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# Child pornography possessors: Comparisons and contrasts with contact- and non-contact sex offenders

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**Abstract** *The advent of the internet has facilitated a dramatic increase in the number of individuals accessing and possessing child pornography and a corresponding increase in referrals for assessment and treatment. Questions remain regarding whether child pornography possessors are more similar to or different from other types of sex offenders, and whether or not assessment and treatment protocols for contact and non-contact sex offenders are applied appropriately to child pornography offenders. The present study compared 50 child pornography offenders, 45 non-contact sex offenders and 101 contact child molesters. The results indicated that the three groups were more similar than different; however, child pornography offenders were distinguished by greater academic and vocational achievement, fewer childhood behaviour problems and by select relational variables. Recidivism rates were low for all groups.*

**Keywords** *child pornography; sexual offenders; non-contact; comparison; child molesters*

## Introduction

Child sexual exploitation has thrived in the unregulated cyberspace environment; convictions for accessing, distributing and producing child pornography increased 1404% between 1996 and 2007 (Federal Bureau of Investigation, 2007). The internet has given impetus to child pornography due to its anonymity, accessibility and affordability (Cooper, 1997). Individuals are now able to access and distribute child pornography from the comfort of their own homes, in privacy and with relatively little risk of detection. It has been estimated that child pornography is a billion-dollar industry worldwide (National Center for Missing & Exploited Children, 2005). In 2003, the number of unique images of child abuse circulating on the internet was estimated at approximately 1 million, with this number increasing by 200 every day (Home Office Task Force of Child Protection, 2003). However, due to the size and mercurial nature of the internet, it is difficult to assess how much child pornography actually exists online.

The resulting influx of child pornography offenders within the justice system has challenged evaluators, treatment providers and justice officials to arrive at determinations regarding how to assess, treat, and manage this previously infrequent division of sexual

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offenders. No evidence-based protocols are currently available to guide the assessment and management of child pornography offenders (Bourke & Hernandez, 2009; Malesky, Ennis & Gress, 2009), although Wakeling, Howard and Barnett's (2011) preliminary work suggests that modified actuarial measures may have some predictive utility. In lieu of established protocols for assessment and treatment, clinicians working with child pornography offenders have been forced to rely upon protocols designed for and validated on non-internet-based sex offenders. The justifiability and wisdom of generalising existing assessment and treatment protocols is dependent upon the degree to which child pornography offenders resemble non-internet-based offenders in terms of clinical and risk-related characteristics. A current issue being debated by clinicians is whether child pornography offenders belong to a separate group of sex offenders or to a previously categorised one, namely child molesters, who are merely using a new technology to carry out their offences (Babchishin, Hanson & Hermann, 2010).

Early research efforts aimed at comparing and contrasting child pornography offenders with sex offenders who have committed "hands-on" offences against children have identified both similarities and differences between child pornography offenders and child molesters. The emerging evidence suggests that child pornography offenders may be distinguishable from child molesters on the basis of intimacy deficits and degree of social isolation. Webb, Craissati and Keen (2007) investigated psychological and socio-affective differences between child pornography offenders and child molesters. In addition to finding that child pornography offenders were significantly younger, they found that they were more likely to have sought out mental health services as an adult, and they also had significantly fewer cohabitating relationships with intimate partners. Similarly, Bates and Metcalf (2007) found that child pornography offenders reported higher levels of emotional loneliness than contact offenders.

Child pornography offenders have been purported to be more sexually deviant than child molesters (Seto, Cantor & Blanchard, 2006). For example, child pornography offenders have been shown to have more problems with sexual self-regulation, be more likely to demonstrate paedophilic sexual interests and be more likely to self-report being sexually attracted to pre-pubescent and adolescent children (Wood, Seto, Flynn, Wilson-Cotton & Dedman, 2009). These findings support the results of Seto et al.'s earlier study (2006), in which child pornography possession was found to be a stronger indicator of a paedophilic sexual arousal than a history of committing an actual contact offence against a child. Krueger, Kaplan and First (2009) did not find differences in diagnosis of paedophilia between child pornography possessors and men arrested for attempting to meet a child, but other significant differences were found, indicating that child pornography possessors were more probably diagnosed with pornography dependence, but less likely with cybersexual dependence. An explanation for this may be that the internet allows access to a very wide range of sexual media and individuals are likely to select their pornography congruent with their preferred sexual interests, while offline sex offenders may be choosing victims based on convenience, or they may be less discerning with whom they pursue sexual gratification. A meta-analytical study reported similar findings, but proposed that the reason why they possess significantly higher sexual deviancy is the result of police activities unintentionally biasing results (Babchishin et al., 2010). It may be the case that the police only proceed with investigating egregious incidents of child pornography use or offenders who have large volumes of child pornography due to limited police resources, and thus only the most sexually deviant become charged and assessed. Again, more research is needed to verify the validity of this finding.

Elliott, Beech, Mandeville-Norden and Hayes (2009) found that relative to the child molesters in their sample, child pornography offenders exhibited lower levels of traits

associated with poor behavioural controls and criminal inclination. Specifically, child pornography offenders were found to be less impulsive, had a poorer capacity for making rapid decisions and were less likely to react over-assertively. Additionally, child molesters have been described as exhibiting higher levels of psychopathy, as indicated by scores on the Psychopathy Checklist—Screening Version (Hart, Cox & Hare, 1995) than child pornography offenders, as well as more antisocial characteristics relating to breaking social rules, attitudes towards sexual assault and acting out (Webb et al., 2007).

