels for CPORT should be relative to sex offenders or to child pornography offenders specifically (i.e., average risk for a sex offender, or for a child pornography offender?).

As additional data becomes available, researchers may be able to further develop this work.

Appendix A: CPORT Form

CHILD PORNOGRAPHY OFFENDER RISK TOOL (CPORT)

	Name: DOB: Case number:	Charges at index (include child pornography and otherwise):	**Both factors must be present to score the CPORT:** **YES NO** ☐ ☐ Adult male ☐ ☐ Convicted of a child pornography offence
	Date of child pornography **Index Investigation**: Date of child pornography **Charge**: Date of child pornography **Conviction:**	Nature of child pornography offence, what led to arrest:	
	Completed by:	Date CPORT completed:	Information reviewed and sources:

	CPORT Risk Factors	**Case Details** **Provide support for your score of 0, 1 or unknown.**	**Item Present:** 0=No 1=Yes ● Unknown
1.	Offender age at time of index investigation: 35 or younger	Details and sources:	
2.	Any prior criminal history?	Details and sources:	
3.	Any failure on conditional release, including charge at index?	Details and sources:	
4.	Any contact sexual offending, including a charge at index?	Details and sources:	
5.	Indication of pedophilic or hebephilic interests If using CASIC to score this item (due to the absence of admission or diagnosis of sexual interest), you must have a CASIC score of 3 or more to score positively	Details and sources:	
6.	More boy than girl content in the child pornography material (≥ 51%)	Details and sources:	
7.	More boy than girl content in the nude/other child material (≥ 51%)	Details and sources:	
	We do not recommend scoring CPORT if there is more than one item missing (substituting Item 5 with the CASIC score would not be counted as a missing item).		TOTAL SCORE (0 to 7)

Appendix B: Correlates of Admission of Sexual Interest in Children (CASIC)

Item 5 of CPORT relates to admission to police of sexual interest in children or evidence of a diagnosis of pedophilia/hebephilia. In the development sample, almost all of the small number of individuals who were diagnosed with pedophilia or hebephilia also admitted their sexual interest in children to police investigators, so the primary variable considered here reflects admission of sexual interests in children. One concern is that admission is easily vulnerable to faking or to refusal to respond when asked about sexual interests. This may become a particular issue when individuals are concerned about the potential impact of admission on criminal justice responses, such as sentencing and other risk related decisions.

As detailed in Seto and Eke (2015) and elsewhere in this document, we collected extensive information regarding individuals' collections and collecting behaviours. Using the CPORT development sample, we identified the following behavioural correlates (coded yes/no) of admission of sexual interest in children: (1) never married (54% of sample); (2) child abuse video(s) (64%); (3) content included sex stories involving children (31%); (4) evidence of interest in child pornography spanning a time frame of two years or longer (55%); (5) volunteered with children before or during the index offence (7%); and (6) engaged in sexual communication with a minor, or undercover officer posing as a minor, online (10%). We have called this the Correlates of Admission of Sexual Interest in Children Scale (CASIC; Seto & Eke, 2017). When summed, the average score on CASIC is 2.21 out of a possible 6, and CASIC score was significantly associated with admission of sexual interest in children, AUC = .71 (95% CI = .65-.77). There were similar findings in a small validation sample (Seto & Eke, 2017).

We provide additional details about CASIC and the dichotomous scoring of the items starting on page 29. These items are coded based on information available at the time of the index child pornography offence and police interviews with offenders and witnesses. As per the coding of CPORT, this is information gathered as part of the investigation therefore post-conviction psychological assessments or information does not count. When coding each item, we took extensive notes in support or rejection of an item being applicable and suggest this method for anyone collecting information on these items. Results indicate that Item 5 on CPORT can be replaced using a score of 3 or more on the CASIC (see Eke et al., in press); further research needs to be completed to better establish CASICs psychometric properties.

Overall, few items in the development sample were missing, however in practice (e.g., outside of policing) information on certain items might not be as easily available. We have provided information on missing data in the coding information; in our development and combined samples, the more commonly missing item was time span collecting or accessing the child pornography material. Originally, we had recommended that until further research is available, do not use CASIC if there is more than one item missing. We now indicate that it is defensible to use a CASIC score of 3 or more as evidence that CPORT Item 5 is present, regardless of the number of CASIC items missing, because the cutoff has been reached. However, we do not recommend scoring CPORT Item 5 as absent if the CASIC score is less than 3 when more than 1 CASIC item is missing, because the missing CASIC items might be present and would have increased the CASIC score to 3 or more if known.

