

## Sexual Arousal and Arousability to Pedophilic Stimuli in a Community Sample of Normal Men

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Self-reported and physiological sexual arousal to adult and pedophilic stimuli were examined among 80 men drawn from a community sample of volunteers. Over ¼ of the current subjects self-reported pedophilic interest or exhibited penile arousal to pedophilic stimuli that equalled or exceeded arousal to adult stimuli. The hypothesis that arousal to pedophilic stimuli is a function of general sexual arousability factors was supported in that pedophilic and adult heterosexual arousal were positively correlated, particularly in the physiological data. Subjects who were highly arousable, insofar as they were unable to voluntarily and completely inhibit their sexual arousal, were more sexually aroused by all stimuli than were subjects who were able to inhibit their sexual arousal. Thus, arousal to pedophilic stimuli does not necessarily correspond with pedophilic behavior.

Sexual arousal appears to be a function of individual differences. A person's willingness to experience sexual stimulation and engage in sexual behavior has been termed *erotophobia-erotophilia* (Byrne, 1983). Erotophobic persons avoid sexual fantasy and activity and adhere to highly restrictive sexual norms. Conversely, erotophilic persons are attracted to and involved in sexual fantasy and activity. Presumably, erotophobia and erotophilia mediate sexual arousal to pedophilic, as well as adult, stimuli (Hall & Andersen, 1993) and thus may be indicative of generalized sexual arousability.

Sexual arousal to pedophilic stimuli has been posited as a motivational factor in sexual aggression against children. Many sexual offenders against children exhibit equal or greater genital arousal to pedophilic stimuli than to consenting adult stimuli (Abel, Blanchard, & Barlow, 1981; Avery-Clark & Laws, 1984; Freund & Blanchard, 1989; Grossman, Cavanaugh & Haywood, 1992; Hall,

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Proctor, & Nelson, 1988; Harris, Rice, Quinsey, Chaplin, & Earls, 1992; Marshall, Barbaree, & Christophe, 1986; Murphy, Haynes, Stalgaitis, & Flanagan, 1986; Quinsey & Chaplin, 1988). Although men who have not been sexually aggressive with children tend to exhibit less arousal to pedophilic stimuli than men who have (Barbaree & Marshall, 1989; Fedora et al., 1992; Grossman et al., 1992; Harris et al., 1992; Quinsey & Chaplin, 1988), a sizable minority of men in normal populations who have not molested children may exhibit pedophilic fantasies and arousal. In recent studies, 12 to 32% of community and college samples of men reported sexual attraction to children (Briere & Runtz, 1989; Haywood, Grossman, & Cavanaugh, 1990) or exhibited penile response to pedophilic stimuli (Barbaree & Marshall, 1989; Fedora et al., 1992; Frenzel & Lang, 1989; Freund & Watson, 1991). Thus, arousal to pedophilic stimuli does not necessarily correspond with pedophilic behavior (Hall, 1990; Schouten & Simon, 1992), although there are arguments to the contrary (Quinsey & Laws, 1990).

One explanation for the absence of arousal to pedophilic stimuli among some child molesters and the presence of arousal to pedophilic stimuli among men who have not molested children is individual differences in generalized sexual arousability. Some sexual aggressors are more arousable than others to sexual stimuli, independent of stimulus content or stimulus deviance (Barbaree & Marshall, 1989; Hall, 1989, 1991; Hall et al., 1988). Those sexual aggressors who are able to voluntarily and completely inhibit their sexual arousal to highly arousing stimuli when instructed to do so, exhibit less sexual arousal when instructed to allow themselves to become aroused to sexual stimuli than men who are unable to completely inhibit their sexual arousal (Hall, 1989, 1991). Thus, the presence of arousal to pedophilic stimuli in any given individual may be at least partially a function of generalized sexual arousability rather than an indication of sexual deviance.

The purpose of the current study was to examine sexual arousal to adult and to pedophilic stimuli in the largest community sample of men studied to date and determine whether the arousal of normal men to pedophilic stimuli is a function of generalized sexual arousability as it appears to be among sexual aggressors (Hall, 1989, 1991; Hall et al., 1988). Samples of normal men have been small and unrepresentative in previous studies of physiological sexual arousal in response to pedophilic stimuli. It was hypothesized that men who were the most arousable to adult stimuli would also be the most arousable to pedophilic stimuli. In addition, it was hypothesized that men who were able to completely inhibit sexual arousal in response to highly arousing stimuli would exhibit less sexual arousal when instructed to allow themselves to become aroused to sexual stimuli than men who were unable to completely inhibit sexual arousal in response to highly arousing stimuli.

## Method

### *Subjects*

Subjects were recruited via a newspaper advertisement placed in the sports section of the Sunday edition of a newspaper in a large city on two occasions. The newspaper advertisement read as follows:

### Earn \$40

for participation in an experiment on human sexuality that will require a total of 8 hours on two consecutive days. Males 18 and older only. For further information, contact Program Coordinator at \_\_\_\_\_.