Child pornography offenders also appear to differ from child molesters in terms of victim empathy, offence-supportive attitudes and cognitive distortions. Research suggests that child molesters are significantly more likely to have an external locus of control (Bates & Metcalf, 2007; Elliott et al., 2009), suggesting that that contact offenders may, subjectively, perceive less self-control over their behaviour and may be more likely to attribute their behaviour and its consequences to external forces. Babchishin et al. (2010) and Bates and Metcalf (2007) reported that child pornography offenders have relatively higher levels of victim empathy coupled with fewer cognitive distortions. Elliott et al. (2009) suggests that contact offenders may have more deficits in the antisocial cognitions pathway, as evidenced by their greater number of cognitive and victim empathy distortions. These results may indicate that child pornography offenders are less likely to hold maladaptive beliefs related to child sexuality. It may also suggest that child pornography offenders are less likely than child molesters to commit a contact offence against a child in the future or become a repeat offender (Elliott et al., 2009). However, the results of a previous study indicate that child pornography offenders were actually more likely to endorse cognitive distortions that children are sexual beings and willing to engage in sex with an adult (Howitt & Sheldon, 2006). The authors explained this result by suggesting that child pornography offenders fuel their fantasies during masturbation with deviant sexual thoughts about children founded on cognitive distortions about their sexual maturity and behaviour.

The question of whether or not child pornography possessors are likely to progress to committing contact offences against children is an important one. The emerging evidence indicates that although child pornography offenders are more likely to harbour paedophilic sexual interests than child molesters, their tendency to be less criminally inclined and in possession of relatively better behavioural controls contribute to a lower likelihood of committing contact offences, and to lower recidivism rates in general (Seto, 2009). Eke, Seto and Williams (2010) found that over an average follow-up period of 6 years only 6% of child pornography offenders incurred a criminal charge for a contact sexual offence. Child pornography offenders who had a previous contact sexual offence were more likely to re-offend in any capacity, sexually or non-sexually, while offenders with only child pornography charges were much less likely to incur any new offences. Another study reported that none of the child pornography offenders in the researchers' sample were charged with commission of contact sexual offences during the 18-month-long follow-up period (Webb et al., 2007). In comparison, 13% of the child molesters in Hanson and Morton-Bourgon's study (2005) went on to commit another sexual offence during a similar time-period. The apparent disparity between the risk of re-offending for child molesters and child pornography offenders may reflect integral differences in their aetiology and motivations for offending.

Despite the growing accumulation of information regarding the similarities and differences between child pornography possessors and child molesters, only one study has compared and contrasted child pornography offenders with offenders who commit non-contact offences. Seto, Wood, Babchishin and Flynn (2012) compared child pornography offenders with two groups: low-risk child molesters and online solicitation offenders with no prior history of contact offending. They found that child pornography and solicitation

offenders (both non-contact) were more likely to never have lived with a lover than child molesters (contact) and that solicitation offenders were more likely to report haebephilic interests than paedophilic interests compared to the other groups. The differences were purported by the authors to be meaningful, and suggest that considerations should be made with regard to supervision and treatment. Because child pornography offences involve no direct physical contact with a victim, it may be of clinical and theoretical importance to determine if these offenders bear more similarity to other types of non-contact sexual offenders; specifically, those seen under the spectrum of courtship disorders (see Jung, Ennis & Malesky, 2012, for further theoretical discussion). It is plausible that previously described social and relational deficits observed in groups of child pornography offenders and solicitation offenders may influence them to offend in an indirect manner similar to voyeurs and exhibitionists. Child pornography offenders have been noted to exhibit features that have been often observed among voyeurs and exhibitionists, and include greater psychological problems, lower levels of happiness and satisfaction, increased substance abuse, greater use of pornography, increased sexual activity, frequent masturbation and greater sexual deviancy (Långström & Seto, 2006). Compared to offenders who seek out physical contact with a child, child pornography offenders may be sexually excited by the voyeuristic nature of viewing pornography, encouraged by the false sense of security while masturbating and fantasising at home, and comforted by the maladaptive belief that they are not physically hurting a child. To date, there is still much to be known about the similarities and differences between child pornography offenders and non-contact sex offenders.

### *Aim of the current research*

The present study compares and contrasts child pornography offenders with both child molesters and non-contact sexual offenders. The aim of this research is to explore whether child pornography offenders are, as a group, qualitatively distinct from groups of non-contact offenders and contact offenders, in terms of their academic, vocational, social, psychological and criminal histories.

## **Methods**

### *Sample*

The sample of 196 male sexual offenders were referred and/or court-mandated for an assessment of their risk and treatment needs between 2001 to 2009 and received formal convictions for their sexual offences. They were either receiving services prior to or following the receipt of their sentence/disposition. The mean age of the sample was 37.1 years [standard deviation (s.d.) = 14.17]. Fifty offenders were convicted of accessing and/or distributing child pornography, 45 offenders were convicted of non-contact offences that included either exhibitionism or voyeurism and 101 offenders were convicted of child molestation. To ensure that the groups were distinct, the criminal histories of the participants were coded directly from official criminal records to determine the appropriate grouping. Any offenders who had past offences that overlapped with the other two categories were excluded from the analyses. Similar procedures have been observed in other comparative studies (e.g. Seto et al., 2012). Demographic characteristics for each group are listed in Table I.



