

The Discriminative Validity of a Phallometric Test for Pedophilic Interests Among Adolescent Sex Offenders Against Children

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The authors examined the responses of adolescent sex offenders against children on a phallometric test of pedophilic interests. Participants were 40 adolescent sex offenders against children, 75 young adult sex offenders against children, and 39 young adult comparison participants. The responses of adolescents with female victims resembled those of comparison participants; adolescents with any male victims had larger relative responses to child stimuli than comparison participants. Young adult offenders, regardless of victim sex, had larger relative responses to child stimuli than comparison participants. Using a cut score of 0 (indicating equal or greater arousal to children than to adults), sensitivity was 42% for adolescents with any male victims, and specificity was 92% for the comparison participants. Results suggest phallometric testing can identify pedophilic interests among these adolescent sex offenders.

Phallometry is the best available measure of male sexual interests (Zuckerman, 1971). The procedure involves the measurement of erectile responses (changes in penile circumference or volume) that occur while men are presented with sexual stimuli, such as pictures depicting children or adults, or audiotaped vignettes describing aggressive or nonaggressive sex between an adult and a child (for reviews, see Lalumière & Harris, 1998; Quinsey & Lalumière, 1996; Seto, in press). Phallometric studies of adults consistently find differences between offenders against children and nonsex offenders or nonoffenders (Freund & Blanchard, 1989; Freund & Watson, 1991). As a group, adult offenders against children respond relatively more to stimuli depicting children, compared with their responses to stimuli depicting adults. Relative responses to children that distinguish offenders against children from other men are usually referred to as *pedophilic interests*. Phallometric studies show that pedophilic interests are associated with a greater likelihood of sexual reoffending among sex offenders (reviewed in Hanson & Bussière, 1998; Quinsey, Lalumière, Rice, & Harris, 1995).

Pedophilic interests among adult offenders against children are associated with sexual offense history: having more than one victim, having a male victim, having younger victims, and having extrafamilial victims (Freund & Blanchard, 1989; Freund & Watson, 1991; Seto & Lalumière, in press; Seto, Lalumière, & Kuban, 1999). Follow-up studies also show that three of these variables—having a male victim, having younger victims, and having extrafamilial victims—are associated with a greater likelihood of sexual reoffending; the number of prior sexual offenses,

which can be thought of as a proxy for number of victims, also predicts sexual recidivism (Hanson & Bussière, 1998).

Phallometric testing of adolescent sex offenders has received little empirical attention, partly because there have been objections to the use of phallometric testing with younger adolescents. The few data on the erectile responses of older adolescent sex offenders are generally consistent with adult data. In a sample of 79 adolescent sex offenders (estimated mean age of 15 years) with female victims, Becker, Kaplan, and Tenke (1992) identified 29 who preferred young children or who did not discriminate between children and adults. Hunter, Goodwin, and Becker (1994) found that adolescents (mean age of 15 years) with male victims responded more to child stimuli than those with female victims. However, no published study has compared adolescent sex offenders with a suitable group of nonsex offenders or nonoffenders.

The present study was conducted as an initial step in evaluating the discriminative validity of a phallometric test for pedophilic interests among adolescent sex offenders. We compared the erectile responses of adolescents who committed sexual offenses against prepubescent children (adolescent offenders against children) with the responses of (a) young adults who also committed sexual offenses against prepubescent children (young adult offenders against children), (b) young adults who committed sexual offenses against females age 14 or older (young adult rapists), and (c) young adults who reported no sexual offenses of any kind (young adult nonoffenders). The young adults were, on average, 3 years older than the adolescents.

We predicted that adolescent offenders against children would resemble young adult offenders against children in their erectile responses, with both groups significantly differing from the comparison participants (young adult rapists and nonoffenders). Specifically, we predicted that adolescent and young adult offenders against children would show greater relative erectile responses to child stimuli than comparison participants. We also examined the sensitivity of the phallometric test for the different groups of offenders against children. Finally, we investigated whether the sexual offense variables associated with pedophilic interests among adult offenders against children (victim number, sex, age,

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and relatedness) were also relevant among adolescent offenders against children.

Method

Participants

We conducted a computerized search of the Kurt Freund Laboratory (Toronto, Ontario, Canada; formerly the Research Section of Behavioural Sexology at the Clarke Institute of Psychiatry) database for adolescents and young adults who had undergone phallometric testing for pedophilic interests. Sex offenders participated in the phallometric testing as part of their clinical assessment at the former Clarke Institute of Psychiatry between 1985 and 1996. Data from the young adults, but not the adolescents, have been reported before as part of large studies of sex offenders against children (e.g., Freund & Blanchard, 1989; Freund & Watson, 1991; Seto et al., 1999). Nonoffender participants were recruited between 1985 and 1990 through advertisements posted around a community college campus and were paid \$15 an hour for their time.

Offenders were classified into groups according to information they gave in clinical interviews and information from official records available for more than 90% of the offenders (typically a probation or parole officer's referral letter, police or court synopsis of criminal charges and convictions, or child protective services report). If an offender's self-report differed from the official information, the official information was used to assign him to a particular group, unless the offender reported more victims than were officially known. In these situations, the offender's self-reported history was used to assign him to a group; for example, if an offender with two known female victims, ages 7 and 10, reported a previously unknown 8-year-old male victim in the clinical interview, he was assigned to the group with child victims of both sexes.

