

Child Pornography Offenses Are a Valid Diagnostic Indicator of Pedophilia

Michael C. Seto

Centre for Addiction and Mental Health, Toronto, Ontario,
Canada, and University of Toronto

James M. Cantor

Centre for Addiction and Mental Health, Toronto,
Ontario, Canada

Ray Blanchard

Centre for Addiction and Mental Health, Toronto, Ontario, Canada, and University of Toronto

This study investigated whether being charged with a child pornography offense is a valid diagnostic indicator of pedophilia, as represented by an index of phallometrically assessed sexual arousal to children. The sample of 685 male patients was referred between 1995 and 2004 for a sexological assessment of their sexual interests and behavior. As a group, child pornography offenders showed greater sexual arousal to children than to adults and differed from groups of sex offenders against children, sex offenders against adults, and general sexology patients. The results suggest child pornography offending is a stronger diagnostic indicator of pedophilia than is sexually offending against child victims. Theoretical and clinical implications are discussed.

Keywords: pedophilia, child pornography, sexual arousal, phallometry, diagnosis

Justice statistics suggest that the number of child pornography¹ investigations is increasing (Finkelhor & Ormrod, 2004). Clinicians may, therefore, be increasingly asked to assess child pornography offenders with regard to decisions about risk, treatment, and supervision. A particularly germane question in these clinical assessments is whether the child pornography offender is a pedophile, given the intuitive link between possession of child pornography and pedophilia, defined as a persistent sexual interest in prepubescent children (American Psychiatric Association, 2000).

The present study was conducted to determine whether child pornography offenses are a valid diagnostic indicator of pedophilia. Clinicians currently rely on three potential sources of information when considering the diagnosis of pedophilia: self-report, a history of sexual behavior involving children, and psychophysiological assessment. All of these sources have their limitations. Self-report regarding an individual's sexual interests is the simplest to obtain, but some individuals will deny having pedophilic interests, given the potential social consequences of such a disclosure (see Jenkins, 1998). An individual's history of

sexual offenses, in terms of the number, gender, age, and relatedness of child victims, is informative (Seto & Lalumière, 2001), but it only approximates the offender's interests because it is limited to known victims. The number of documented child victims of sexual offenses may underestimate the actual number of children with whom the individual has had sexual involvement, and in some cases, it is limited to the children who were accessible to the offender, irrespective of his interests. Psychophysiological assessment methods such as viewing time (e.g., Abel, Huffman, Warberg, & Holland, 1998; Harris, Rice, Quinsey, & Chaplin, 1996) and phallometry (Blanchard, Klassen, Dickey, Kuban, & Blak, 2001; Freund & Blanchard, 1989; Freund & Watson, 1991; Seto, Lalumière, & Blanchard, 2000; Seto, Lalumière, & Kuban, 1999) provide an objective method of assessing sexual interests, but they also can be vulnerable to response suppression.

Thus, identifying new sources of information about pedophilia would have both clinical and theoretical applications. Child pornography offending is a promising candidate indicator, given the experimentally demonstrated effects of mainstream adult pornography exposure on attitudes about women, sexual perceptions, and aggressive behavior (for a recent review, see Seto, Maric, & Barbaree, 2001). However, relatively little is known about child

Michael C. Seto, Centre for Addiction and Mental Health, Toronto, Ontario, Canada, and Department of Psychiatry and Centre of Criminology, University of Toronto, Toronto, Ontario, Canada; James M. Cantor, Centre for Addiction and Mental Health, Toronto, Ontario, Canada; Ray Blanchard, Centre for Addiction and Mental Health, Toronto, Ontario, Canada, and Department of Psychiatry, University of Toronto, Toronto, Ontario, Canada.

We thank Meredith Chivers, Grant Harris, and Martin Lalumière for their helpful comments on an earlier version of this article.