**Table I.** Descriptive statistics and analysis of variance results for demographic characteristics by offender type

Demographic variables	Child pornography offenders	Non-contact offenders	Child molestation offenders	<i>F</i>	<i>Partial</i> $\eta^2$
Age (in years)	36.7 (12.03) ( <i>n</i> = 47)	37.6 (11.50) ( <i>n</i> = 37)	37.1 (15.81) ( <i>n</i> = 88)	0.05	0.00
Years of education	12.8 (2.44) ( <i>n</i> = 45)	11.0 (2.74) ( <i>n</i> = 38)	11.0 (2.28) ( <i>n</i> = 96)	9.36*	0.10
Number of marriages	1.1 (1.06) ( <i>n</i> = 43)	1.4 (1.87) ( <i>n</i> = 36)	1.5 (1.25) ( <i>n</i> = 88)	1.27	0.02
Number of children	0.6 (0.93) ( <i>n</i> = 45)	1.7 (2.65) ( <i>n</i> = 39)	1.5 (1.85) ( <i>n</i> = 91)	3.84*	0.04
Age at first masturbatory experience	12.3 (2.56) ( <i>n</i> = 20)	13.4 (1.27) ( <i>n</i> = 10)	13.0 (2.24) ( <i>n</i> = 36)	1.11	0.03
Age at first consensual sex	17.9 (3.76) ( <i>n</i> = 33)	16.6 (3.30) ( <i>n</i> = 27)	16.0 (4.55) ( <i>n</i> = 71)	2.34	0.04
Number of partners	18.5 (27.96) ( <i>n</i> = 40)	24.1 (41.63) ( <i>n</i> = 32)	13.4 (27.15) ( <i>n</i> = 73)	1.36	0.02

\**p* < .05. Means, standard deviations in parentheses and sample sizes are listed.

### Measures

Historical variables related to education and employment, social, sexual and criminal behaviour, mental health, substance abuse, personality inventory scale scores and recidivism data were also coded.

*Offender characteristics.* Seven demographic variables were examined (type of data are noted in parentheses): (a) age at the time of the index offence (continuous); (b) developmental, childhood and adolescent history, which examines whether there were any behavioural problems prior to age 18 (dichotomously scored as absent versus present); (c) academic achievement and behaviour, which looks at achievement and maladjustment in school (history of suspension/expulsion, failed grade, poor school adjustment and completion of post-secondary were scored dichotomously as absent versus present; and years of education recorded as a continuous variable); (d) employment information at the time of the index offence (scored dichotomously with history of being fired versus not applicable and highly skilled versus labour-type work); (e) sexual and relationship history (scored dichotomously as daily masturbation versus not, single versus not single status and continuous variables of age at first masturbatory experience, age at first consensual sex, number of partners, number of children); (f) treatment history (past receipt of mental health services, prior sex offender treatment and successful completion were scored dichotomously as absent versus present); and (g) substance abuse history [scored dichotomously with presence versus absence of teenage alcoholism; marijuana, lysergic acid diethylamide (LSD) and cocaine use, alcohol use and drug use until index offence].

*Personality Assessment Inventory (PAI; Morey, 1991).* The PAI is a self-report questionnaire with 344 items measuring personality characteristics that are most relevant in a clinical setting (Morey & Quigley, 2002). Eleven clinical scales that included borderline features, antisocial features, alcohol problems, drug problems, aggression, suicidal ideation, stress, non-support, treatment rejection, dominance and warmth were included with the *t*-scores used in the analyses. The three subscales of the antisocial features scale were included: behaviours, egocentricity and stimulus-seeking.

*Criminal history items and risk assessment score.* Variables representing aspects of past offending were analysed to investigate between-groups differences in criminal history. For the purpose of the current study, four continuous variables, age at first conviction, prior number of

convictions, prior number of violent convictions and prior number of sex offence convictions, along with three categorical variables, prior non-sexual violence conviction (absent versus present), prior sexual charges and/or convictions (none versus one versus two +) and prior sentencing dates (three or less versus four or more), were included in the analyses. The latter three categorical variables were taken from the Static-99 (Harris, Phenix, Hanson & Thornton, 2003).

An overall risk score was calculated for each offender, based on the Static-99, and included in our comparison analyses. The Static-99 is a risk assessment tool for sexual offenders that determines the level of risk they pose to the community through possible re-offending (Harris et al., 2003). It is a 10-item form that bases the estimation of risk on only static variables, which have been established empirically to be associated with sexual recidivism, and includes offender age at release, ever lived with a lover for at least 2 years, any non-sexual violent index conviction, any prior non-sexual violent conviction, number of prior charges or convictions for sexual offences, prior sentencing dates, any convictions for non-contact sex offences, any unrelated sexual victims, any stranger sexual victims and any male sexual victims. A modified Static-99 total that excluded the last four variables related to victims and contact offending was calculated (i.e. modified Static-99 total score included six of the 10 items). Like the Seto et al. (2012) paper, we excluded the three victim items (any unrelated sexual victims, any stranger sexual victims, any male sexual victims). In addition, we excluded the item “any convictions for non-contact sex offences”, as we had already selected our groups by ensuring that non-contact groups have no prior contact offending in their history and inclusion would artificially increase risk for two of the groups.

*Recidivism.* In order to assess recidivism accurately, offenders were included in the analysis only if the follow-up period was longer than 2 years to allow for a minimal amount of time post-release. Data from criminal records received from the Canadian Police Information Centre (CPIC) and the provincial Correctional Management Information System (CoMIS) were analysed to determine: (a) the number of new convictions; (b) whether incarceration, probation or fines levied at sentencing; (c) the date and type of any first new sexual offence; and (d) whether any of the new sexual offences match the type of the previous index sexual offence.