Upon arrival for the study, subjects were informed by the female graduate student experimenter about the requirements of the study and that the results of the study would be confidential and that they could withdraw from the study at any time. Subjects were screened out if they were under medication or other drugs. None of the subjects reported experiencing sexual dysfunction.

Eighty-six persons called to inquire about the study but did not schedule appointments to participate in the study. Twenty-two persons scheduled appointments but failed to appear. Nineteen subjects withdrew from the study after the requirements were explained to them. One subject completed self-report measures, but not the physiological assessment, and one could not understand English and was eliminated from the study.

Eighty subjects completed the study. Their mean age was 38.3 years ( $SD = 10.74$ , range = 19–66). Fifty-two subjects were Caucasian, 25 were African American, 2 were Hispanic, and 1 was Asian American. The subjects' mean education was 14.1 years ( $SD = 2.46$ , range = 10–20), and their Shipley IQ mean was 110.24 ( $SD = 9.64$ ). Twenty-eight subjects were never married; 26 were married; 18 were divorced; 6 were separated; and 2 were widowed. It appears that unmarried subjects were somewhat overrepresented in this sample.

### *Measures*

Each subject was administered the Shipley Institute of Living Scale and the Laws (1986) Sexual Deviance Card Sort. The Adult Heterosexual Interest (10 items) and Female Pedophilic Interest (10 items) subscales of the Sexual Deviance Card Sort were relevant for this study. For each of the items on the Adult Heterosexual Interest and Female Pedophilic Interest subscales, subjects were also asked if they had engaged in these activities (Adult Heterosexual Activity, Female Pedophilic Activity). Internal consistency data for the current sample on the Adult Heterosexual Interest, Female Pedophilic Interest, Adult Heterosexual Activity, and Female Pedophilic Activity subscales are presented below.

### *Apparatus*

All subjects were assessed with the penile plethysmograph. During this physiological assessment procedure, each subject was seated in a reclining chair located in a private room equipped with an intercom. Auditory stimuli were presented by an audiotape player into speakers in the subject's testing area and slides were presented via a remote control. Penile circumference changes were measured using a D. M. Davis mercury-in-rubber strain gauge that each subject fitted on the shaft of his penis. New 85 mm circumference mercury-in-rubber strain gauges were used for each subject. Each strain gauge was calibrated before each assessment to determine that the relationship between circumference and deflection was linear. The leads from the gauge were con-

nected to a Parks 240 plethysmograph, which recorded penile circumference changes in millimeters. The plethysmograph and audiotape player were located outside the subject's testing area, and the slide projector was in the subject's testing area.

### *Stimulus Materials*

Slides of frontal views of nude prepubescent female children, nude adult females, and slides of clothed prepubescent female children were presented, two slides per category per session. To control for order effects, the orders of presentation of the slides were randomly selected for the first assessment session, and different orders of presentation of the slides were used in the second session. These slides were selected from standard stimuli available at the time from Farrall Instruments (Grand Island, NE). In previous studies using slide stimuli, control stimuli (e.g., landscapes) that are not comparable to sexual stimuli have been used (Fedora et al., 1992; Freund & Blanchard, 1989; Freund & Watson, 1991). In the current study, an attempt was made to develop nonsexual stimuli that were comparable to the sexual stimuli. Thus, slides of clothed prepubescent girls were used as the control stimuli for the slides of nude women and prepubescent girls.

Subjects were also presented in each session with audiotaped narration in the second person by a male. These narrations are D. R. Laws' (1986) standardized stimuli, including depictions of consenting sexual intercourse with a female adult, consenting sexual intercourse with a female child, the rape of an unwilling female child, and nonsexual physical violence against an unwilling female child. An additional contrast depiction involving incidental social contact with a female child in a supermarket was developed for the current study. This contrast depiction is analogous to contrast audiotape stimuli used in studies of sexual aggression against adults that involve nonsexual adult social interactions (e.g., Quinsey, Chaplin, & Upfold, 1984). The consenting audiotapes depict the females as being aroused by the sexual activity (e.g., ". . . she likes you to make love to her . . .;" ". . . she's excited . . . she really enjoys you . . ."), whereas the females in the unwilling situations are depicted as experiencing pain (e.g., ". . . she's screaming in terror . . .;" ". . . she screams that you're hurting her"). One tape per category per assessment session was presented. The orders of presentation of the tapes were randomly selected for the first assessment session, and the orders of presentation of the tapes were different in the second session. Before each of the tapes involving children was presented, subjects were told that the child depicted in the tape was less than 12 years old. In each of the tapes depicting children, references were repeatedly made to "the child." The tapes were of approximately 3 min. duration. Internal consistency data on these audiotapes for the current sample are reported below.