Offenders against children had at least one victim under the age of 12, and rapists had only female victims who were age 14 or older. There was a minimum 3-year age difference between offenders against children and their victims. Nonoffenders reported no history of sexual offenses. Adolescent offenders against children were between 14 and 17 years old, while young adult offenders against children, rapists, and nonoffenders were between 18 and 21 years old. Eighteen was the lower age limit because no younger comparison participants were identified in the database; 21 was the upper age limit because using a lower cutoff resulted in too small a sample of comparison participants for statistical analysis.

The initial sample consisted of 169 participants. Fifteen (9% of the initial sample) participants were excluded because of technical problems in their phallometric test (e.g., faulty seal on the volumetric sensor, sensor could not be fitted properly). The final sample consisted of 154 participants: 40 adolescent offenders against children, 75 young adult offenders against children, 23 young adult rapists, and 16 young adult nonoffenders. The groups of offenders against children were further divided according to victim sex, because victim sex is an important correlate of pedophilic interests among adults (e.g., Malcolm, Andrews, & Quinsey, 1993). Of the 40 adolescent offenders against children, 14 had only female victims, 14 had only male victims, and 12 had victims of both sexes; of the 75 young adult offenders against children, 35 had only female victims, 31 had only male victims, and 9 had victims of both sexes.

Some participants exhibited other paraphilic behavior such as exhibitionism or voyeurism (5 adolescent offenders against children, 8 young adult offenders against children, and 12 young adult rapists), and some were clinically judged to be borderline or lower in intelligence (7 adolescent offenders against children and 7 young adult offenders against children). These participants were included in the analysis.

Apparatus and Materials

The phallometric test we examined is the same as the one used by Seto et al. (1999) to examine discriminative validity among adult offenders with

female child victims, and it is the same as the first session of a two-session phallometric test that has produced very good discriminative validity for adult offenders against children (Freund & Blanchard, 1989; Freund & Watson, 1991). We did not use data from the second session because some participants did not go through both sessions. The stimuli consisted of short color film clips depicting nude female or male individuals from four age categories walking toward the camera: very young children (5 to 8 years old), prepubescent children (8 to 11 years old), pubescent children (12 to 13 years old), and young adults (mid-20s in age). Nonsexual film clips of landscape scenes were also shown. Clips depicting individuals were accompanied by audiotapes describing an individual of that same age category engaging in nonsexual activities such as swimming. These audiotaped narratives emphasized characteristic features of the targets' body shapes. Clips depicting landscapes were accompanied by narratives describing the scenery. Film clips were presented with three commercial 16-mm film projectors (Eiki SNT-0 Slim Line, Eiki, Mississauga, Ontario, Canada), whereas audiotapes were presented with a commercial audiotape player (Tiffen Pro-Corder System II, Tiffen Company, Hauppauge, NY) and headphones. The film clips were shown on three projection screens located approximately 3 m in front of the participant's reclining chair. Each screen was 1.5 m² in area, and the projected images were approximately 1.2 m × 1.5 m in size.

Erectile responses were monitored in terms of penile volume change. A photograph and schematic drawing of the volumetric apparatus are given in Freund, Sedlacek, and Knob (1965). An analysis of the differences between volumetric and circumferential phallometry may be found in Kuban, Barbaree, and Blanchard (1999). The major components included a glass cylinder that fit over the penis and an inflatable latex cuff that surrounded the base of the penis and isolated the air inside the cylinder from the air outside. A rubber tube attached to the cylinder led to a Rosemount pressure transducer (Model 831A, Rosemount Inc., Eden Prairie, MN), which converted air pressure changes into voltage output changes. Increases in penile volume compressed the air inside the cylinder and thus produced output signals from the transducer, which were recorded with a 12-bit analog/digital converter housed in an IBM-compatible microcomputer (DT 2811-PGH, 8 input board, Data Translations, Inc., Marlboro, MA). The apparatus was calibrated so that known quantities of volume displacement in the cylinder (e.g., 2 cc) corresponded to known changes in transducer voltage output. The volumetric apparatus is very sensitive and can reliably detect changes in penile blood volume much less than 1 cc.

Procedure

Upon arriving at the laboratory, the phallometric procedure was explained to the participant, including his option to discontinue testing at any time. This information was repeated on a printed consent form that the participant signed before the test session began. After the placement of the volumetric sensor was explained to the participant, he lowered his trousers, placed the device over his penis, and sat in a reclining chair placed approximately 3 m before the projection screens. After the setup was complete, the participant's lower body was covered with a sheet to minimize any embarrassment or discomfort. Once the test started, the participant was monitored by a low-light video camera (Sony Shibaden HV-15, Toronto, Ontario, Canada) that was fixed on his upper body, in order to inhibit faking tactics such as averting the eyes to avoid seeing the visual stimuli or tampering with the volumetric sensor. Data from an unknown (but small) number of participants who did not comply with these instructions were not recorded in the electronic database.