We are also examining other possible indications of sexual interest in children, again based on the information available during a child pornography investigation. For example other forms of admission such as online comments made by individuals (e.g., in chat rooms) as well as the parameters individuals set for collecting child content. We provide examples of these variables in our Appendix C that outlines *Other Considerations.*

Knowledge of variables that may help identify sexual interest in children, including in cases of denial or refusal to answer CPORT Item 5, may assist in considerations of risk and also help identify important treatment and risk management needs. Information about the extent of the material being accessed by an individual, information about online activities, and the time span covered by an individual's interests may not always be consistently documented or shared across stakeholders; the CASIC and other variables highlighting sexual interests may assist with this, while also providing variables for researchers to further assess.

Coding notes for CASIC items:

1) Never married (coded positively as 1 = yes)
53% of combined sample; 2.3% of cases missing

- Marital status at the time of index investigation.
- Negatively coded (0 = no) if the offender was separated, divorced, widowed or had lived common-law at any point leading up to the index arrest.
- Never married offenders may have had dating relationships, but did not live together in a common-law, intimate-partner relationship.
- We did not use a set time period (e.g., 2 years) to define common-law, rather it was based on indication of some commitment (e.g., had moved in together, combined finances).
- Common-law relationships were intimate relationships; living with roommates or extended family did not count.

2) Child pornography videos (coded positively as 1 = yes)
65% of combined sample; 1% of cases missing

- Refers to child pornography content only; sexual acts involving children and/or the focus is the sexual organs or the anal region of a child.
- Coded based on the offender's collection and/or content accessed online regardless of whether downloaded/saved.
- Refers to any video medium (e.g., VHS tapes, digital movie files); "homemade" videos (videos of perpetrated sexual abuse by the index offender, whether traded or not); as well as those traded by others (of their abuse of children) or commercially produced;
- Included partial video clips (the length of the video did not matter).

3) Child pornography stories (also known as "text" stories) (coded positively as 1 = yes)
26% of combined sample; 4% of cases missing

- Refers to child pornography content only.
- Coded based on the offender's collection and/or content accessed online regardless of whether downloaded/saved.
- Any text stories depicting sex with children.
- Includes any type of story; for example, stories of incest or kidnapping and sexual assault of an unknown child.
- Can be fantasy based or stories documenting sexual offences perpetrated by the offender.
- In a few cases, offenders had "manuals" or "bulletins" outlining how to sexually offend against a child (e.g., how to groom a child and their parents, how to introduce sex to a child) and in all but one case, the offender also had other text stories; we included the sex offending manual as a text story because the manual described and provided stories about adults having sex with children.

4) Evidence interest in child pornography spanned two or more years (coded positively as 1 = yes)
(51% of combined sample; 21% of cases missing

- Does not require continuous or regular activity over two years.
- Measured in years, as it is simpler to calculate; further, the exact day/month when first started to collect or access the material was less commonly known/documented.
- This is an "at least" variable; individuals may have been collecting or accessing child pornography content for longer, we could only use the earliest date documented in the investigative file, including information from the forensic analysis of an offender's computer.
- Any type of child pornography content or method used to collect/access counted (e.g., text stories or images, collected online or offline).
- A prior child pornography arrest or charge date could be used in the calculation of "duration".
- Examples of information used included information offenders shared in online conversations (e.g., indicated in a chat that he has collected for five years), or information shared in an interview (e.g., indicates he has been accessing for five years); there was usually forensic evidence to support the self-report information.

5) Volunteering in a role with high access to children (coded positively as 1 = yes)
9% of combined sample; 1% of cases missing

- Any volunteering (prior or at index investigation) for a role where high access to children was expected; for example, volunteering for child-serving organizations such as Boy Scouts or Girl Guides, a children's program at a local church, coaching a children's sports team, or running an afterschool activity.
- This item was not coded based only on being around related children, being around children for social reasons (e.g., attending a school event or visiting friends with children), or being around children as a result of employment (e.g., as schoolteacher).
- Excluded volunteer work involving unexpected or incidental access to children (e.g., volunteering at a retirement home where a children's choir irregularly performs).