### *Procedures*

Before the physiological assessment procedure, the subjects were provided with a tour of the laboratory and a manual demonstration of the strain gauge. Each subject then entered the private room and attached a 85 mm strain gauge

to his penis. If the plethysmograph indicated that the subject's penile circumference was greater or less than 85 mm, the subject was asked to disconnect the 85 mm gauge, which the subject replaced with a gauge corresponding to his penile circumference.

Prior to the presentation of stimuli, subjects were instructed to allow themselves to become aroused to the stimuli. Two slides from each category and one tape from each category were presented one stimulus at a time during approximately 1½ hour sessions on 2 consecutive days. Each stimulus was presented for 4 min. Subsequent stimuli were not presented until the subject returned to a baseline level of response or until 4 min. had elapsed. In an effort to circumvent nonattending to stimuli, the subjects were randomly requested to report the content of the previous stimulus at the offset of the stimulus. Such reporting was not requested after each stimulus because of evidence that such cognitive processing may inhibit sexual arousal (Wormith, 1986). A maximum penile tumescence score was obtained for each subject in response to each of the slides and audiotapes. Penile tumescence raw score data were not transformed because of the lower reliability and validity of such data transformations (Hall, 1990) and because this was a descriptive study rather than a study of the discriminative validity of penile tumescence measures. Responses to the slides and audiotapes were analyzed separately.

At the end of the second session, each subject was requested to attempt to suppress his arousal, at which time the slide that had elicited the highest level of arousal during the two sessions was presented. This procedure was introduced to assess the extent to which the subjects might be able to consciously influence the physiological data (Laws & Holmen, 1978). Suppression data were dummy coded (1 = complete inhibition, 0 = incomplete inhibition) for comparability with previous studies (Hall, 1989, 1991). Complete inhibition was defined as the ability to completely suppress arousal to baseline in the presence of the stimulus that had elicited the highest level of arousal.

When the assessment procedures were concluded or at the time when the subjects withdrew from the experiment, they were debriefed with a statement that has been shown to dispel rape myths (Check & Malamuth, 1984), which was modified to pertain to child sexual and physical abuse. The debriefing statement was discussed with each subject and intended to dispel the notion that sexual abuse is an acceptable behavior or that it is sexually arousing to victims.

## Results

### *Self-Report Data*

The Adult Heterosexual Interest and Female Pedophilic Interest subscales of the Laws (1986) Sexual Interest Card Sort had Cronbach's alphas of .91 and .95, respectively. The Cronbach's alphas for the Adult Heterosexual Activity and Female Pedophilic Activity were .71 and .72, respectively.

Adult Heterosexual Interest was not significantly correlated with subject age but was significantly correlated with Shipley IQ scores ( $r = .27$ ). Adult Heterosexual Activity was not significantly associated with subject age or IQ.

Neither Female Pedophilic Interest nor Female Pedophilic Activity was significantly associated with subject age or IQ.

Seventy-nine of the 80 subjects indicated at least some sexual interest in adult women, and all 80 subjects reported that they had engaged in sexual acts with adult women (mean number of acts = 9.44,  $SD = 1.61$ ). Sixteen of the 80 subjects (20%) admitted at least some pedophilic interest, and 3 subjects admitted to engaging in pedophilic behavior. These latter 3 subjects were not removed from the analyses in an effort to maintain the representativeness of the sample.

Adult heterosexual interest was correlated .36 with adult heterosexual acts. Heterosexual pedophilic interest was correlated .42 with heterosexual pedophilic acts. Adult heterosexual interest was correlated .19 with heterosexual pedophilic interest.

### *Physiological Data*

*Limited penile response to stimuli.* Some investigators have eliminated subjects from analyses who exhibit limited penile responses to stimuli because it is assumed that such limited penile response is not reliable (e.g., Barbaree & Marshall, 1989). Subjects are typically removed by estimating individual responses as a percentage of a subject's estimates of a full erection. However, such full erection estimates are often inaccurate (Hall et al., 1988; Wormith, 1986) and were not used in the current study. Limited arousal subjects were defined in the current study as those whose greatest response to any of the slide or audiotaped stimuli was less than 3 mm penile circumference change. This 3 mm criterion is rather liberal in that subjects whose greatest response to any stimulus was less than 3 mm penile circumference change have not been excluded from other major studies (e.g., Hall, 1989; Harris et al., 1992). Seventeen subjects (21.25% of the sample) met this limited arousal criterion. All the following analyses were conducted for subjects whose penile circumference change was 3 mm or greater and a second set of analyses was conducted for the whole sample without excluding limited arousal subjects. Consistent with other findings, excluding low arousal subjects did not change any of the results (Harris et al., 1992). The patterns of sexual arousal for the 17 low arousal subjects were quite similar to those of the rest of the sample. Thus, the following results are reported for the whole sample to maximize their generalizability. All statistically significant findings that follow for the whole sample were also statistically significant for the truncated sample in which subjects exhibiting limited arousal were removed.