The test session consisted of three blocks of nine trials, each trial lasting 28 s. The nine trials comprised one trial for each of the eight age-sex categories plus one landscape scene, presented in a fixed order. Film clips of three different figures from the same age-sex category were simultaneously presented on the three screens during each trial (e.g., three different girls between the ages of 8 and 11, each girl shown on a different

screen). The relative position of each figure was counterbalanced so that each figure appeared on each of the screens after the three trial blocks were completed. The next trial did not start until the participant had returned to within 1 cc of his baseline volume, so intertrial interval varied within sessions and across participants. The entire session took approximately 1 hr to complete.

Penile volume change was sampled four times per second throughout each trial. The participant's response was quantified in two ways: as the extremum of the curve of volume change (i.e., the greatest departure from initial value occurring during the 28 s of a trial) and as the area under the curve. Each participant's 27 extremum scores were then converted into standard scores, based only on his own extremum data, and the same operation was carried out on his area scores. Next, for each participant, the standardized extremum and area scores were combined to yield a composite score for each of the 27 trials by using the formula $(z_i^E + z_i^A)/2$, where z_i^E is the standardized extremum score for the i th trial, and z_i^A is the standardized area score for the i th trial. These operations were carried out for two reasons: First, transformation of raw scores is required when combining data from different participants, because between-participants variability in the absolute magnitude of penile volume changes can otherwise obscure even reliable statistical effects. There are numerous sources of such variability, such as the participant's age, health, size of his penis, and the amount of time since his last ejaculation. Empirical research has shown the z -score transformation to be optimal (Earls, Quinsey, & Castonguay, 1987; Harris, Rice, Quinsey, Chaplin, & Earls, 1992). Second, the (highly correlated) extremum and area z scores are averaged to obtain a composite that reflects both the amplitude and speed of response and lessens the impact of anomalous responses, that is, a large change from initial value but small area or vice versa (Freund, Scher, & Hucker, 1983).

In the last stage of basic processing, the data were reduced to nine final scores for each participant by averaging his three composite scores in each of the nine stimulus categories. These nine scores are measures of the participant's relative sexual arousal to very young girls (CF), prepubescent girls (PPF), pubescent girls (PF), young adult women (AF), very young boys (CM), prepubescent boys (PPM), pubescent boys (PM), young adult men (AM), and neutral landscape scenes (N). These scores were used to calculate a pedophilic index, defined as the largest average response to a stimulus category depicting very young or prepubescent children minus the largest average response to a stimulus category depicting adults (Seto et al., 1999): pedophilic index = $\max(\text{CF}, \text{PPF}, \text{CM}, \text{PPM}) - \max(\text{AF}, \text{AM})$. A differential index calculated from standard scores is the most psychometrically appropriate measure of pedophilic interests, based on discriminative and predictive validity studies (Harris et al., 1992; Rice, Quinsey, & Harris,

1991). More positive scores indicate relatively greater sexual interest in very young and prepubescent children, whereas more negative scores indicate relatively greater sexual interest in adults. Responses to pubescent stimuli were not included in this index because the meaning of these responses is unclear for the groups under study (*pedophilia* is defined by the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* as sexual interest in prepubescent children; American Psychiatric Association, 1994). This index also corresponds to the pedophilic index used in our research (Seto & Lalumière, in press; Seto et al., 1999). A modified index including stimuli depicting pubescent children was calculated and reported below for comparison purposes. Unlike previous, older studies from this laboratory, we retained participants regardless of the magnitude of their erectile responses to stimuli, consistent with the recommendations of Harris et al. (1992) and the methods used by Seto et al. (1999).

Results

Biographic Characteristics

Descriptive characteristics for the different groups are presented in Table 1. On average, the young adult participants were approximately 3 years older than the adolescent participants. There was a significant difference between all the groups in their average level of education, Kruskal-Wallis analysis of variance (because of heterogeneous group variances), $\chi^2(7, N = 146) = 35.83, p < .0001$ (information on education was missing for 3 of the adolescent offenders against children and 5 of the young adult offenders against children). Data on ethnicity and socioeconomic status were unavailable for most of the participants because this information was not recorded in the phallometric laboratory database.

Phallometric Data

The omnibus test revealed a significant difference between groups in their mean pedophilic indices, $F(7, 146) = 8.51, p < .0001$. Planned orthogonal contrasts showed that (a) rapists and nonoffenders had very similar mean pedophilic indices, $t(146) = 0.21, ns$, and could therefore be combined as a comparison group in the analysis of the phallometric test's sensitivity, as described below; (b) offenders against children had significantly