### *Procedure*

Clinical files were reviewed at an outpatient forensic clinic to identify patients with a sexual offence on their records; hence, research participants were not solicited for this study. The region where the research was conducted abides by legislation, which sets out rules that respect the use and disclosure of health information for research purposes. The present research was reviewed by a research ethics board which has been designated to review research proposals addressing the use and disclosure of health information, and it was deemed unreasonable and impractical to obtain consent directly from offenders, as they were no longer receiving services from the institution. Therefore, consent was waived for the purposes of conducting this research.

The case files that were reviewed contained assessment reports, criminal records, case notes, offenders' reports, demographic information and some description of victim information. Files were coded retrospectively and no additional measures were administered for the purpose of the research. Because not all variables were available in the files for all offenders, sample sizes varied depending on the analysis. The present study is part of a larger database in which 406 variables were coded from the case files on each offender. To ensure that we

maintained strong inter-rater reliability, four research assistants received a full day of training on the variables and were examined on three cases to ensure that they coded the variables reliably. Subsequently, five offenders' case files were coded independently by two raters. For a majority of the variables included in this research (i.e. no calculations were conducted when assistants did not code a variable on more than two of the five files; this applied only to nine of the 40 variables), categorical variables were examined using percentage agreements and kappa statistics. Twenty variables had 60–100% agreement between coders, with kappa values ranging from 0.20 to 0.67. Four variables had an agreement of less than 60% and included whether the offender was suspended from school, ever fired from a job, accessed mental health services and ever used drugs before the index offence (kappas ranged from 0.12 to 0.38). Seven variables are continuous. Correlations ( $r$ ) were calculated, although based on a very small sample size, and ranged from 0.42 to 0.99. Only one variable, number of children, performed poorly in terms of reliability. A reason that accounted for some of these differences between raters was the time that the coding was completed. For example, research assistants examined the same files several months apart and the files, when active, included additional information not available at the time of the first coding.

## Results

To compare child pornography offenders with child molesters and non-contact sexual offenders,  $\chi^2$  tests were used to test categorical variables, and two-tailed analyses of variance (ANOVAs) were used to examine continuous variables. Significant main effects were examined by *post-hoc* analysis using the Bonferroni procedure. Due to the compounded effect of a limited sample size and missing data, numerous variables were excluded from the analyses as the assumptions of the statistical tests were not met. Inferential statistics were conducted on demographic variables, development and historical variables, criminal histories, psychometric testing results and recidivism, using an alpha of 0.05.

### *Education and work history*

The three sex offender groups were compared on variables related to their age, school behaviour and academic achievement; refer to Tables I and II for descriptive information and inferential analyses. The analyses revealed that the three sex offender groups were equivalent in terms of their overall age at the time of their assessment, elementary school maladjustment, childhood aggression, childhood peer rejection and history of being fired from a job (all  $ps > .05$ ). However, the samples displayed significant variability in terms of their histories for suspension/expulsion from school, grade failure, school adjustment, completion of post-secondary education and occupational skill level. Fewer child pornography offenders reported being suspended or expelled during their years at school than did non-contact offenders and child molestation offenders. Separate *post-hoc*  $\chi^2$  analyses revealed that child pornography offenders differed significantly from both non-contact offenders ( $\chi^2_{(1)} = 6.7, p < .01$ ) and child molesters ( $\chi^2_{(1)} = 7.7, p < .01$ ) on this variable. Fewer than a quarter of child pornography offenders had ever failed or been held back a grade, which was less than the child molesters ( $\chi^2_{(1)} = 7.7, p < .01$ ) but no different from the non-contact offenders. Poor school adjustment, as evidenced by serious behaviour or attendance problems, was also identified in one-third of child pornography offenders, but in more than half of non-contact and child molestation offenders. *Post-hoc*  $\chi^2$  analyses indicated that the elementary school adjustment of child pornography



offenders was similar to that of non-contact offenders, but was statistically better than the school adjustment of child molesters ( $\chi^2_{(1)} = 7.1, p < .05$ ).

Child pornography offenders, on average, completed 2 more years of school than both non-contact offenders ( $t_{(82)} = 2.93, p < .01$ ) and child molestation offenders ( $t_{(142)} = 5.06, p < .001$ ), with no difference between the latter two groups (see Table I). Child pornography offenders were also found three to four times more likely to have attended post-secondary than both non-contact offenders ( $\chi^2_{(1)} = 8.0, p < .01$ ) and child molesters ( $\chi^2_{(1)} = 22.0, p < .001$ ) (see Table II).

Regarding employment at the time of the index offence, child pornography offenders were twice as likely to be engaged in skilled employment than were non-contact offenders ( $\chi^2_{(1)} = 5.1, p < .05$ ) and child molesters ( $\chi^2_{(1)} = 7.1, p < .01$ ). Further  $\chi^2$  analyses revealed that these pairwise comparisons were statistically significant.

For all of the above significant findings, non-contact offenders did not differ from child molestation offenders on any of these variables.