6) Engaging in online sexual communications with a minor or officer posing as a minor (coded positively as 1 = yes)
10% of combined sample; 1% of cases missing

- Includes any type of online communication (e.g., email, instant messaging) with a child that had a sexual component to it.
- Also includes cases where the offender was involved in sexual communication with an undercover officer posing as a child (regardless of whether the offender later states they suspected they were interacting with an officer).
- Sexual communications included asking the child if they had engaged in masturbation or sex, if they had an intimate relationship or would like one, if they were interested in learning more about sex, offering to assist the child in learning more about sex, sharing sexual images or sexual text with the child, indicating they wanted to have sex with the child. .
- In some cases, the offender started chatting with a real child and the account was later taken over by police after they were contacted by the child or the child's guardian.
- Coded positively regardless of whether the offender attempted to make an offline meeting, or showed up for a meeting, with the child/undercover officer.

CASIC Score

(Correlates of Admitted Sexual Interest in Children)

Date Completed:	Completed by:	Information Sources:

Name:	Case Number:

Item Present **0=No, 1=Yes,** **●=Unknown**	**Item**	**Notes**
	1 Never married	
	2 Had child pornography videos	
	3 Had child pornography text stories	
	4 Child pornography activity spanning two or more years	
	5 Volunteering in a role with high access to children	
	6 Engaging in online sexual communications with a minor or undercover officer posing as a minor	
	Total Score	

Appendix C: Other Considerations

We considered a wide range of potential risk variables in our child pornography offender follow-up research. These were informed by the sexual offending literature as well as items suggested by clinicians and police investigators. We considered what information was likely to be available for coding, being mindful of how information might be shared beyond a police investigation. We also paid great detail to the operationalization of items for consistency in coding.

The following is a list of items that we believed had potential but did not statistically predict future sexual offending in our CPORT development sample. They are included here because some users might wonder about the predictive value of other variables. Many of these variables may predict sexual recidivism but may be redundant with existing CPORT items. For example, those with more boy content in our development sample were also more likely to be single, to live alone, have less adult or adolescent pornography, and more likely to volunteer to spend time with children (see Eke & Seto, 2013). Volunteering to spend time with children is also related to admission of sexual interest in children. Those who admitted to sexual interest in child pornography or in children were also more likely to have a wider range of child pornography content (e.g., video and text stories) and to have evidence of interest in child pornography over a longer period of time (see Eke & Seto, 2013 and our Appendix B).

In some cases, the item information was not consistently available (e.g., not all online chat was documented) or had too much missing information to be of benefit. Scoring these items at the time of an investigation, rather than trying to code them based on records after an investigation was closed, could be helpful for future research.

Some variables might be significant predictors of sexual recidivism in larger samples, samples with a higher base rate of recidivism, and/or longer follow-up times. Others might not be valid predictors of sexual recidivism despite their face validity. The benefit of collecting information on these additional items is they can provide context to the offending, and they have future clinical or research applications. For example, a blanket ban on internet or computer use for an individual who spent relatively little time seeking child pornography content or was not involved in online chat with children or others with pedophilic interests might be unnecessarily detrimental on employment and social functioning.

In the development sample, our cases ranged from 1993-2006, with 91% of investigations occurring in the 2000s. In our validation sample, most police investigations took place between 2006 and 2009, with conviction dates ranging between 2006 and 2010; two investigations began in late 2005 but did not overlap with the development sample. It is important to keep in mind that collecting methods and types of content can change over time. As technology and software programming continues to evolve, we may also see changes in content, such as increasingly realistic cartoons or computer generated images of children. We did assess the use of anime and other cartoons to see whether this related to future risk; in our sample it did not. Neither did accessing movies or text stories; rather the breadth of the material accessed was a better indicator of the individual's overall sexual interest in children (again, see Appendix B).