Table 1
Biographic and Offense Characteristics

Participant information	Adolescents with child victims			Young adults with child victims			Comparison participants	
	Female (<i>n</i> = 14)	Male (<i>n</i> = 14)	Both (<i>n</i> = 12)	Female (<i>n</i> = 35)	Male (<i>n</i> = 31)	Both (<i>n</i> = 9)	Rapists (<i>n</i> = 23)	Nonoffenders (<i>n</i> = 16)
Biographic								
Age in years	16.4 (1.0)	16.1 (1.0)	15.5 (1.2)	19.8 (1.0)	19.1 (1.2)	19.4 (0.9)	19.3 (1.3)	19.6 (1.4)
Education ^a	3.0 (0.4)	2.6 (0.5)	2.6 (0.7)	3.0 (0.6)	3.0 (1.0)	3.0 (0.8)	2.9 (0.5)	3.9 (0.4)
Offenses against children								
Number of child victims	1.6 (0.8)	1.9 (2.4)	2.7 (1.4)	1.4 (0.7)	1.5 (1.3)	2.6 (1.2)		
Multiple victims (%)	42.9	28.6	100.0	31.4	38.7	100.0		
Victims <6 years old (%)	42.9	42.9	41.7	45.7	38.7	33.0		
Victims >11 years old (%)	7.1	21.4	25.0	20.0	12.9	33.3		
Extrafamilial victims (%)	100.0	92.9	91.7	91.4	96.8	44.4		

Note. The top three rows are means (and standard deviations); the bottom four rows are percentages.

^a Education was coded on a 6-point scale: 1 = none, 2 = public school, 3 = some high school, 4 = high school graduate, 5 = some college, 6 = college graduate.

higher pedophilic indices than the comparison participants, $t(146) = 4.74, p < .001$; and (c) adolescent offenders did not significantly differ from the young adult offenders against children, $t(146) = 1.70, ns$.

Inspection of the 95% confidence intervals presented in Figure 1 showed that the adolescents with only female victims did not significantly differ from the comparison groups, whereas all other groups of offenders against children had significantly higher mean pedophilic indices than the rapists or nonoffenders. As groups, adolescents with victims of both sexes and young adult offenders with male victims responded more to stimuli depicting children than to adults. The effect sizes (Cohen's d) of the differences in means between the offender against children groups and the comparison participants are indicated in Figure 1.

To further illustrate the pattern of erectile responding for each group, the average standardized responses are plotted across the stimulus categories (see Figures 2 and 3). We did not include responses to stimuli depicting pubescent girls or boys in the calculation of the pedophilic index for the main analysis, but the

responses are shown in these figures. The stimulus categories eliciting the largest response for participants in the different groups are shown in Table 2. Consistent with the group means and profiles presented in the figures, the large majority of rapists (83%) and nonoffenders (75%) responded most to depictions of adult females. The same was true of adolescents with only female child victims (86%). There was greater heterogeneity among the other groups; in particular, approximately half or more of the adolescents with victims of both sexes and the young adult offenders against children responded most to a nonadult stimulus category. Offenders against children did not necessarily respond more to depictions of children of the same sex as their victims, consistent with previous research that found offenders against children show more similar responses to female and male stimuli than do heterosexual or homosexual nonoffenders (Freund, Watson, Dickey, & Rienzo, 1991).

It could be argued that sexual arousal to depictions of individuals 12 or 13 years old might be usual or appropriate among the younger adolescents in this study. We therefore repeated the anal-