Correspondence concerning this article should be addressed to Michael C. Seto, Law and Mental Health Program, Centre for Addiction and Mental Health, 250 College Street, Toronto, Ontario, Canada, M5T 1R8. E-mail: michael_seto@camh.net

¹ We define child pornography as visual depiction of children with their genital or anal areas uncovered or of children in sexual situations, consistent with the statutory definitions of Canadian and American legislation (Sec 163.1 of the Criminal Code of Canada and the American Child Pornography Prevention Act of 1996). For example, the Canadian Criminal Code defines child pornography as a visual representation that shows a "person who is or is depicted as being under the age of eighteen years and is engaged in or is depicted as engaged in explicit sexual activity" or displays, "for a sexual purpose, a sexual organ or the anal region of a person under the age of eighteen years" (Sec 163.1, R.S. 1985, c. C-46).

pornography offenders (see Jenkins, 2001). Howitt (1995) interviewed 11 adult male pedophiles who reported occasional use of child pornography. These men said they created their own sexually arousing materials from images in catalogues, magazines, and other freely and legally available sources. Quayle and Taylor (2002) interviewed 13 men convicted of downloading child pornography from the Internet. Many of these men acknowledged that the material they downloaded was sexually arousing to them and corresponded in content to their sexual fantasies. Galbreath, Berlin, and Sawyer (2002) reported data from 39 individuals who were assessed at an outpatient clinic because of concerns about their use of the Internet for sexual purposes. All had used sexually explicit Web sites, and the majority (64%) had participated in sexually explicit chat rooms. Fifty-five percent of the outpatients had downloaded child pornography, and 34% had attempted to meet a minor for sex. Seto and Eke (2005) followed a sample of men charged with child pornography offenses and found that those who also had a history of other criminal involvement were more likely to reoffend during the follow-up period (average 2.5 years) than were those with only child pornography offenses in their history. Not surprisingly, those with a prior history of sexual offenses involving contact with a victim were the most likely to sexually reoffend.

The present study was conducted to determine whether being charged with a child pornography offense is a valid indicator of pedophilia. We predicted that men charged with a child pornography offense (*child pornography offenders*) would show greater sexual arousal to children during phallometric testing than would men with no history to suggest pedophilia (i.e., men who had committed sexual offenses against victims aged 17 or older only; *offenders against adults*) and men who had been referred for sexological evaluations because of concerns about their sexual interests or behaviors (e.g., compulsive use of prostitutes or commercially available pornography; *general sexology patients*). In contrast, we expected child pornography offenders to be similar in their patterns of sexual arousal to men who had committed sexual offenses against child victims aged 14 or younger (*offenders against children*).

Method

Subjects

We obtained data for 685 patients assessed at the Kurt Freund Laboratory of the Centre for Addiction and Mental Health (Toronto, Ontario, Canada). This laboratory provides comprehensive evaluations to males referred as a result of illegal or clinically significant sexual behaviors. The primary source of referrals to this facility was parole and probation officers (36%), followed by lawyers (24%), self-referral through a physician (21%), and correctional institutions (18%).

The initial sample consisted of 887 men; 202 did not produce a valid result on the phallometric test used in this study (e.g., refused to participate in the assessment, equipment malfunction, lack of any response to any sexual category) and were dropped from the analysis. Sex offenders with victims who were 15 or 16 years old were not included in the initial search of the database. The study sample of 685 men had mean and median ages of 36.8 years ($SD = 12.0$) and 36.0 years, respectively. The median educational level was high school graduation; a third had not graduated high school, and a third had completed some college or university schooling. The patients were predominantly of European descent, with 79.1% describing themselves as White, 6.1% as Black, 4.7% as Indian or Pakistani, 2.2% as Southeast Asian, 1.5% as Aboriginal Canadian, 1.3% as Filipino or Pacific Islander, and 5.1% as "other," which included mixed ancestry.

Of the 685 patients in the study sample, 100 had charges for child pornography offenses (child pornography offenders); of these men, 57 had no known sexual offenses against children, whereas 43 had sexual offenses against one or more children. Another 178 men had no history of charges for child pornography but did have a history of one or more sexual offenses against victims who were aged 14 or younger (offenders against children), 216 men had no history of charges for child pornography or sexual offenses against child victims but did have a history of sexual offenses against victims who were aged 17 or older (offenders against adults), and 191 men had no history of charges for child pornography or sexual offenses (general sexology patients).

Procedure

The standard evaluation at the laboratory consists of a phallometric assessment of the patient's sexual interests, a semistructured clinical interview, and a review of mental health and legal documents supplied by the referral source. The evaluation also includes a brief neuropsychological battery that is unrelated to the present investigation (see Cantor et al., 2004). On completion of his evaluation, each patient was invited to permit his clinical data to be used for research purposes.