Patterns of collecting can be cyclical, with methods resurfacing over time (e.g., chat rooms becoming popular again). How an individual obtains their child pornography material, or at least how they are detected, might be associated with different individual characteristics. For example, individuals who are reported by third parties (e.g., roommates, family members, IT professionals), detected during the investigation of another incident (e.g., computer fraud, car accident, sexual assault) or detected in online investigations such as peer-to-peer sharing or undercover operations may be somewhat different in relation to their criminal history, sexual interests, and

demographic characteristics (see Eke & Seto, 2013) as well as their risk for recidivism. Such knowledge would be valuable for investigative considerations (e.g., targeting those engaged in online activities) where one consideration is the prioritization of individuals based on the likelihood of past or future contact victims, involvement in trading rings and so forth.

Beyond methods of collecting and type of media (cartoons, real children) perhaps the content details are key as they provide valuable insight into sexual interests and preferences. For example, text stories (regardless of how collected) about loving relationships with children may suggest the individual is also interested in emotional connections to children (e.g., the relationship is described as beautiful and magical) or may provide an indication of thinking errors (e.g., the child makes the sexual advances). Further, knowledge of what a person had on their computer may open dialogue with individuals regarding sexual interests.

The following variables are of potential interest for future research and may be useful for providing more context about risk management with individuals involved in child pornography offences. As stated earlier, we are working to develop a coding form and method and pilot it, for example with police services.

Ages of Children in Child Pornography

- Relative distribution of child age in the child pornography images (categorized as infant/toddler, prepubescent, or pubescent) did not predict sexual recidivism and thus was not included in the CPORT.
- It also did not correlate with admission of sexual interest in children, however it did correlate with evidence of a prior diagnosis of pedophilia/hebephilia and likely would be relevant to current diagnosis (e.g., a predominance of pre-pubescent child images over adolescents or adults may suggest pedophilia).
- Anecdotally, we understand that information shared beyond investigators may focus on the extreme images, such as infants or toddlers; providing a more systematic account of the age distributions of children in the content would aid future research as well as assist clinicians.
- The same might be true for the amount of child pornography relative to adult pornography: someone with a small *proportion* of child pornography (e.g., less than 10% of all content) may be less likely to have a sexual interest in children than someone with a large proportion (e.g., over 80% of all pornography or other content depicts children). Proportion might be important above overall counts of child pornography; someone with fewer images (e.g., 100 images) who has carefully screened and collected these images, and has little to no other sexual images, might have a greater sexual interest in children even in comparison with someone who has 5,000 images that make up less than 5% of their sexual content.
- Perhaps estimates could be made regarding age groupings, at the time of the investigation, across types of sexual content (child, adolescent, and adult).

Other Child Content

- CPORT Item 7 is based on other, non-pornographic child content (child nudity, clothed children).
- Aside from the relevance of gender in risk assessment, other child content may have some importance in the individual's sexual fantasies; in our development sample, more than 80% of individuals had some child nudity content, although most (not all) had less nudity than child pornography.
- The relative amounts of different child content did not predict sexual recidivism in the development sample, and thus is not in CPORT.

- However, documentation of child other material can provide important context and be relevant in treatment and management discussions; for example, those individuals who prefer nude and other child content might have greater social or emotional needs relating to children compared with those who prefer sexually explicit content involving children and adults.
- Of note, some individuals continued to collect nudity/other child content after their index offence, avoiding illegal child pornography content. We knew of two cases in the development sample; this collecting behaviour was not counted as recidivism because it is not a criminal offence (in Canada) to have this kind of child content.