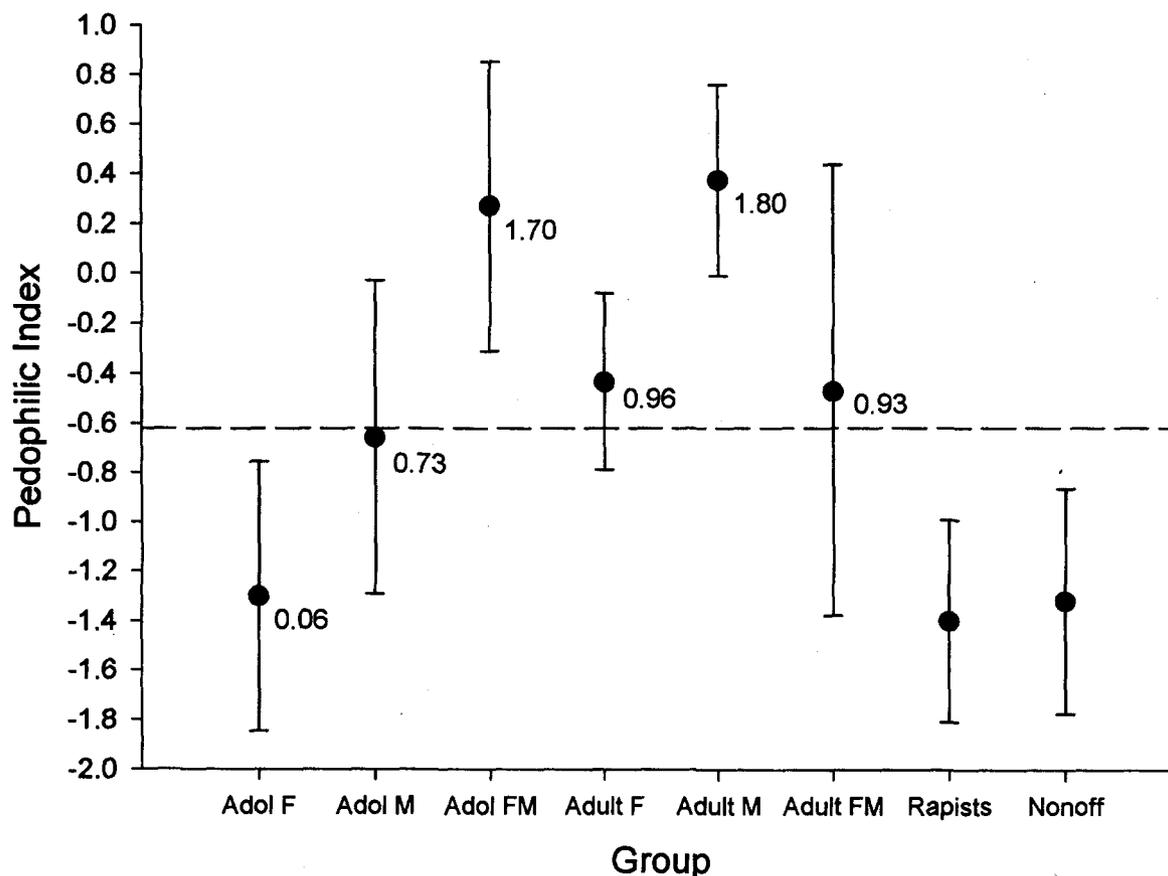


Figure 1. Mean pedophilic index across groups. Bars indicate 95% confidence intervals, and the dashed line indicates the overall mean pedophilic index score. Effect sizes (Cohen's d) for the differences in group means from the comparison participants are listed for each group of offenders against children; the standard deviation of the comparison participants was used as the denominator in the calculation of d . Adol F = adolescents with only female child victims; Adol M = adolescents with only male child victims; Adol FM = adolescents with both female and male child victims; Adult F = young adults with only female child victims; Adult M = young adults with only male child victims; Adult FM = young adults with both female and male child victims; Rapists = young adult rapists; Nonoff = young adult nonoffenders.

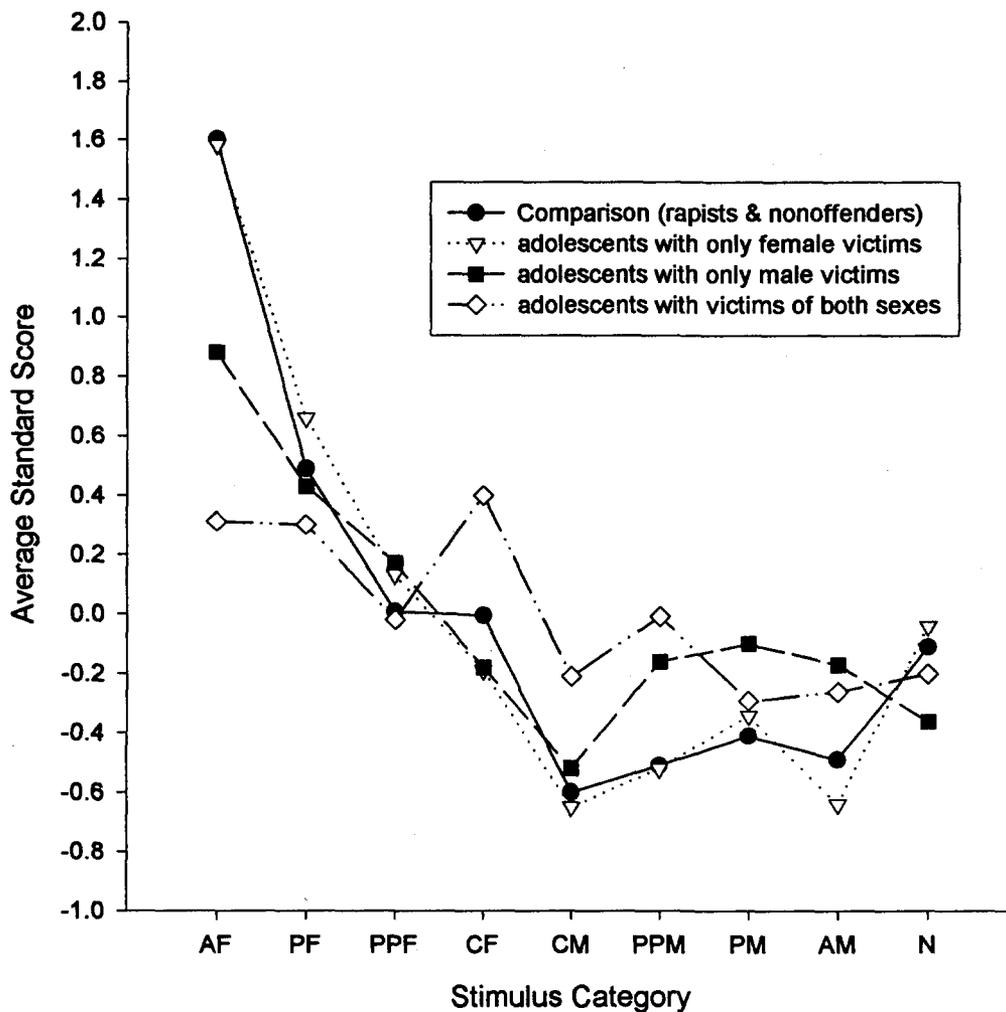


Figure 2. Standardized erectile responses across stimulus categories for adolescent offenders against children and comparison participants. AF = adult female; PF = pubescent female; PPF = prepubescent female; CF = young female child; CM = young male child; PPM = prepubescent male; PM = pubescent male; AM = adult male; N = neutral.