Sexual offense history. File information was reviewed to identify patients who had been charged for child pornography offenses. In addition, phallometric laboratory staff used a standardized form to record each patient's history of sexual offenses against child or adult victims. The sexual offense information came primarily from collateral documents such as reports from the police, probation, or parole officers. Some patients admitted having additional victims who were not recorded in their files and for whom they had not been charged; these additional victims were added to the victims known through file information.

Phallometric testing. Clinicians and researchers use phallometry to quantify the sexual interests of sexual offenders against children (e.g., Howes, 1995). A meta-analytic review of 61 sex offender follow-up studies found that phallometrically assessed sexual arousal to children was the strongest predictor of subsequent sexual offenses among all the variables that were examined (Hanson & Bussière, 1998).

The specific protocol in use at the Kurt Freund Laboratory over the course of the present investigation reliably distinguishes pedophilic from *teleiophilic* men (i.e., men who prefer sexually mature persons). Blanchard et al. (2001) have described the phallometric testing procedure and data preparation in detail. Briefly, a computer records penile blood volume while the patient observes a standardized set of stimuli that depict persons of potential sexual interest. Changes in penile blood volume (i.e., his degree of penile erection) indicate his relative sexual interest in each stimulus category.

The stimuli used in the phallometric test were slides accompanied by audiotaped narratives presented through headphones. There were seven categories of slides, six of which depicted nude models representing the following combinations of sex and age: female adults, female pubescent children, female prepubescent children, male prepubescent children, male pubescent children, or male adults. The seventh stimulus category was neutral slides depicting landscapes. Each slide was accompanied by a narrative describing sexual interactions with the depicted person, except for the neutral slides, which were accompanied by a narrative describing solitary, nonsexual activities.

The data reduction process yields seven phallometric test scores, one for each of the seven stimulus categories. These phallometric test scores are ipsatively standardized; that is, each patient's phallometric test scores are transformed to have a mean value of zero and a standard deviation of one, consistent with the recommendation of Harris, Rice, Quinsey, Chaplin, and Earls (1992) regarding the optimal treatment of phallometric data. Phallometric test scores greater than zero indicate that the participant responded to the category above his own average response, and scores below zero indicate the participant responded to the category less than his own average

response. Finally, a *pedophilic index* was calculated for each patient: The pedophilic index was the difference between his greatest response to any of the four child categories and his greatest response to either of the two adult categories.

Results

We first assigned participants to nine groups on the basis of their sexual offense histories. There were 57 child pornography offenders without a history of sexual offenses against children; 43 child pornography offenders with a history of sexual offenses against one or more victims aged 14 or younger; 131, 36, and 11 offenders against children with one, two, or three or more victims aged 14 or younger, respectively; 101, 35, and 80 offenders against adults with one, two, or three or more victims aged 17 or older, respectively; and 191 general sexology patients. The last comparison group was included because we have found in previous research that, as a group, general sexology patients show a teleiophilic sexual preference for adult women (Blanchard et al., 2001; Seto et al., 1999).

There was a difference between groups in their referral source: The majority of child pornography offenders without a history of sexual offenses against children were referred by their lawyers (70%), whereas the majority of child pornography offenders with a history of sexual offenses against children were referred by probation or parole officers or correctional institutions (82%). In comparison, a slight majority of offenders with child or adult

victims were referred by probation or parole officers (52%), and a majority of general sexology patients were self-referred (67%).

The proportions of men in each of the nine study groups—two groups of child pornography offenders, three groups of offenders against children, three groups of offenders against adults, and one group of general sexology patients—who met a diagnostic criterion for pedophilia used at the Kurt Freund Laboratory (pedophilic index greater than .25; Blanchard et al., 2001) are shown in Figure 1. There was a significant difference between groups in the proportions who met this diagnostic criterion: 61% of child pornography offenders, 35% of offenders with child victims, 13% of offenders with adult victims, and 22% of general sexology patients, $\chi^2(3, N = 685) = 86.77, p < .001$. In other words, child pornography offenders had almost three times the odds (odds ratio = 2.8) of being identified as a pedophile phallometrically than did offenders against children. The corresponding odds ratios were 10.5 when comparing child pornography offenders with offenders against adults and 5.7 when comparing child pornography offenders with general sexology patients.