Other Pornography

- The pornography people access and collect can provide an interesting behavioural window into some of their sexual interests (see Seto, 2016). They may not discuss their interests with others and they may not act on these interests, but rather they may go online and access specific pornography content.
- Information about what a person accesses/what is on their computer can highlight sexual preferences along a multitude of dimensions including age, activities (e.g., bondage, voyeurism), and targets (animals, pregnant women).
- In our development sample, we examined both adult pornography in general and paraphilic pornography, whether it depicted children or adults.
- The majority of our sample (90%) had adult pornography, but we were often missing details such as total number of images because this material is not illegal and police may not record legal content.
- We also specifically examined other paraphilic content in each collection as it is not uncommon for individuals to have more than one paraphilic interest (e.g., see Heil & Simons, 2008).
- Most (87%) of our sample had pornography depicting fetish or other paraphilic themes such as bondage or bestiality.
- In our coding, we distinguished between the appearance of any paraphilic content (having any paraphilic content) and content that was considered potentially indicative (e.g., many images, files were descriptively labeled, organized into their own folders, collected over a prolonged period of time) of a paraphilic sexual interest.
- The most common (indicative) paraphilic theme was sadomasochism, with 18% of the sample having pornography considered suggestive. The next most common paraphilic themes were bestiality (15%), fetishism (10%), and urophilia/coprophilia (10%).
- None of the paraphilic themes, assessed dichotomously as *any* (yes/no) or *indicative* (yes/no), predicted sexual recidivism.
- Further, there were no significant differences regarding the presence of adult content or other paraphilic content across the three offender groups (CP only, CP + other offending, CP + contact sex).
- The relative amount of paraphilic content, in comparison to other material accessed or collected, might be meaningful; we could not assess this as we did not have counts of adult or paraphilic content.
- Forensic counts of adult and/or paraphilic content is unlikely to be available as this would be very time and resource consuming, especially when the focus is child pornography and child victim identification.
- Knowing whether individuals had pornography content suggestive of other paraphilic sexual interests could be important for future research on risk assessment and management.

Sexual Interest in Children:

- Sexual interest in children is a key motivator for committing various sexual offences involving children, including child pornography and child molestation (see Seto, 2013); how best to assess sexual interest in children however is not always clear (e.g., see Babchishin, Nunes, & Kessous, 2014).
- Collecting evidence that could relate to the breadth or intensity of sexual interest in children would be helpful across stakeholders, for context relating to offending as well as risk/needs assessments.
- CPORT Item 5 relates to admission of sexual interest in children; however, this item is based on self-report (to police) and could be vulnerable to faking and denial of interests; the CASIC (described in Appendix B) consists of 6 items that predict admission and may assist in assessing sexual interest in children - further research and validation will be important, to more fully understand the psychometric properties of CASIC.
- Other information available in child pornography collections or based on online behaviours might also be helpful, for example: (1) file sharing rules or search criteria (e.g., "girls only! aged 5-12 only! no adult!"), (2) admissions made to others online (e.g., "loved boys since I was a boy, turned on by beautiful sexy boys…" "never had an adult, never want one, kids only"), and (3) postings in child sexual interest groups (e.g., *girl love* or *boy chat* groups). We did not include the collection of this information in our development sample in part because there were poor prospects for this information to be shared with other stakeholders. We are currently testing this extended coding in a validation sample of child pornography cases.
- In our development sample, we did examine whether there was indication an individual had interest in specific children (e.g., rating neighbourhood children for attractiveness); it did associate with admission of sexual interest in children in our CASIC study, but did not predict admission.

Time Involvement with Child Pornography Content: Span and Duration

- We coded evidence of the span of time over which an individual may have been involved with child pornography content; for example, evidence they had been involved in it at some point in the past.
- This information was based on forensic evidence (e.g., time based evidence of downloads), admissions from the individual regarding how long they had been accessing content and evidence of prior child pornography offences.
- The span of time (in years) was not a predictor of recidivism, however was found to correlate with admitted sexual interest in children (see Appendix B).
- Overall, our coding of the item examined the static nature of involvement; we did not necessarily have information about the fluctuating or dynamic aspects of time spent with the content, for example the recency of viewing (in relation to the index charge), how frequently the material was accessed in the last week, month, 3 months or if there have been changes in the frequency of use over time.
- Information relating to time spent thinking of, or engaged in, sexual activity can be an important consideration; for example, in their discussion of psychologically meaningful risk factors for predicting sexual recidivism, Mann, Hanson and Thornton (2010) note the research support for *sexual preoccupation.*

Investment in Child Content

- We assessed variables we believed could relate to the investment an individual had in child pornography content, for example, whether they organized this content (i.e., scored as no effort, low,

moderate or high effort based on whether the individual used groupings to organize their material, used subfolders, detailed labels) or spent time collecting specific images such as known *series*.