yses after calculating a modified pedophilic index that included the largest average response to depictions of pubescent children (PF and PM): modified pedophilic index = $\max(\text{CF}, \text{PPF}, \text{CM}, \text{PPM}) - \max(\text{PF}, \text{PM}, \text{AF}, \text{AM})$. There was no difference in the pattern of results, although the modified pedophilic indices tended to be lower, particularly for the adolescents ($M = -1.00$, $SD = 0.82$) and young adults with only male victims ($M = -0.14$, $SD = 0.77$). There was still a significant overall difference between groups, $F(7, 145) = 8.03$, $p < .0001$. Rapists did not differ from nonoffenders, $t(145) = 0.02$, ns ; the offenders against children had significantly higher modified pedophilic index scores than the rapists and nonoffenders, $t(145) = 4.48$, $p < .001$; and adolescent offenders did not differ from the young adult offenders against children, $t(145) = 1.64$, ns .

Sensitivity

Sensitivity was defined in this study as the proportion of offenders against children who were identified as having pedophilic

interests on the phalometric test, whereas specificity was defined as the proportion of comparison participants who were not identified as having pedophilic interests. The sensitivity of the phalometric test was first evaluated with a pedophilic index cut score of zero, indicating equal or greater arousal to stimuli depicting children compared with stimuli depicting adults. We also examined the sensitivity of the test at other cut scores that would identify a given percentage of comparison participants as nonpedophilic: 50, 60, 70, 80, 90, and 95% predetermined specificity. Offenders against children who scored at or above a particular cut score were considered to be pedophilic in these analyses (see Lalumière & Quinsey, 1993). As shown in Table 3, the greatest sensitivity values were obtained for adolescents with child victims of both sexes and young adults with only male child victims. The adolescent offenders with only female child victims resembled the comparison participants.

A cut score of zero seems optimal because it is easy to understand (indicates equal or greater sexual arousal to stimuli depicting