We also compared the same nine groups in their absolute phallometric responses (penile volume change; in cc) to any stimuli depicting children and to any stimuli depicting adults (see Figure 2). Consistent with the results from the analysis of pedophilic indices, child pornography offenders responded substantially more to stimuli from categories depicting children than to stimuli from categories depicting adults. In contrast,

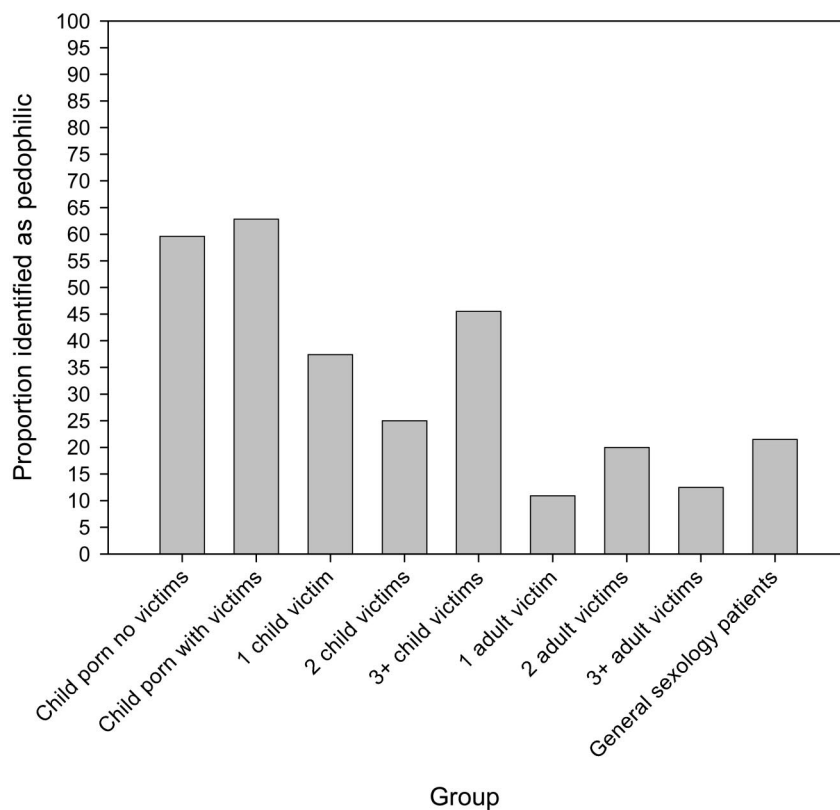


Figure 1. Proportion of child pornography offenders, offenders against children, offenders against adults, and general sexology patients identified as pedophilic according to the phallometric test.

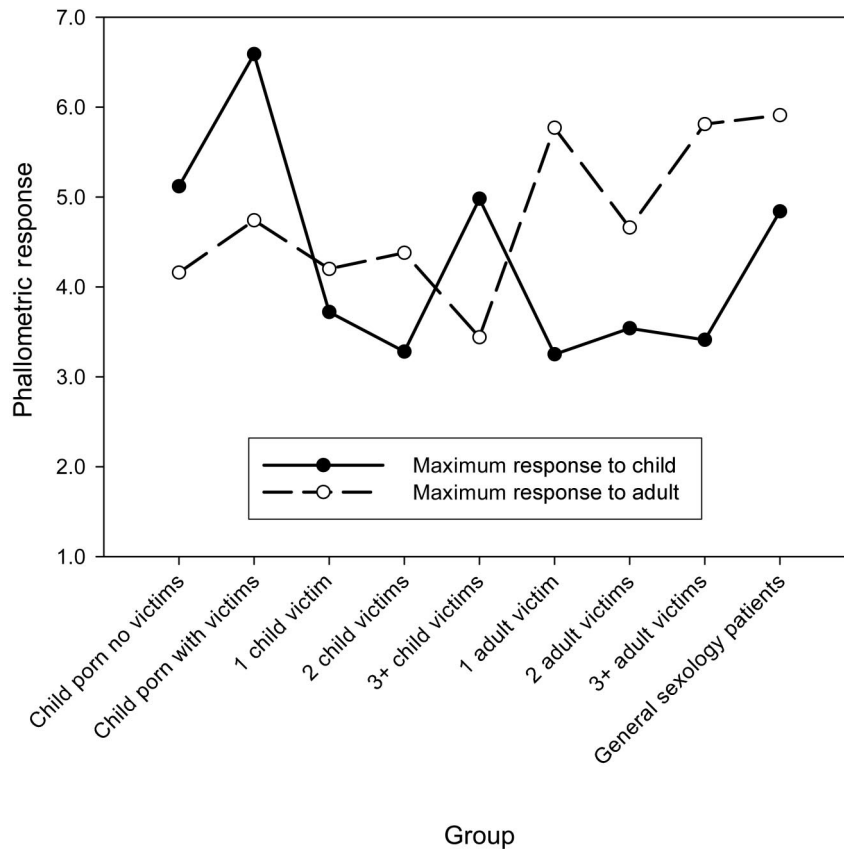


Figure 2. Maximum phallometric responses to child stimuli and to adult stimuli by child pornography offenders, offenders against children, offenders against adults, and general sexology patients.