Subjects who exhibited extremely high levels of sexual arousal were also not removed from the sample to insure the sample's representativeness. The 3 subjects who admitted to engaging in pedophilic behavior were not outliers in terms of their physiological sexual arousal patterns.

*Slide stimuli.* Cronbach's alphas for the subjects' penile responses to the contrast, child slides and adult slides were .86, .85, and .80, respectively. Ten subjects exhibited no sexual arousal (i.e., no penile circumference change from baseline) to the contrast slides, 4 exhibited no arousal to the adult female slides, and 9 exhibited no arousal to the female child slides. Maximum penile tumes-

TABLE 1  
INTERCORRELATIONS BETWEEN SLIDE STIMULI

	N2	N3	N4	A1	A2	A3	A4	C1	C2	C3	C4
Contrast 1	45	.64	.64	.53	.58	.30	.31	43	53	.56	54
Contrast 2		.52	.60	.63	.46	.22	.28	74	86	.53	43
Contrast 3			.92	.43	.57	.58	.56	49	.62	.85	.76
Contrast 4				.43	.59	.53	.51	.50	.60	.86	.81
Adult 1					.47	.42	.29	.75	.65	.38	.52
Adult 2						.54	.63	.43	.47	.53	.58
Adult 3							.65	.20	.24	.49	.53
Adult 4								.22	.26	.58	.48
Child 1									.78	.49	.55
Child 2										.53	.48
Child 3											.71

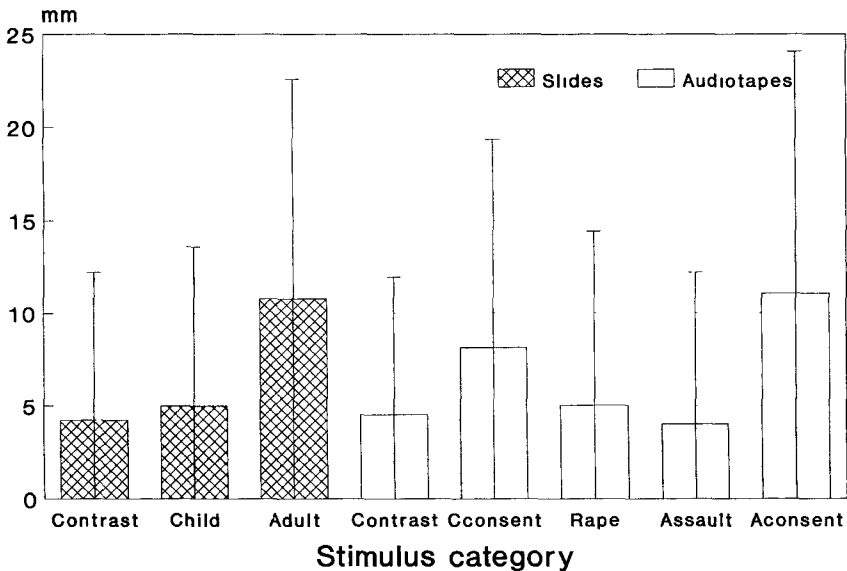


FIG. 1. Penile tumescence means in response to slide and audiotape stimuli. (Cconsent = child consenting, Aconsent = adult consenting).

cence means in response to each of the slide categories were: contrast, 4.23 mm ( $SD = 7.99$ , range = 0 to 58.93); adult female, 10.78 mm ( $SD = 11.80$ , range = 0 to 61.48); and female child, 4.99 mm ( $SD = 8.60$ , range = 0 to 59.55). These means are presented in Figure 1. A MANOVA revealed significant differences between these means, Wilks' Lambda = .53,  $F(3,77) = 22.44$ ,  $p < .0001$ . Pairwise  $t$ -tests suggested significant differences between the means for adult female and contrast slides ( $p < .0001$ ) and for the adult female and fe-

TABLE 2  
INTERCORRELATIONS BETWEEN AUDIOTAPED STIMULI

	N2	AC1	AC2	CC1	CC2	CR1	CR2	CA1	CA2
Contrast 1	.70	53	52	73	48	66	70	83	67
Contrast 2		44	59	56	57	56	83	44	59
Adult consent 1			63	60	54	54	53	54	42
Adult consent 2				54	62	56	61	53	54
Child consent 1					51	63	71	73	60
Child consent 2						.49	60	48	59
Child rape 1							58	68	51
Child rape 2								.73	84
Child Assault 1									.70

male child slides ( $p < .0001$ ). Twenty-six subjects exhibited sexual arousal to the child slides that equalled or exceeded their arousal to the adult slides. The difference between the means for the female child and contrast slides approached statistical significance ( $p < .099$ ).