*Sexual and relationship history*

The three samples were compared on their sexual histories and current relationship status. Descriptive statistics are presented in Table I for continuous variables and in Table II for categorical variables. The three groups demonstrated no significant variability in lifetime total number of marriages, but there were differences in the percentage of offenders in each group who were married at the time of the index offence. More (68%) child pornography offenders were single at the time of the index offence than non-contact offenders (50%) ( $\chi^2_{(1)} = 4.1, p < .05$ ) and child molesters offenders (43%) ( $\chi^2_{(1)} = 10.6, p < .01$ ). The percentage of non-contact offenders and child molesters who were single when they committed their index offence did not differ. Furthermore, significant variability was observed between groups with

**Table II.** Percentages, frequencies and  $\chi^2$  results for education and work history and sexual and relationship history by offender type

Variables	Child pornography offenders	Non-contact offenders	Child molestation offenders	$\chi^2$
Education and work history				
Elementary school maladjustment	47% (17/36)	53% (18/34)	59% (46/78)	1.43
Childhood aggression	12% (5/41)	34% (11/32)	20% (17/71)	5.08
Suspended or expelled	21% (8/38)	52% (14/27)	49% (32/66)	9.08**
Evidence of childhood peer rejection	53% (21/40)	39% (11/31)	43% (37/86)	3.82
Failed grade or held back	24% (10/42)	44% (14/32)	50% (38/76)	7.75*
Poor school adjustment	36% (16/45)	58% (20/35)	60% (52/87)	9.35*
Completed post-secondary education	48% (22/46)	10% (7/38)	11% (11/98)	23.17***
Ever fired from job	48% (11/23)	41% (7/17)	40% (23/58)	0.46
Skilled employment during index offence	54% (21/39)	26% (7/27)	28% (18/65)	8.58*
Sexual and relationship history				
Single at time of offence	68% (34/50)	50% (20/40)	43% (43/101)	10.64**
Masturbates daily or more than daily	35% (10/29)	45% (9/20)	22% (10/45)	3.63

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < 0.001$ .

regard to average number of biological children. *Post-hoc* analyses revealed that child pornography offenders had significantly fewer biological children than both non-contact offenders ( $t_{(83)}=2.48, p<.05$ ) and child molesters ( $t_{(137)}=2.97, p<.01$ ). No difference was found between non-contact and child molestation offenders.

No between-groups differences were observed in relation to variables representing onset (i.e. age at first masturbation experience and at first consensual sex) and frequency of sexual behaviour (i.e. number of sexual partners, daily masturbation).

*Mental health*

The three sex offender groups were compared on their degrees of contact with mental health services and whether or not they had received any form of treatment prior to their offences (see Table III for descriptive statistics and frequencies). The analyses revealed that the samples did not differ on whether they accessed mental health services, received prior sex offender treatment and completed treatment successfully.

The three groups were compared on 11 selected psychopathology and personality scales of the Personality Assessment Inventory (PAI). The analysis revealed no differences on 10 of the 11 scales. Child pornography offenders demonstrated lower scores than child molesters ( $t_{(68)}=2.92, p<.01$ ) on the warmth scale, which represents the degree to which one is supportive and nurturing (Morey & Quigley, 2002). Non-contact offenders did not differ from the other two samples in their levels of warmth. When the subscales of the antisocial features scale were examined, it was found that non-contact offenders generated significantly higher scores than

**Table III.** Descriptive and inferential statistics for mental health, personality and symptomatology variables by offender type

Variables	Child pornography offenders	Non-contact offenders	Child molestation offenders	$\chi^2/F$	Partial $\eta^2$
Accessed mental health services	54% (26/48)	38% (15/40)	43% (42/97)	2.65	
Prior sex offender treatment (community or inpatient)	11% (5/45)	20% (8/40)	11% (10/95)	5.87	
Successfully completed	90% (28/31)	77% (17/22)	81% (48/59)	1.81	
Personality Assessment Inventory scales					
Borderline features	57.2 (12.63)	53.0 (10.28)	56.1 (12.14)	0.58	0.01
Antisocial features	55.8 (7.47)	58.4 (10.19)	54.1 (9.70)	1.27	0.03
Antisocial behaviours (ANTA)	59.5 (8.49)	62.7 (7.53)	58.4 (8.94)	1.38	0.03
Antisocial egocentricity (ANTE)	49.1 (8.18)	56.9 (16.62)	48.9 (9.76)	3.09*	0.07
Antisocial stimulus-seeking (ANTS)	52.5 (10.39)	54.5 (10.90)	51.8 (11.22)	0.33	0.01
Alcohol problems	50.8 (7.58)	56.0 (17.17)	54.6 (14.72)	0.82	0.02
Drug problems	50.4 (10.31)	54.4 (12.24)	54.2 (13.10)	0.86	0.02
Aggression	47.2 (7.68)	50.1 (11.20)	49.0 (10.54)	0.42	0.01
Suicidal ideation	58.3 (21.03)	51.5 (8.39)	59.5 (20.74)	0.98	0.02
Stress	58.9 (8.72)	58.0 (17.45)	55.9 (11.12)	0.56	0.01
Non-support	56.8 (12.57)	49.9 (9.22)	50.9 (10.41)	2.81	0.06
Treatment rejection	43.2 (10.40)	47.1 (8.23)	42.8 (10.38)	1.03	0.02
Dominance	46.7 (10.31)	50.1 (12.87)	47.3 (9.50)	0.55	0.01
Warmth	42.6 (11.79)	47.3 (11.31)	50.3 (9.50)	4.15*	0.09

\* $p < .05$ . For the Personality Assessment Inventory (PAI) items, means and standard deviations in parentheses are listed, and sample sizes are as follows: child pornography offenders,  $n = 23$ ; non-contact offenders,  $n = 15$ ; and child molestation offenders,  $n = 49$ .

child molestation offenders ( $t_{(59)}=2.26, p<.05$ ) on the antisocial–egocentricity scale, but child pornography offenders did not differ significantly from either comparison group. No differences were noted on the antisocial behaviour and antisocial stimulus-seeking subscales.