offenders against adults and general sexology patients responded more to stimuli depicting adults than to stimuli depicting children. Offenders against children with three or more victims also showed a greater absolute phallometric response to children than to adults.

We then combined the three groups of offenders against children and the three groups of offenders against adults and compared the resulting five groups—two groups of child pornography offenders, a combined group of offenders against children, a combined group of offenders against adults, and one group of general sexology patients—on their average pedophilic indices. Consistent with the results depicted in Figure 1, there was a significant difference between groups in their average pedophilic index, $F(4, 680) = 24.21, p < .001$ (see Figure 3). Examining the 95% confidence intervals, both child pornography offender groups had average pedophilic indices indicating significantly greater sexual arousal to a category depicting children than to a category depicting adults (i.e., the two child pornography offender group means did not overlap with zero). The two child pornography offender groups did not significantly differ from each other, but they had significantly higher average pedophilic indices than did the other three groups. As found in many previous studies, offenders against children had significantly higher average pedophilic indices than did offenders against adults or general sexology patients.

Discussion

Our results indicate that child pornography offending is a valid diagnostic indicator of pedophilia. Child pornography offenders were significantly more likely to show a pedophilic pattern of sexual arousal during phallometric testing than were comparison groups of offenders against adults or general sexology patients. In fact, child pornography offenders, regardless of whether they had a history of sexual offenses against child victims, were more likely to show a pedophilic pattern of sexual arousal than were a combined group of offenders against children.

Our results suggest that child pornography offending might be a stronger indicator of pedophilia than is sexually offending against a child. A possible explanation for this finding is that some nonpedophilic men victimize children sexually, such as antisocial men who are willing to pursue sexual gratification with girls who show some signs of sexual development but are below the legal age of consent. In contrast, people are likely to choose the kind of pornography that corresponds to their sexual interests, so relatively few nonpedophilic men would choose illegal child pornography given the abundance of legal pornography that depicts adults. Thus, an undifferentiated group of offenders against children would have a lower average pedophilic index than would a group of child pornography offenders. Another possible explanation for the difference between child pornography offenders and offenders