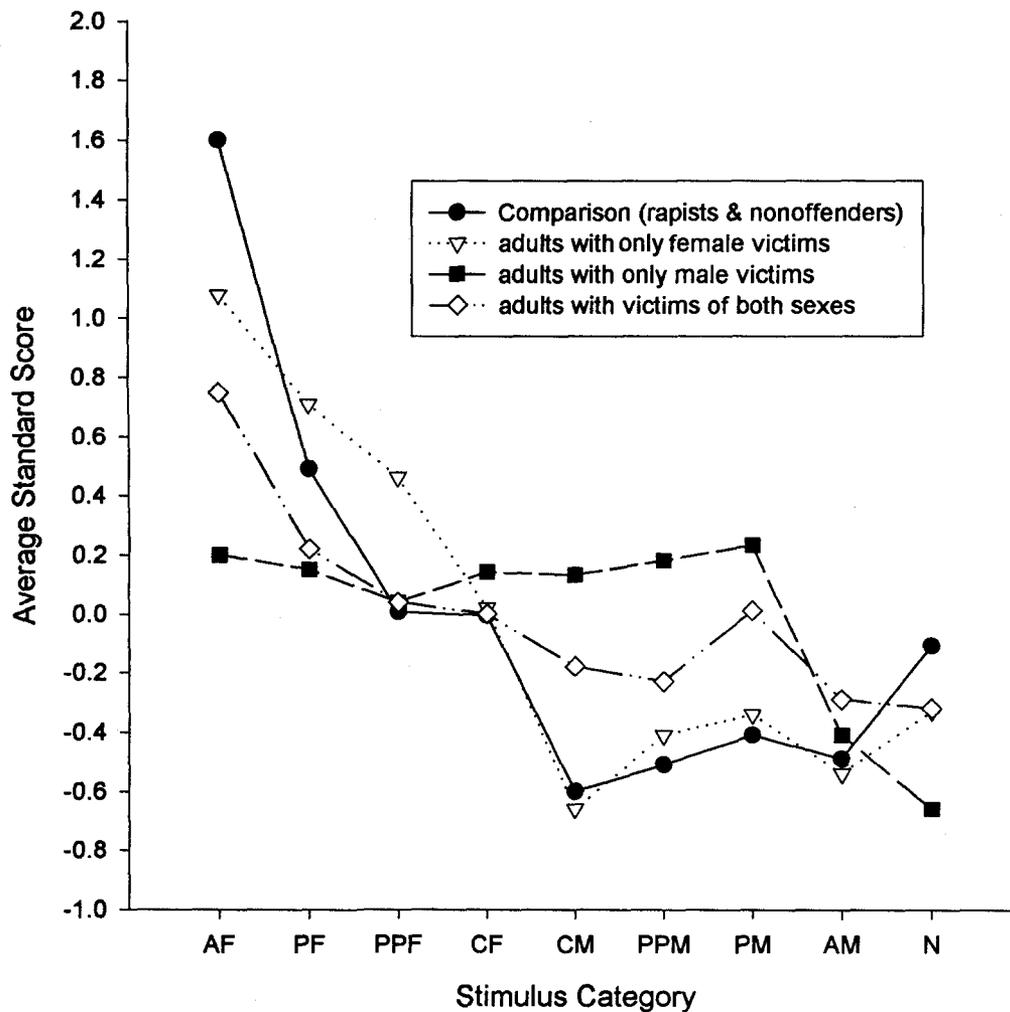


Figure 3. Standardized erectile responses across stimulus categories for young adult offenders against children and comparison participants. AF = adult female; PF = pubescent female; PPF = prepubescent female; CF = young female child; CM = young male child; PPM = prepubescent male; PM = pubescent male; AM = adult male; N = neutral.

children compared with stimuli depicting adults), identifies pedophilic interests among offenders against children who do not admit having such interests (see first row in Table 3), and has high specificity, with 92% of the comparison participants being identified as nonpedophilic on the basis of their erectile responding.

Other Accuracy Statistics

We also calculated accuracy statistics—percentage of participants correctly classified, positive predictive power, negative predictive power, and hit rate—for the erectile responses of adolescent offenders against children as a combined group and young adult offenders against children as a combined group. In the absence of a true “gold standard” for diagnosing pedophilia, we used participant admission as a conservative indicator of the presence of pedophilic interests (see the first row of Table 3). Given the reasons for their clinical assessments at the former Clarke Institute of Psychiatry, offenders against children were presumed

to be extremely unlikely to report having pedophilic interests if they did not actually have such interests. At the same time, some offenders against children who did have pedophilic interests may not have reported it because of the potential legal or social repercussions, so denial of pedophilic interests was presumed to be less informative.

Because the gold standard was offender admission of pedophilic interests, we did not expect a high percentage of participants would be correctly classified, and we did not expect high positive predictive power. Using a cut score of zero, 70% of the adolescent offenders against children and 64% of the young adult offenders against children were correctly classified on the basis of their erectile responding (i.e., were phallometrically classified as pedophilic and admitted having pedophilic interests or were phallometrically classified as nonpedophilic and denied having pedophilic interests). The positive predictive power was 23% for adolescent offenders and 38% for young adult offenders against

Table 2
Stimulus Category Eliciting Largest Response for Participants in Each Group

Stimulus category	Adolescents with child victims			Young adults with child victims			Comparison participants	
	Female (n = 14)	Male (n = 14)	Both (n = 12)	Female (n = 35)	Male (n = 31)	Both (n = 9)	Rapists (n = 23)	Nonoffenders (n = 16)
Adult female	12	8	4	18	9	4	19	12
Pubescent female	1	1	0	6	2	0	2	3
Prepubescent female	1	1	2	6	2	0	0	0
Young female child	0	1	3	1	2	1	2	0
Young male child	0	0	1	0	8	1	0	0
Prepubescent male	0	0	1	2	4	1	0	0
Pubescent male	0	2	0	2	3	1	0	1
Adult male	0	1	1	0	1	1	0	0

children, indicating that a minority of those who were phallometrically classified as pedophilic admitted having pedophilic interests. The negative predictive power was 93% for adolescent offenders and 89% for young adult offenders against children, indicating that a high proportion of those who were phallometrically classified as nonpedophilic denied having pedophilic interests. The hit rate was 60% for adolescent offenders and 78% for young adult offenders against children, indicating that a majority of those who admitted having pedophilic interests were also phallometrically classified as pedophilic.

Sexual Offense History

Information on sexual offense history (victim number, sex, age, and relatedness) is presented in Table 1. From the phallometric laboratory database, the number of victims was coded as a continuous variable; the proportion of offenders in each group with multiple victims is also reported. The other variables were coded categorically: Victim sex was coded as female only, male only, or both female and male (for the group classification); victim age was coded as under 6 years old, 6 to 11 years old, or 12 years of age or older; and victim relatedness was coded as intrafamilial only or any extrafamilial relationships. For the correlational analyses, victim sex (female only versus any male), victim age (victims 6 years of age or older versus those under 6 years old), and victim

relatedness (intrafamilial only versus any extrafamilial) were re-coded as dichotomous variables. The pedophilic index was positively and significantly associated with total number of victims for the adolescent offenders against children, $r(38) = .41, p < .01$, and positively but not significantly associated for young adult offenders against children, $r(73) = .10, ns$. Scores on the pedophilic index were positively and significantly related to having any male victims for adolescent offenders against children, $r(38) = .42, p < .01$, and young adult offenders against children, $r(73) = .26, p < .05$. It was also positively but not significantly associated with having younger victims (less than 6 years old) among adolescent offenders against children, $r(38) = .11, ns$, and young adult offenders against children, $r(73) = .16, ns$. Not surprisingly, given the small proportion of offenders with only intrafamilial victims, pedophilic responding was not significantly associated with having any extrafamilial victims for either the adolescent offenders against children, $r(38) = .06, ns$, or the young adult offenders against children, $r(73) = -.01, ns$.