*Substance abuse history*

When compared on the basis of drug and alcohol histories and current usage (see Table IV), analyses revealed that the samples did not differ in prevalence of teenage alcoholism, marijuana use or LSD use. They differed in their past use of cocaine, with more non-contact offenders having a history of using cocaine than either child pornography ( $\chi^2_{(1)}=5.4, p<.05$ ) or child molestation offenders ( $\chi^2_{(1)}=4.3, p<.05$ ). No significant variation was found between child pornography and child molestation offenders in terms of their cocaine usage.

Although the samples did not differ in their use of alcohol around the time preceding the index offence, non-contact offenders were more likely than child pornography and child molesters to have used drugs, as shown in the pairwise comparisons between non-contact offenders and child pornography offenders ( $\chi^2_{(1)}=5.3, p<.05$ ) and non-contact and child molestation offenders ( $\chi^2_{(1)}=6.5, p<.05$ ).

*Criminal history*

The groups were compared on criminal history items, and percentages, frequencies and  $\chi^2$  are listed in Table V. The analyses revealed that no differences were found among the groups in terms of their age at first conviction, and the number of prior convictions, prior sexual offence convictions, prior non-sexual offence convictions and prior sexual offence charges. Significant variation was found for only two variables. Analyses revealed that non-contact offenders had higher numbers of violent convictions than both child pornography offenders ( $t_{(80)}=3.0, p<.01$ ). No difference was found between child pornography and child molestation offenders or non-contact and child molestation offenders. Regarding the total number of prior sentencing dates, *post-hoc*  $\chi^2$  analyses revealed that child pornography offenders had fewer prior sentencing dates than non-contact offenders ( $\chi^2_{(1)}=6.41, p<.05$ ) but no differences emerged between child molestation offenders and the other two groups.

Statistical significance was found among the groups using the modified Static-99 total; however, the effect size is extremely small. Non-contact offenders scored higher than child pornography offenders ( $t_{(79)}=2.39, p<.05$ ) but there were no differences between child molestation offenders and either the child pornography or non-contact offenders.

**Table IV.** Percentages, frequencies and  $\chi^2$  results for substance abuse variables by offender type

Variables	Child pornography offenders	Non-contact offenders	Child molestation offenders	$\chi^2$
Teenage alcoholism	23% (9/40)	26% (10/38)	37% (34/88)	4.01
Marijuana use	47% (26/45)	71% (27/38)	68% (64/94)	1.97
LSD use	23% (10/43)	31% (11/35)	28% (25/90)	0.66
Cocaine use	21% (9/43)	45% (17/38)	26% (24/92)	6.32*
Used alcohol until index offence	89% (39/44)	95% (35/37)	91% (87/96)	0.90
Used drugs until index offence	42% (19/45)	70% (26/37)	48% (43/90)	7.26*

\* $p<.05$ .

**Table V.** Descriptive and inferential statistics results for criminal history variables by offender type

Variables	Child pornography offenders	Non-contact offenders	Child molestation offenders	$F/\chi^2$	Partial $\eta^2$
Age at first conviction	33.6 (13.94) ( $n = 38$ )	26.1 (12.21) ( $n = 34$ )	29.1 (15.73) ( $n = 82$ )	2.47	0.03
Prior number of convictions	1.5 (4.44) ( $n = 45$ )	4.6 (8.12) ( $n = 37$ )	3.8 (8.66) ( $n = 92$ )	1.87	0.02
Prior number of violent convictions	0.2 (0.51) ( $n = 45$ )	1.3 (2.42) ( $n = 37$ )	0.6 (1.26) ( $n = 92$ )	5.83*	0.07
Prior number of sex convictions	0.5 (2.21) ( $n = 45$ )	1.0 (1.85) ( $n = 37$ )	0.4 (1.00) ( $n = 92$ )	1.56	0.02
Prior non-sexual violence conviction	9% (4/43)	20% (8/40)	8% (8/99)	2.39	
Prior sex charges	( $n = 43$ )	( $n = 40$ )	( $n = 100$ )	9.51	
none	81% (35)	63% (25)	78% (78)		
1	12% (5)	12% (5)	14% (14)		
2 +	7% (3)	25% (10)	8% (8)		
Prior sentencing				6.68*	
3 or less	88% (38/43)	65% (26/40)	79% (78/99)		
4 or more	12% (5/43)	35% (14/40)	21% (21/99)		
Modified Static-99 total <sup>1</sup>	2.1 (0.98) ( $n = 42$ )	3.0 (1.73) ( $n = 39$ )	2.5 (1.27) ( $n = 94$ )	4.72*	0.05

\* $p < .05$ . <sup>1</sup>Modified total included offender age at release, ever lived with a lover for at least 2 years, any non-sexual violent index conviction, any prior non-sexual violent conviction, number of prior charges or convictions for sexual offences and prior sentencing dates.

