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**Reducing deviant sexual arousal in adolescent child molesters:
Cognitive interference and habituation strategies**

Stein, Robert Martin, Ph.D.

City University of New York, 1988

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**REDUCING DEVIANT SEXUAL AROUSAL IN
ADOLESCENT CHILD MOLESTERS:
COGNITIVE INTERFERENCE AND HABITUATION STRATEGIES**

by

ROBERT M. STEIN

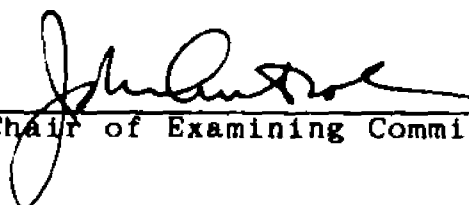
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Abstract

**REDUCING DEVIANT SEXUAL AROUSAL IN
ADOLESCENT CHILD MOLESTERS:
COGNITIVE INTERFERENCE AND HABITUATION
STRATEGIES**

by

Robert M. Stein

Advisor: Professor John S. Antrobus

There are a considerable number of sexual offenses committed by adolescent boys against young female children. Laboratory measurement of the penile erection response, using slides across a generalization gradient of age, is the best method of assessing sexual arousal patterns in adolescent child molesters.

The most effective treatment for deviant sexual arousal is satiation therapy, a treatment that involves reducing the reinforcing value of deviant sexual stimuli through repetition.

The present study, with a group of 21 male adolescent child molesters, used a satiation procedure and a distraction procedure to determine their effectiveness in reducing deviant sexual arousal.

Subjects were divided into three groups. All were assessed pre-treatment by measuring penile erection responses to an across age generalization gradient assessment, using color slides. Each group then underwent three treatment sessions.

The first group was exposed to repeated presentations of a slide of a deviant target (a nude pre-pubescent girl) for twelve, two-minute trials. Following each trial, any erection response was allowed to return to baseline.

The second group also was exposed to twelve, two-minute presentations of a deviant target. During the final thirty seconds of each two-minute trial, each subject in the second group engaged in a distraction task, namely, to verbalize a sexually neutral audiotape as he heard it presented to him.

The third group was a control group. The procedure for this group was identical to the second group, but the audiotape described a sexual interaction between an adolescent boy and a pre-pubescent girl.

Following treatment, all subjects were assessed again with the generalization gradient assessment.

Results indicated that, as expected, the first two groups showed significantly lower erection responses to slides of pre-pubescent girls at post-assessment, with the greatest effect for the group that engaged in the distraction task. The control group did not show a significant difference. Within session, subjects who engaged in the distraction task showed a decrease in erection response during the task. The control group subjects showed an increase in erectile responsiveness during verbalization of the deviant audiotape.

The study demonstrated that a short-term intervention that combines repetition and distraction can be effective in reducing erectile response to deviant targets in a laboratory setting.

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Reducing deviant sexual arousal in
adolescent child molesters:
Cognitive interference and habituation
strategies

The problem of adolescent sex offenders

A large proportion of sexual offenses are committed by adolescents, and their victims are often children. Uniform Crime Reports during the late 1970's showed that of those individuals arrested for rape, over 30% were adolescents (U.S. Dept. of Justice, 1980). Fehrenbach, Smith, Monastersky, and Deisher (1986) evaluated 305 adolescent sex offenders. These were boys seen at the adolescent clinic of the University of Washington. More than 60% had sexually victimized a child under twelve. Virtually all studies with adolescent sex offenders have involved male offenders. There have been no published studies describing a female offender population.

Ageton (1983) studied a national probability sample of 863 male adolescents aged 13-19 years. A total of 8,000 households were approached for the study, and all youth aged 11-17 were eligible to participate. Out of 2,360 eligible youth, 1,725 participated. These boys were interviewed face-to-face over a period of five

years. Over the five year period, 231 subjects dropped out. The rate of "hands-on" sexual assaults by adolescent males ranged from 5% to 16%. The range reflects a 95% confidence interval. Thirteen year olds committed the fewest assaults, and seventeen year olds the most. The other age groups were between these two extremes, and were equivalent.

Adolescent offenders who do not undergo intervention are at risk for developing a lifetime pattern of sexually deviant behavior. Abel, Mittelman, and Becker (1984) reported that, of their sample of 411 adult paraphiliacs, 58% had a deviant sexual interest pattern by age 19. They presented data on 240 adult sex offenders who had started their deviant behavior prior to age 18. They found that each offender had an average of 6.75 victims as a youth, and 380 victims as an adult. Although this was a retrospective study (there were no data on how many adolescent offenders stopped committing deviant acts after age 18), it indicates the need for early intervention with adolescent sex offenders.