*Audiotape stimuli.* The Cronbach's alphas for the subjects' penile responses to the contrast, adult consenting, child consenting, child rape, and child assault audiotapes were .82, .77, .67, .73, and .82, respectively. Fifteen subjects exhibited no arousal to the contrast audiotapes, 8 exhibited no arousal to the adult consenting audiotapes, 15 exhibited no arousal to the child consenting audiotapes, 17 exhibited no arousal to the child rape audiotapes, and 17 exhibited no arousal to the child aggression audiotapes. Maximum penile tumescence means in response to each of the audiotape categories were: contrast, 4.52 mm ( $SD = 7.43$ , range = 0 to 61.35); adult consenting, 11.07 mm ( $SD = 13.00$ , range = 0 to 61.35); child consenting, 8.13 mm ( $SD = 11.24$ , range = 0 to 61.35); child rape, 5.02 mm ( $SD = 9.41$ , range = 0 to 61.35); and child assault, 4.02 mm ( $SD = 8.19$ , range = 0 to 61.35). These means are presented in Figure 1. Consistent with other research on penile tumescence (Julien & Over, 1988), the audiotaped stimuli elicited penile responses that equalled or exceeded responses to the slide stimuli.

A MANOVA suggested significant differences between the maximum penile tumescence means in response to the audiotape categories, Wilks' Lambda = .56,  $F(5,75) = 11.97$ ,  $p < .0001$ . Pairwise  $t$ -tests suggested that the adult consenting ( $p < .0001$ ) and child consenting ( $p < .0001$ ) means were significantly greater than the contrast mean. The adult consenting mean was also significantly greater than the child consenting mean ( $p < .004$ ). The child rape and child aggression means were not significantly greater than the contrast mean. Forty-six subjects (57.5%) exhibited sexual arousal in response to the child consenting tapes that exceeded their sexual arousal in response to the contrast tapes and 21 subjects (26.25%) exhibited sexual arousal to the child consenting tapes that equalled or exceeded their arousal to the adult consenting tapes.

*Demographic characteristics.* Shipley IQ was not significantly correlated with penile response to any of the 8 slide or 10 audiotaped stimuli. Age was not significantly correlated with penile response to any of the 8 slide stimuli. How-



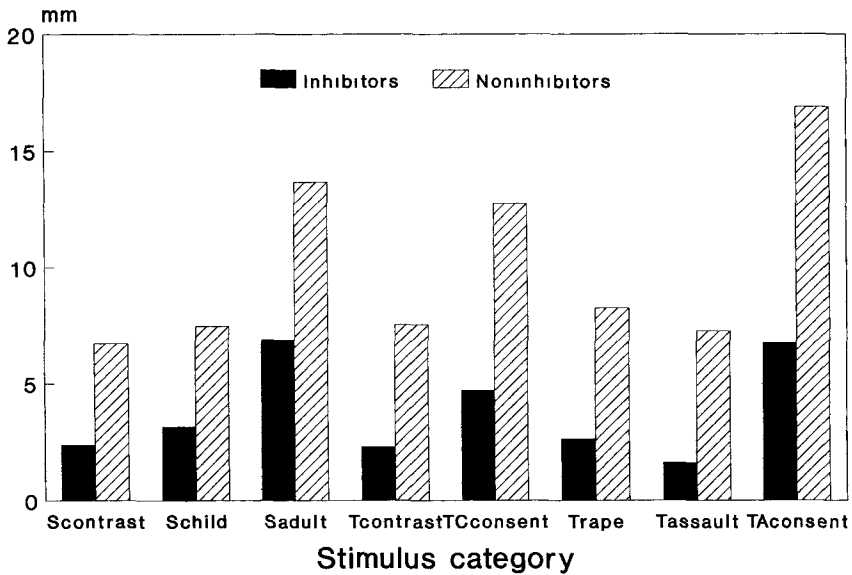


FIG. 2 Penile tumescence means of inhibitors ( $N = 46$ ) vs. noninhibitors ( $N = 34$ ). (Scontrast = contrast slides, Schild = child slides, Sadult = adult slides, Tcontrast = contrast tapes, TCconsent = child consenting tapes, Trape = child rape tapes, Tassault = child assault tapes, TAconsent = adult consenting tapes)

ever, age was significantly correlated with penile response to one of the audiotapes depicting consenting sexual intercourse with a female adult ( $r = -.25$ ), with penile response to one of the audiotapes that depicted consenting sexual intercourse with a female child ( $r = -.36$ ), and with penile response to both audiotapes that depicted the rape of an unwilling female child ( $r = -.31$ ,  $r = -.26$ ).