Recidivism

The three offender groups were compared on the number and types of new offences to determine recidivism rates and the severity of any newly acquired convictions. Percentages, frequencies and  $\chi^2$  of the analyses are listed in Table VI. Low observed recidivism rates prevented statistical analyses from being conducted to determine whether there were any significant differences between the three samples on specific types of recidivism (e.g. sexual, violent). Eleven per cent of child pornography offenders, 18% of non-contact offenders and 14% of child molestation offenders went on to commit a new offence of any kind. Concerning sexual recidivism, 7% of child pornography offenders, 5% of non-contact offenders and 5% of child molestation offenders incurred a new sexual conviction after their index offence. For all

**Table VI.** Recidivism outcome by offender type

Recidivism variables	Child pornography offenders	Non-contact offenders	Child molestation offenders	$\chi^2$
Offender recidivated	11% (5/45)	18% (7/40)	14% (14/101)	1.07
Type of new charge				6.55
Sexual	7% (3/45)	5% (2/40)	5% (5/101)	
Sexual interference	0% (0/4)	0% (0/2)	67% (4/6)	
Sexual assault	0% (0/4)	0% (0/2)	33% (2/6)	
Exposure	0% (0/4)	50% (1/2)	0% (0/6)	
Voyeurism	0% (0/4)	50% (1/2)	0% (0/6)	
Child pornography	100% (4/4)	0% (0/2)	0% (0/6)	
Violent	0% (0/45)	0% (0/40)	3% (3/101)	
Technical	2% (1/45)	8% (3/40)	2% (2/101)	
Other	2% (1/45)	5% (2/40)	4% (4/101)	

\*  $p < .05$ .

the offenders, the new sexual offences matched their index offences. While various other convictions that were non-sexual and non-violent were committed in low numbers by each sexual offender group, child molestation offenders were the only category to commit a new violent offence (3%). With the small base rate, the length of time between the date of release and the date of the new offence was examined and no differences emerged among the child pornography offenders (mean = 13.5 months, s.d. = 17.27, range 1–43), non-contact offenders (mean = 23.7, s.d. = 16.59, range less than 1–44) and child molestation offenders (mean = 17.9, s.d. = 12.53, range 2–44),  $F_{(2,26)} = 0.76$ , not significant.

## Discussion

On the whole, comparisons between child pornography possessors, non-contact sex offenders and child molesters revealed that the three sex offender groups were largely similar to one another on the basis of personality traits, mental status, psychiatric history, intimate relationships, sexual and criminal history. Between-group differences that were identified fell within the realm of academic achievement and elementary school behaviour and, to a lesser extent, among variables that are related indirectly to interpersonal functioning.

Consistent with past research by Bates and Metcalf (2007) and Endrass et al. (2009), child pornography offenders completed, on average, three more years of schooling than the other two sex offender groups, were less likely to have failed a grade or been suspended or expelled, and more likely to have gone on to receive post-secondary education. The results from past studies (i.e. Bates & Metcalf, 2007; Endrass et al., 2009) that found child pornography offenders to have greater rates of employment than child molesters were not replicated by our data. Child pornography offenders were, however, more likely to have been employed in a skilled labour position at the time that their index offences were committed, a finding that may be consistent with observed distinctions in terms of superior educational achievement.

While previous research has suggested that child pornography offenders have more sexual self-regulation problems than child molesters (Wood et al., 2009), those results were not replicated in the current study. The three groups in our study did not differ in terms of onset of masturbation, age at first consensual sexual experience or total number of self-reported sexual partners. Although nearly twice as many non-contact sex offenders reported masturbating on a daily basis as child molesters, self-report frequency of masturbation was not statistically different between groups, a fact that may be attributable to lack of statistical power due to small sample size.

Between-group comparisons on variables associated with the presence or absence of intimate relationships yielded somewhat mixed results. All three groups were equally likely to have been in a cohabitating relationship in the past and the groups did not differ in terms of number of marital relationships in the offender's lifetime. However, the finding that child pornography offenders have fewer biological children and that they are more probably single at the time of their offence may lend support to previous research findings that child pornography offenders report more emotional loneliness than child molestation offenders (Bates & Metcalf, 2007) and are less likely than child molesters to have lived with their partners (Webb et al., 2007). Although speculative, these results raise questions regarding whether or not the low rates of contact sex offences against children observed among samples of child pornography possessors might be at least partially attributable to lack of direct or immediate access to potential child victims.

Regarding psychiatric history and self-reported personality characteristics and mental health variables, all three offender groups were clinically unremarkable and largely



indistinguishable from each other. They were equally likely to have accessed mental health services in the past, with approximately one-third to one-half of each group having done so. Groups did not differ on 12 of the 14 clinical scales generated by each offender's self-report on the PAI, and average group scores for all groups on all 14 of the PAI clinical scales fell within the clinically insignificant range. Level of egocentricity differentiated non-contact offenders from the other two groups, and child molesters described themselves as having greater interpersonal warmth than either of the other two groups. This latter finding is consistent with the previously mentioned research claiming that child pornography offenders report higher levels of emotional loneliness and are more likely to be single. It is possible that child pornography offenders report less interpersonal warmth not due to an overall dislike for interpersonal relationships, but rather because their lack of social skills makes the experience of close interpersonal relationships discomforting and anxiety-provoking. This, in turn, may result in decreased desire and motivation to maintain close relationships.

With regard to substance use histories, non-contact offenders were more likely to have used drugs as a youth and as an adult and, specifically, used cocaine. Child pornography and child molestation offenders had more similarity in their illicit drug use than did either group compared to non-contact offenders. Previous research looking at substance abuse in a sample of exhibitionists comparably found that one-third displayed patterns of drug abuse (Bader, Schoeneman-Morris, Scalora & Casady, 2008). Others have speculated that this elevated rate of drug use among non-contact offenders may be reflective of lower socio-economic status, delays in school, pleasure-seeking tendencies and poor family relationships (De Micheli & Formigoni, 2002). It is suggested here that elevated levels of drug abuse among non-contact offenders might be suggestive of self-regulation and impulse control difficulties.