- In our development sample, organization of content did not add to the prediction of sexual recidivism.
- In part, the way organization could be coded could be confounded by how content was accessed, e.g., it might already be organized when trading with other individuals involved with child pornography content.
- We also examined the amount of child pornography images, text stories and videos an individual had, with the idea that those with larger collections might have more interest in children and might be more likely to reoffend.
- Larger amounts of material did not predict sexual recidivism, nor did it correlate with admitted sexual interest in children. In part, large collections are fairly easily downloaded. As well, collecting large volumes of material may have more to do with a desire to collect, than a desire to fantasize or masturbate to the material (e.g., some individuals are extremely specific regarding the images they want and may keep fewer images; those they have are important to their fantasy and masturbatory activity).
- There are other variables that could relate to involvement, including financial investment (e.g., purchased new computer for use, invested in faster download speed, purchased software to enhance their use of the internet).
- Documenting this type of information could provide context to an individual's collecting behaviour, could inform case management decisions and also provide other avenues for research.

Investment in Hiding Activities

- We examined one variable that could relate to an effort to hide child pornography activities, or at least a lack of care regarding potential discovery: use of a non-private computer, which we defined as using a computer that others could access, such as a family computer or work computer (we were conscious of the fact that in some cases there may only be one computer for use by a family so we also coded whether there were separate passwords for family users etc).
- In our development sample, this variable was not helpful in predicting risk for sexual recidivism.
- Other potential variables that could assist in understanding an individual's efforts to hide their activities include purchasing encryption software, seeking information on and/or using proxy servers for peer-to-peer sharing, online chats requesting information regarding how to avoid detection/how to secure their computer or content, how to use TOR (The Onion Router, anonymity network software that directs internet traffic through a series of relays to provide anonymity), and so forth.
- Investment could be gradated in some way, from *seeking information* to *implementing strategies*.

Evidence of Emotional Congruence with Children

- For some adults, emotional, social and intimacy needs are fulfilled by children rather than other adults (e.g., see Underhill, Wakeling, Mann, & Webster, 2008; McPhail, Hermann, & Fernandez, 2014; McPhail, Hermann, & Nunes, 2013).
- Some of those who self-identify as having pedophilic interests report that innocence and the playfulness of children is part of what they find attractive (e.g., Wilson & Cox, 1983)
- Evidence of these needs or desires might be reflected in the content an individual accesses as well as their online conversations with others.

- For example, a text story might describe a ‘loving’, ‘consensual’ sexual relationship with a child as opposed to detailing the rape or torture of a child.
- A social preference for children (above that for adults) may also be evident; for example, online chats or comments might reflect having few adult relationships, an individual’s dissatisfaction with adult relationships, or a preference for spending time with children.

Access To Children

- Access to children differentiated contact child sexual offenders from child pornography offenders in a meta-analysis conducted by Babchishin and colleagues (2015).
- In our development research, we examined child pornography offenders’ access to children by coding whether the individual worked with children (e.g., teacher), volunteered to spend time with children (e.g., sports coach), engaged in online sexual communication with children, or resided with children at the time of the index investigation. None of the items significantly predicted sexual recidivism in our CPORT development sample. Volunteering in a role with high access to children and online communication with children (or a police officer posing as a child) are correlates of admitted sexual interest in children (see Appendix B).
- We also coded information regarding evidence of ‘literature’ providing pro adult/child sexual contact discussions or grooming techniques; we had few cases that included this material (e.g., some individuals had bulletins from the North American Man/Boy Love Association, NAMBLA).
- Online chats or email content provides other opportunities to code this type of content; an individual may request assistance in passing a volunteer screening or request help in grooming a specific child, for example how to seek out vulnerable children, develop a sense of trust and how to introduce sex into the relationship. Some examples are given a recent news article by journalist Robert Cribb (2016) https://www.thestar.com/news/world/2016/01/24/predator-and-prey-the-internets-dark-corners.html

Substance Use

- Substance use is a consistent risk factor in both onset and persistence of sexual offending (e.g., see Seto, 2008)
- We coded substance use based on a Likert–type scale with endpoints of *no use* and *severe problems associated with use* (e.g., drunk driving offences, fired from job for using substances). Some of our information included prior treatment for substance use problems.
- In our development sample, substance use did not predict sexual recidivism.
- It is possible that a larger sample or different sources of substance use information (e.g., including systematic self-reports about substance use) would produce different findings.

There are many other psychologically meaningful variables associated with risk for sexual recidivism (see Mann et al., 2010). The ones discussed here have some potential for documentation from reasonably comprehensive police investigation files.

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