#### *Inhibitors Versus Noninhibitors*

Forty-six subjects were able and 34 were unable to completely inhibit their sexual arousal in response to the slide that had been most arousing to them. Most subjects ( $n = 63$ ) used a cognitive method to inhibit sexual arousal (e.g., distracted self with neutral or aversive thought), including 78.2% of those who were able and 79.4% of those who were unable to completely inhibit their sexual arousal. The most arousing slide for 72 subjects was one of the adult female slides and for 8 subjects was one of the female child slides. A MANOVA suggested that the inhibitors did not differ significantly from noninhibitors on self-reported adult heterosexual or pedophilic interest,  $F < 1$ . However, a second MANOVA suggested that noninhibitors exhibited greater overall physiological sexual arousal to the stimuli, excluding their responses when instructed to inhibit their arousal, than inhibitors, Wilks' Lambda = .78,  $F(8,71) = 2.46$ ,  $p < .021$ . All pairwise comparisons between physiological sexual arousal in response to each stimulus for noninhibitors and inhibitors were significant,  $p < .025$ . Means for noninhibitors and inhibitors are presented in Figure 2.

### *Relationships Between Self-Report and Genital Measures*

Correlation coefficients between self-reported Adult Heterosexual Interest on the Laws Card Sort and mean penile responses for each category of stimuli (contrast slides, child slides, adult slides, contrast tapes, adult consenting tapes, child consenting tapes, child rape tapes, child assault tapes) ranged from  $-.17$  to  $-.04$ . Correlation coefficients between the self-reported Female Pedophilic Interest on the Laws Card Sort and mean penile responses for each category of stimuli ranged from  $-.04$  to  $.08$ .

### Discussion

The current study is the largest to date to employ pedophilic stimuli and genital measures with men drawn from a community sample of volunteers. The current results suggest that sexual arousal to pedophilic stimuli occurs among a sizable minority of normal men who report no pedophilic behavior and is not necessarily associated with pedophilic behavior. Consistent with previous data (Barbaree & Marshall, 1989; Briere & Runtz, 1989; Fedora et al., 1992; Freund & Watson, 1991), 20% of the current subjects self-reported pedophilic interest and 26.25% exhibited penile arousal to pedophilic stimuli that equalled or exceeded arousal to adult stimuli. The hypothesis that sexual arousal to pedophilic stimuli is a function of general sexual arousability factors was supported by the positive correlation of pedophilic with adult heterosexual arousal, particularly in the physiological data. Subjects who were highly arousable, insofar as they were unable to voluntarily and completely inhibit their sexual arousal, were more sexually aroused by all stimuli than were subjects who were unable to inhibit their sexual arousal. These findings do not appear to be a function of demographic variables insofar as IQ was significantly associated with only one of the 20 sexual arousal variables (2 self-report variables and penile responses to 18 stimuli), and age was significantly associated with only 4 of these 20 variables.

The self-report and physiological data in the current study present somewhat different pictures of the subjects' sexual arousal patterns. Self-reported sexual interest may be less subject than physiological sexual arousal to general sexual arousability factors in that there was a low correlation between self-reported pedophilic and adult interest, and subjects who were able to completely inhibit their physiological sexual arousal did not differ in their self-reported adult or pedophilic interest from subjects who were unable to completely inhibit their physiological sexual arousal. A possible reason for this poor correspondence between self-reported and physiological sexual arousal is that subjects' self-reported sexual interest in the current study was not in response to the specific stimuli included in the physiological assessment. However, it is also possible that self-reporting sexual arousal created a performance demand that may partially account for the self-report/physiological discrepancy (Farkas, Sine, & Evans, 1979).

Physiological sexual arousal in response to adult heterosexual stimuli was highly positively correlated with sexual arousal to pedophilic and contrast stimuli. As in previous studies, correlations of penile responses between

stimulus categories often exceeded within-stimulus category correlations (Hall, 1989; Hall et al., 1988). Subjects who were highly arousable, insofar as they were unable to voluntarily and completely inhibit their sexual arousal, were more sexually aroused by all stimuli than were subjects who were able to inhibit their sexual arousal. Differences in arousal as a function of inhibition ability have also been reported among sexual offender populations (Hall, 1989; Hall, 1991) and appear to be independent of other physiological variables, such as subject age (Hall, 1991).

Although physiological sexual arousal in response to the various stimulus categories was positively correlated, it was not indiscriminate. Situations in which the partner consented to sexual activity, even when the partner was a child, were more sexually arousing to the current subjects than were situations which involved force or the contrast stimuli. Although the subjects exhibited sexual arousal to stimuli involving the rape or assault of a female child, this sexual arousal did not exceed that in response to contrast stimuli involving a man conversing with a child in a nonsexual situation. These data are consistent with data on normals, which suggest that rape stimuli are more sexually arousing when the victim is portrayed as enjoying versus abhorring the experience (Malamuth & Check, 1980), and with data on sexual offenders in which consenting stimuli with children or adults are more sexually arousing than stimuli involving force (Hall et al., 1988). Moreover, sexual arousal in response to consenting sexual activity with a child was greater than sexual arousal in response to consenting sexual activity with an adult for 26.25% of the current subjects. It is unlikely that these subjects mistook the child consenting stimuli as adult consenting stimuli because before each of the tapes involving children was presented, subjects were told that the child depicted in the tape was less than 12 years old.