When factors associated with criminal history were examined, very few differences emerged between child pornography offenders and child molesters. Similarly, an analysis of the recidivism rates supports past research indicating a very small number of child pornography offenders are convicted of further sexual offences (Eke et al., 2010; Seto & Eke, 2005). Although other research has noted that recidivism rates of child molesters appear to be higher than recidivism rates of child pornography offenders, our study does not offer support for this conclusion. However, our base rates overall may be low and the time for follow-up may be too short. Interestingly, the small number of offenders who recidivated subsequently committed crimes that matched their group assignment based on their index offence. This finding suggests, albeit with limited data, that despite similarities across the groups on other variables, there may be some specialisation of offending.

In summary, it may be surmised from these results that non-contact offenders are not significantly dissimilar to child molestation offenders, and that child pornography offenders diverge equally from both contact and non-contact sexual offenders. Previous research has shown that a child pornography offence is more indicative of paedophilia than is a conviction of child molestation (Seto et al., 2006). It is possible that this child pornography sample captured the qualities of individuals with paedophilic interests and, by deselecting those child pornography offenders who did have contact offences in their criminal histories, this study has potentially highlighted the narrow population of offenders who are sexually aroused by children but have not offended against them.

One may theorise that child pornography offenders have higher levels of internal inhibition, as they were less likely to have used drugs, more likely to complete post-secondary schooling and more likely to procure a skilled occupation. They also demonstrated characteristics that would increase external inhibitions and decrease ability to overcome the resistance of a child. Based on the lower numbers of biological children and greater likelihood of being single, child pornography offenders were less likely to be in close proximity with a



child. Lack of proper communication skills and few social relationships may increase the likelihood for such offenders to carry out online offending. Although child pornography offenders have high rates of paedophilic sexual interests (Seto et al., 2006), the characteristics of the child pornography offenders found in this study may sufficiently circumscribe their sexual arousal and inhibit them from acting on it. Consonant with Finkelhor's precondition theory (1984), proposing that four conditions are necessary before a sexual offence against a child can occur (namely, sexual motivation, lack of internal inhibitions, lack of external inhibitions and lack of resistance from the child), the absence of at least two of these conditions may reduce the likelihood of child pornography offenders committing a sexual transgression against a child victim.

Because child pornography offenders have greater internal and external inhibitions that lower their risk of a contact offence, it is reasonable to conclude that they would benefit more from treatment tailored to maintaining these inhibitions and decreasing their unique characteristics of emotional loneliness and interpersonal difficulties. The current practice of treating these offenders alongside child molestation offenders who do not have these inhibitions may be inefficient, as time is wasted teaching child pornography offenders basic skills they may already possess (Elliott & Beech, 2009; Middleton, 2004). Their unique characteristics may necessitate more advanced education and training for them during treatment, and perhaps these are best guided with appropriate theoretical models (Jung et al., 2012). In addition, the goal of preventing child pornography offenders from re-offending and, ultimately, never incurring a contact offence may be more effective if judicial officials focused on sentencing decisions that maintained the natural inhibitions in child pornography offenders, such as their employment, sobriety and lack of contact with children. Unfortunately, a recent study suggests that the judiciary does not always include such external inhibitors in their sentencing (Jung & Stein, 2012).

This study considers theories beyond aggregating child pornography offenders with child molestation offenders. Although the findings contribute to the empirical literature and increase our understanding of child pornography offenders, the effect sizes reported here are relatively small and replication of our findings would be recommended with larger samples and longer follow-up periods. Another limitation is the small number of voyeurs included in our sample of non-contact offenders. This was particularly limiting, as a comparison between child pornography offenders and voyeurs would have been more logical than with exhibitionists. Typical of sex offender research is the sole inclusion of offenders who have come into contact with the justice system. Data on offenders who have not been charged is difficult to attain, yet could possibly be very important in understanding these offenders as they may represent vastly differing characteristics.

Although our study did not include offenders with mixed offences due to the small number of mixed offenders, it would be important to establish whether there are any differences between child pornography offenders who have had contact offences against children and child pornography offenders with no contact offences, as such a study would provide insight into variables that may lead to contact offending. Another direction of inquiry may be to clarify the role played by paedophilia in viewing child pornography. One previous study has established the groundwork showing that child pornography offenders have elevated rates of paedophilic tendencies (Seto et al., 2006), but the influence these tendencies have on aetiology, risk and recidivism remains unclear.

In conclusion, this study investigated where child pornography offenders fall within the spectrum of contact and/or non-contact sexual offenders. While the results from this study provide evidence for elementary similarities among child pornography, non-contact and child molestation offenders, significant differences imply that child pornography offenders do possess

integral differences from both sex offender groups. These differences lie mainly in child pornography offenders' greater levels of educational success and higher levels of inhibitions that may explain their choice to proceed with online offences versus contact offences. Based on previous theoretical paradigms regarding the pathway towards contact offending, it would appear that child pornography offenders who have no history of contact offences are at minimal risk for progressing to become child molestation offenders. Preliminary results from this study would suggest that child pornography offenders do not fit perfectly into the clinical molds of contact or non-contact sex offenders. Further research is needed to verify the extent of the differences and similarities, and the future direction in which assessment, treatment and sentencing for child pornography offenders should advance.

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