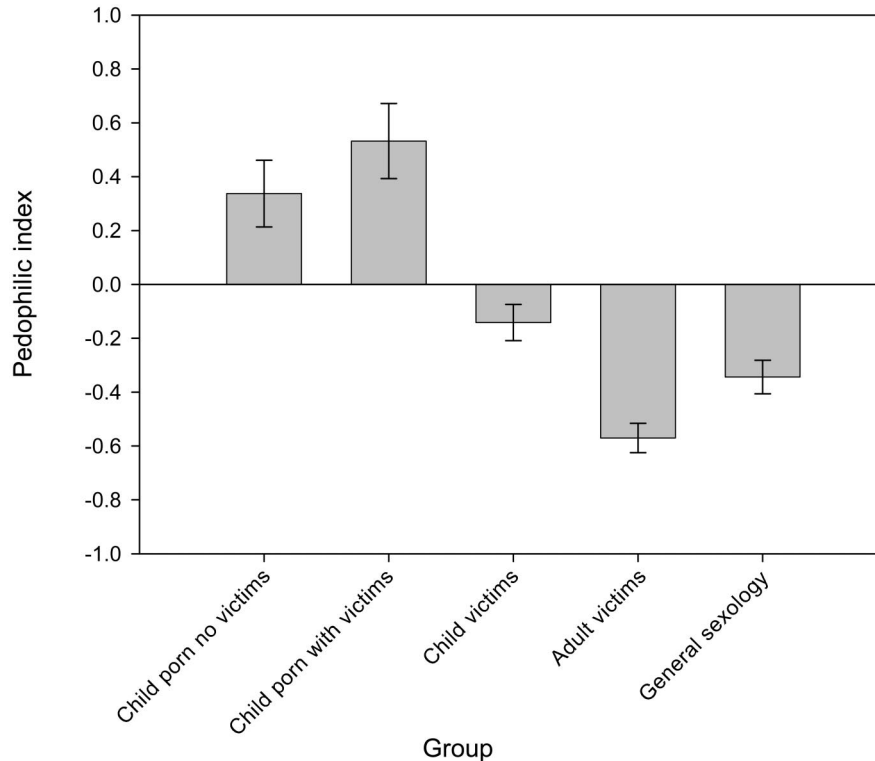


Figure 3. Average pedophilic indices for child pornography offenders without a history of sexual offenses against child victims, child pornography offenders with a history of offenses against child victims, offenders against children, offenders against adults, and general sexology patients.

against children is that the child pornography offenders were less likely to attempt to suppress their responses to stimuli depicting children (or were less successful in suppressing such responses). However, there is no a priori reason that the two groups of men would differ in motivation or ability to suppress sexual arousal to children.

Our results have implications for both clinical and theoretical work on pedophilia because they suggest that child pornography offending has diagnostic significance and may be particularly helpful in circumstances in which the person denies a sexual interest in prepubescent children, or has no documented history of sexual behavior involving children, or in which phallometric test results are unavailable. Whether child pornography offending is associated with a different prognosis than are other indicators of pedophilic interests, such as its relative ability to predict sexual recidivism, remains to be determined.

This study had several limitations. First, the study participants were referred to the Kurt Freund Laboratory for a sexological assessment because of clinical or legal concerns about their sexual interests or behavior, so there may have been an ascertainment bias that makes our sample less representative of child pornography users in general. Second, there was a significant difference in referral source across the groups examined in this study. Perhaps reflecting this difference in referral source, 43% of the 100 child pornography offenders included in this study had been charged with a sexual offense involving a child victim, compared with unpublished data that suggest that approximately a third of child

pornography offenders have a criminal record of sexual offenses involving children (Federal Bureau of Investigation, 2002; Perrien, Hernandez, Gallop, & Steinour, 2000; R. Smith, personal communication, July 20, 2000, as cited in Klain, Davies, & Hicks, 2001). In contrast, Seto and Eke (2005) found that 24% of their sample of 201 child pornography offenders had a prior contact sexual offense history. It would be very interesting to determine whether child pornography possession is still a valid indicator of pedophilia in a nonclinical and nonforensic sample. Although such research would be more difficult to conduct, studies that could assure participants of their confidentiality (e.g., using a Certificate of Confidentiality provided by the National Institutes of Health in the United States or using anonymous responses to Internet surveys globally) would help elucidate the relationships between child pornography possession, sexual interests, and sexual behavior.

Finally, although we were able to identify participants who were charged for child pornography offenses, we did not have sufficient information in the clinical file about the nature and extent of their child pornography to examine whether specific types of content were related to sexual history or phallometric test results. For example, individuals who collect pornography depicting only girls might be less likely to commit sexual offenses against boys or to show sexual arousal to boys in the laboratory. Given the positive relationships between sexual arousal to children and having multiple child victims, boy victims, and younger child victims (Seto & Lalumière, 2001; Seto, Murphy, Page, & Ennis, 2003), and other research demonstrating that these same victim characteristics pre-

dict subsequent offending (Seto, Harris, Rice, & Barbaree, 2004), one could predict greater pedophilic arousal—and a greater likelihood of subsequent sexual offenses against children—among individuals who possess more child pornography content, pornography depicting boys, and pornography depicting very young children. We are now beginning a research project designed to test this question.