The slide and audiotape data combined suggest that most normal men are not sexually aroused by nude female children *per se*, but that some men who report no pedophilic activity are sexually aroused when a female child is depicted as enjoying sexual activity with an adult male. Consenting heterosexual activity, independent of the maturity of the partner, is sexually arousing to some men. However, although the current subjects' arousal to consenting stimuli involving children was significantly greater than their arousal to contrast stimuli, their arousal to consenting stimuli involving children was significantly less than their arousal to consenting stimuli involving adults.

Although the current study is the largest to date to employ pedophilic stimuli and genital measures with men drawn from a community sample of volunteers, one limitation of this study may be the representativeness of the sample. Because subjects were recruited for a study on human sexuality, it is possible that a disproportionate number of sexually uninhibited, or perhaps deviant, subjects volunteered for the study. Moreover, 21% of the subjects who demonstrated sufficient interest in the study to arrive for a scheduled assessment meeting withdrew from the study when they learned that genital measures were involved. However, such subject attrition is not uncommon in studies involving genital assessment measures. For example, Malamuth (1986) reported a 29% attrition rate among college students when they discovered the study involved

genital measures. Nevertheless, the anonymity of subjects in the current study probably created less of a demand for socially desirable responding than in forensic settings where sexual aggressors and control subjects typically have been assessed. Indeed, the physiological sexual arousal means in the current results are generally greater than in studies in which sexual offenders have been assessed (e.g., Hall, 1989; Harris et al., 1992).

Despite arguments to the contrary (e.g., Harris et al., 1992), a major implication of this study is that sexual arousal to pedophilic stimuli does not necessarily correspond with pedophilic behavior. One-fifth of the community sample of men who denied pedophilic behavior self-reported some pedophilic interest and over one-fourth of these men exhibited penile responses to pedophilic stimuli that equalled or exceeded their penile responses to adult stimuli. Many men who have molested children do not exhibit pedophilic patterns of arousal, particularly incest offenders (Barbaree & Marshall, 1989) and those who are able to inhibit their arousal (Hall et al., 1988). Variables other than arousal to pedophilic stimuli may motivate many child molesters, including deviant cognitions, affective dyscontrol, and developmentally related personality problems (Hall & Hirschman, 1992). Thus, arousal to pedophilic stimuli may motivate some, but not all, sexually aggressive acts against children, and a sizable minority of men who do not report engaging in pedophilic behavior exhibit sexual arousal to pedophilic stimuli.

## References

- Abel, G. G., Blanchard, E. B., & Barlow, D. H. (1981). Measurement of sexual arousal in several paraphilias: The effects of stimulus modality, instructional set, and stimulus contents on the objective. *Behavior Research and Therapy, 19*, 25-33.
- Avery-Clark, C. A., & Laws, D. R. (1984). Differential erection response patterns of sexual child abusers to stimuli describing activities with children. *Behavior Therapy, 15*, 71-83.
- Barbaree, H. E., & Marshall, W. L. (1989). Erectile responses among heterosexual child molesters, father-daughter incest offenders, and matched non-offenders: Five distinct age preference profiles. *Canadian Journal of Behavioral Science, 21*, 70-82.
- Barbaree, H. E., & Marshall, W. L. (1991). The role of male sexual arousal in rape. Six models. *Journal of Consulting and Clinical Psychology, 59*, 621-630.
- Briere, J., & Runtz, M. (1989). University males' sexual interest in children: Predicting potential indices of "pedophilia" in a nonforensic sample. *Child Abuse & Neglect, 13*, 65-75.
- Byrne, D. (1983). The antecedents, correlates, and consequents of erotophobia-erotophilia. In C. Davis (Ed.), *Challenges in sexual science* (pp. 53-75). Lake Mills, IA: Graphic.
- Check, J. V. P., & Malamuth, N. M. (1984). Can there be positive effects of participation in pornography experiments? *Journal of Sex Research, 20*, 14-31.
- Farkas, G. M., Sine, L. F., & Evans, I. M. (1979). The effects of distraction, performance demand, stimulus explicitness, and personality on objective and subjective measures of male sexual arousal. *Behaviour Research and Therapy, 17*, 25-32.
- Fedora, O., Reddon, J. R., Morrison, J. W., Fedora, S. K., Pascoe, H., & Yeudall, L. T. (1992). Sadism and other paraphilias in normal controls and aggressive and nonaggressive sex offenders. *Archives of Sexual Behavior, 21*, 1-15.
- Frenzel, R. R., & Lang, R. A. (1989). Identifying sexual preferences in intrafamilial and extrafamilial child sexual abusers. *Annals of Sex Research, 2*, 255-275.