Other Considerations

The pedophilic index was not significantly related to either offender age, $r(113) = .13, ns$, or phallometric responsivity, in terms of the highest responses to sexual stimuli, $r(113) = -.0008, ns$, in the combined sample of adolescent and young adult offend-

Table 3
Percentage of Participants Identified as Pedophilic at Different Cut Scores on the Phallometric Test

Classification criteria	Adolescents with child victims			Young adults with child victims			Comparison participants	
	Female (n = 14)	Male (n = 14)	Both (n = 12)	Female (n = 35)	Male (n = 31)	Both (n = 9)	Rapists (n = 23)	Nonoffenders (n = 16)
Admitted pedophilia (%)	7.1	0.0	33.3	14.3	29.0 ^a	44.4	0.0	0.0
Sensitivity (%)								
95% Specificity (+0.39) ^b	7.1	21.4	50.0	17.1	53.3	33.3	4.3	6.3
Index score of 0 ^c	14.3	28.6	58.3	37.1	66.7	44.4	8.7	6.3
90% Specificity (-0.27)	14.3	42.9	66.7	48.6	70.0	44.4	13.0	6.3
80% Specificity (-0.42)	14.3	42.9	66.7	51.4	70.0	44.4	21.7	18.8
70% Specificity (-0.76)	21.4	42.9	91.7	60.0	76.7	44.4	34.8	25.0
60% Specificity (-0.99)	28.6	50.0	91.7	68.6	86.7	55.6	39.1	43.8
50% Specificity (-1.28)	35.7	50.0	91.7	77.1	93.3	66.7	52.2	50.0

^a Missing information for 1 young adult with only male child victims. ^b Cut scores are indicated in parentheses next to the specificity value. ^c Indicating equal or greater arousal to stimuli depicting children compared with stimuli depicting adults.

ers against children. Among all the offenders against children, 92 (80%) denied having a sexual interest in children. Denial of pedophilic interests was negatively and significantly correlated with pedophilic responding among the offenders against children, $r(113) = -.28, p < .005$; in other words, offenders against children who denied pedophilic interests tended to score lower on the pedophilic index.

Discussion

As predicted, the erectile responses of the 40 adolescent offenders against children resembled the responses of the 75 young adult offenders against children and differed from the responses of the 39 young adult comparison participants. All groups of offenders against children, except for one, showed a higher mean pedophilic index than the comparison participants.¹ The only exception was the group of adolescent offenders with only female child victims. The sensitivity of the test for adolescent offenders with at least one male child victim was 42%, with a cut score of zero; this cut score identified 92% of comparison participants as nonpedophilic.

As usually found with adult offenders (cf. Seto & Lalumière, in press), the pedophilic index scores of adolescent offenders against children were positively associated with having multiple victims, having a male victim, having very young victims, and having extrafamilial victims (the correlations for the last two offense history variables did not reach statistical significance). Among the combined group of adolescent and young adult offenders against children, offender age and phallometric responsivity were not significantly related to the pedophilic index. Together, these results suggest that pedophilic interests can be validly detected, and interpreted as such, among adolescent offenders with any male child victims.

The finding that adolescent offenders with only female child victims did not show pedophilic interests is surprising because, as a group, young adult offenders with only female child victims (who are on average just 3 years older than the adolescent offenders) did show pedophilic interests. One explanation is that adolescent offenders with female child victims do have pedophilic interests but the phallometric test used in this study was unable to detect them. Another possibility is that younger offenders are better able to simulate nonpedophilic interests than older offenders. A third possibility is that this group of adolescent offenders with only female child victims did not have pedophilic interests. Studies using different phallometric procedures, stimuli, and samples are needed to examine these possibilities.

Although the comparison participants were only slightly older than the adolescent offenders, we recommend that future studies examine offender and comparison groups that are matched in age. Future studies should also evaluate the discriminative validity of phallometrically measured pedophilic interests with audio descriptions of sexual activities between an adolescent male and children, because audio descriptions permit examination of sexual arousal to activities involving violence toward children (Chaplin, Rice, & Harris, 1995; Quinsey & Chaplin, 1988).

The study of the discriminative validity of phallometric testing with adolescent sex offenders has important implications for the assessment and management of adolescent sex offenders, as well as for etiological theories regarding sexual preferences and sexual

offending. The present results suggest that pedophilic interests can be detected in offenders as young as 14 years old. This suggests that the factors influencing the development of pedophilic interests operate in early adolescence or perhaps even earlier. Quinsey and Lalumière (1995) have suggested that the development of pedophilic interests could begin in utero. The identification of pedophilic interests in even younger adolescent sex offenders and longitudinal evidence of the stability of these interests would greatly inform developmental theories of pedophilia.

¹ Unlike the adolescent offenders, young adult offenders with child victims of both sexes had lower pedophilic indices than the young adults with only male child victims. Besides the small sample size, a plausible explanation is that a higher proportion of these participants had committed offenses against related victims, and incest offenders tend to score lower than offenders who have only unrelated child victims (Seto et al., 1999). However, four out of nine of these young adults acknowledged being sexually attracted to or interested in prepubescent children.

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