References

- Abel, G. G., Huffman, J., Warberg, B., & Holland, C. L. (1998). Visual reaction time and plethysmography as measures of sexual interest in child molesters. *Sexual Abuse: A Journal of Research and Treatment, 10*, 81–95.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Blanchard, R., Klassen, P., Dickey, R., Kuban, M. E., & Blak, T. (2001). Sensitivity and specificity of the phallometric test for pedophilia in nonadmitting sex offenders. *Psychological Assessment, 13*, 118–126.
- Cantor, J. M., Blanchard, R., Christensen, B. K., Dickey, R., Klassen, P. E., Beckstead, A. L., et al. (2004). Intelligence, memory, and handedness in pedophilia. *Neuropsychology, 18*, 3–14.
- Federal Bureau of Investigation. (2002, March 18). Operation Candyman press release. Retrieved July 30, 2003, from <http://www.fbi.gov/pressrel/pressrel02/cm031802.htm>
- Finkelhor, D., & Ormrod, R. (2004, December). *Child pornography: Patterns from NIBRS* (Juvenile Justice Bulletin NCJ 204911). Washington, DC: U. S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
- Freund, K., & Blanchard, R. (1989). Phallometric diagnosis of pedophilia. *Journal of Consulting and Clinical Psychology, 57*, 100–105.
- Freund, K., & Watson, R. (1991). Assessment of the sensitivity and specificity of a phallometric test: An update of phallometric diagnosis of pedophilia. *Psychological Assessment, 3*, 254–260.
- Galbreath, N. W., Berlin, F. S., & Sawyer, D. (2002). Paraphilias and the Internet. In A. Cooper (Ed.), *Sex and the Internet: A guidebook for clinicians* (pp. 187–205). Philadelphia: Brunner-Routledge.
- Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology, 66*, 348–362.
- Harris, G. T., Rice, M. E., Quinsey, V. L., & Chaplin, T. C. (1996). Viewing time as a measure of sexual interest among child molesters and normal heterosexual men. *Behaviour Research & Therapy, 34*, 389–394.
- Harris, G. T., Rice, M. E., Quinsey, V. L., Chaplin, T. C., & Earls, C. (1992). Maximizing the discriminant validity of phallometric assessment data. *Psychological Assessment, 4*, 502–511.
- Howes, R. J. (1995). A survey of plethysmographic assessment in North America. *Sexual Abuse: A Journal of Research and Treatment, 7*, 9–24.
- Howitt, D. (1995). Pornography and the paedophile: Is it criminogenic? *British Journal of Medical Psychology, 68*, 15–27.
- Jenkins, P. (1998). *Moral panic: Changing concepts of the child molester in modern America*. New Haven, CT: Yale University Press.
- Jenkins, P. (2001). *Beyond tolerance: Child pornography on the Internet*. New York: New York University Press.
- Klain, E. J., Davies, H. J., & Hicks, M. A. (2001). *Child pornography: The criminal-justice-system response* (Report No. NC81). Retrieved February 3, 2006, from http://www.missingkids.com/en_US/publications/NC81.pdf
- Perrien, M., Hernandez, A., Gallop, C., & Steinour, K. (2000, November). *Admissions of undetected contact sexual offenses by participants in the Federal Bureau of Prisons' sex offender treatment program*. Poster presented at the 19th Annual Conference of the Association for the Treatment of Sexual Abusers, San Diego, CA.
- Quayle, E., & Taylor, M. (2002). Child pornography and the Internet: Perpetuating a cycle of abuse. *Deviant Behavior, 23*, 331–361.
- Seto, M. C., & Eke, A. W. (2005). The criminal histories and later offending of child pornography offenders. *Sexual Abuse: A Journal of Research and Treatment, 17*, 201–210.
- Seto, M. C., Harris, G. T., Rice, M. E., & Barbaree, H. E. (2004). The Screening Scale for Pedophilic Interests and recidivism among adult sex offenders with child victims. *Archives of Sexual Behavior, 33*, 455–466.
- Seto, M. C., & Lalumière, M. L. (2001). A brief screening scale to identify pedophilic interests among child molesters. *Sexual Abuse: A Journal of Research and Treatment, 13*, 15–25.
- Seto, M. C., Lalumière, M. L., & Blanchard, R. (2000). The discriminative validity of a phallometric test for pedophilic interests among adolescent sex offenders against children. *Psychological Assessment, 12*, 319–327.
- Seto, M. C., Lalumière, M. L., & Kuban, M. (1999). The sexual preferences of incest offenders. *Journal of Abnormal Psychology, 108*, 267–272.
- Seto, M. C., Maric, A., & Barbaree, H. E. (2001). The role of pornography in the etiology of sexual aggression. *Aggression and Violent Behavior, 6*, 35–53.
- Seto, M. C., Murphy, W. D., Page, J., & Ennis, L. (2003). Detecting anomalous sexual interests among juvenile sex offenders. *Annals of the New York Academy of Sciences, 989*, 118–130.

Received August 27, 2004

Revision received July 28, 2005

Accepted July 29, 2005 ■