- Freund, K., & Blanchard, R (1989). Phallometric diagnosis of pedophilia. *Journal of Consulting and Clinical Psychology, 57*, 100-105
- Freund, K., & Watson, R J. (1991). Assessment of the sensitivity and specificity of a phallometric test. An update of phallometric diagnosis of pedophilia. *Psychological Assessment, 3*, 254-260.
- Grossman, L. S., Cavanaugh, J L., & Haywood, T. W (1992). Deviant sexual responsiveness on penile plethysmography using visual stimuli: Alleged child molesters vs normal control subjects. *Journal of Nervous and Mental Disease, 180*, 207-208.
- Hall, G C N. (1989) Sexual arousal and arousability in a sexual offender population. *Journal of Abnormal Psychology, 98*, 145-149
- Hall, G C N. (1990) Validity of physiological measures of pedophilic sexual arousal in a sexual offender population: Reply to Quinsey and Laws. *Journal of Consulting and Clinical Psychology, 58*, 889-891
- Hall, G C N. (1991). Sexual arousal as a function of physiological and cognitive variables in a sexual offender population. *Archives of Sexual Behavior, 20*, 359-369
- Hall, G. C. N., & Andersen, B. L. (1993). Sexual dysfunction and deviation. In A. S. Bellack & M. Hersen (Eds.), *Psychopathology in adulthood: An advanced text* (pp. 295-318). Des Moines, IA: Allyn & Bacon.
- Hall, G. C. N., & Hirschman, R. (1992). Sexual aggression against children: A conceptual perspective of etiology. *Criminal Justice and Behavior, 19*, 8-23
- Hall, G C N., Proctor, W C., & Nelson, G M (1988). Validity of physiological measures of pedophilic sexual arousal in a sexual offender population. *Journal of Consulting and Clinical Psychology, 56*, 118-122
- Harris, G. T, Rice, M. E., Quinsey, V L., Chaplin, T. C., & Earls, C. (1992) Maximizing the discriminant validity of phallometric assessment. *Psychological Assessment, 4*, 502-511
- Haywood, T W, Grossman, L. S., & Cavanaugh, J. L. (1990) Subjective versus objective measurements of deviant sexual arousal in clinical evaluations of alleged child molesters. *Psychological Assessment, 2*, 269-275
- Juhen, E., & Over, R. (1988). Male sexual arousal across five modes of erotic stimulation. *Archives of Sexual Behavior, 17*, 131-143
- Laws, D R. (1986). *Sexual Deviance Card Sort*. Unpublished manuscript, Florida Mental Health Institute, Tampa, FL
- Laws, D R., & Holmen, M L (1978) Sexual response faking by pedophiles. *Criminal Justice and Behavior, 5*, 343-356
- Malamuth, N. M. (1986) Predictors of naturalistic sexual aggression. *Journal of Personality and Social Psychology, 50*, 953-962.
- Malamuth, N. M., & Check, J V P. (1980). Sexual arousal to rape and consenting depictions: The importance of the woman's arousal. *Journal of Abnormal Psychology, 89*, 763-766
- Marshall, W. L., Barbaree, H. E., & Christophe, D. (1986). Sexual offenders against female children: Sexual preferences for age of victims and type of behaviour. *Canadian Journal of Behavioural Science, 18*, 424-439.
- Murphy, W D, Haynes, M. R., Stalgaitis, S. J., & Flanagan, B. (1986). Differential sexual responding among four groups of sexual offenders against children. *Journal of Psychopathology and Behavioral Assessment, 8*, 339-353.
- Quinsey, V L., & Chaplin, T C (1988). Penile responses of child molesters and normals to descriptions of encounters with children involving sex and violence. *Journal of Interpersonal Violence, 3*, 259-274
- Quinsey, V. L., Chaplin, T C., & Upfold, D. (1984). Sexual arousal to nonsexual violence and sadomasochistic themes among rapists and non-sex-offenders. *Journal of Consulting and Clinical Psychology, 52*, 651-657
- Quinsey, V. L., & Laws, D. R. (1990) Validity of physiological measures of pedophilic sexual

- arousal in a sexual offender population: A critique of Hall, Proctor, and Nelson. *Journal of Consulting and Clinical Psychology, 58*, 886-888
- Schouten, P. B., & Simon, W. T. (1992). Validity of phallometric measures with sex offenders: Comments on the Quinsey, Laws, and Hall debate. *Journal of Consulting and Clinical Psychology, 60*, 812-814
- Wormith, J. (1986). Assessing deviant sexual arousal: Physiological and cognitive aspects. *Advances in Behavior Research and Therapy, 8*, 101-137

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