Among adult child molesters, there is a positive correlation between number of victims and the amount of force used in committing the offense (Marshall, Barbaree, and Christophe, 1986). These authors suggest that it is perhaps not so much their sexual deviance and

their desire to be physically abusive that draws these men to sexually abuse children, but rather that these tendencies develop with repeated sexual involvement with young children. This in itself is not an explanation of why greater force is used over time. It could be that, over time, a child molester experiences a greater number of children who either resist or successfully escape his advances. These events may lead to masturbatory fantasy in which more coercion is used, which in turn leads to greater force used in the commission of an offense. This possibility has not yet been subjected to any kind of empirical test, and for now remains pure speculation.

Most sex offender treatment programs only accept adults into treatment. The observation that greater force is used over time would encourage early intervention with sex offenders.

Prior to the development of behavioral treatment procedures for sex offender treatment in the late 1970's, the primary method of dealing with sex offenders was incarceration. Alberton, Clarke, and Sirota (1987) report that, in New York State, it costs approximately \$80,000.00 per year to incarcerate one sexual offender. Not only is incarceration ineffective, it is also quite costly. Cost of treatment for a sex offender in an

outpatient treatment setting may be as little as \$3,000.00 per year.

The development of deviant sexual arousal

Sexual deviation in a sexually mature individual is most likely a learned phenomenon. McGuire, Carlisle, and Young (1965), after treating 45 adult sexual deviants, postulated that arousal to deviant sexual cues takes place after an initial deviant sexual experience, which plays its part only in supplying later masturbatory fantasy. In this classical conditioning model, the initial deviant sexual experience (the conditioned stimulus) is paired with something that elicits penile erection. The model does not specify what initially elicited penile erection (the unconditioned stimulus). However, it is well established that spontaneous penile arousal occurs quite often in adolescents. Additionally, a likely unconditioned stimulus for penile erection is manual contact (masturbation). Following this initial deviant sexual experience, the prospective deviant then masturbates while continuing to fantasize about the deviant experience. This only serves to strengthen the value of the deviant fantasy as an erotic stimulus. Why

should the prospective deviant choose to masturbate to his particular deviant fantasy rather than to fantasy of non-deviant intercourse? The determining factor may be that the precipitating incident was the first real sexual experience as opposed to stories from others or from books. This was in fact the case for 75% of the subjects of McGuire et al., based on retrospective self-report. The fact that this was the first real experience gives the incident stronger initial stimulus value as a masturbatory fantasy. The subsequent masturbation ensures that this stimulus value is increased.

McGuire et al. (1965) hypothesize that other sexual stimuli, such as fantasy of non-deviant intercourse, are being extinguished through lack of classical reinforcement. In other words, by not masturbating to non-deviant fantasy, the erotic value of this fantasy decreases over time. As the erotic value of non-deviant fantasy decreases, the erotic value of deviant fantasy increases. The problem here is that, based on classical conditioning theory, non-deviant fantasy would only extinguish if it were repeatedly engaged in with no reinforcement. McGuire et al. state that by not engaging in non-deviant fantasy, it extinguishes. McGuire et al. state that two-thirds of their subjects

had primary adult heterosexual interest before they had acquired their deviation. "Interest" does not mean that they had a well-developed sexual fantasy pattern. So rather than extinction of a non-deviant fantasy pattern, it could be that the offenders, regardless of prior interest, never developed appropriate non-deviant fantasy.

One point is worth noting here with regard to adolescent sex offenders. Since the deviation typically develops slowly over time, with deviant fantasy becoming more and more arousing, it can be expected that adolescent sex offenders would exhibit less deviant arousal relative to non-deviant arousal than adult offenders. The process of losing interest in non-deviant sexual activity takes time.

One way to test the theory of McGuire et al. (1965) would be to provide deviant sexual experience to a group of sexually inexperienced young men, but this would of course be unethical. Rachman (1966) experimentally induced sexual fetishism in three young adult male volunteers by pairing slides of nude adult females with slides of female boots. Over time, all three subjects showed strong penile erection responses in the presence of the boots. These responses were subsequently extinguished. Of interest, spontaneous recovery was

noted in all three subjects. Rachman's study did not demonstrate that fetishes occur through classical conditioning. It did demonstrate that a sexual fetish can be acquired in this fashion.

In all the discussion of the development of sexual deviation, emphasis is given to the effects of some early critical sexual experience. Since the current study involves adolescent sex offenders, that early experience is more accessible. An important question regarding adolescent sex offenders is: what are the circumstances that lead to the first deviant sexual act? Table 1 considers factors in: 1) the home environment, 2) the immediate situation, or setting, and 3) the high level of spontaneous sexual arousal that is normally present in adolescents. These environmental factors were determined by going through detailed clinical interviews with approximately 200 adolescent sex offenders seen at the Sexual Behavior Clinic of the New York State Psychiatric Institute, under the direction of Judith V. Becker. Additional information was gathered through informal discussions with the offenders throughout treatment, conducted by the author. In a later section, data will be presented that shows how the current sample fits into some of the events described in Table 1.

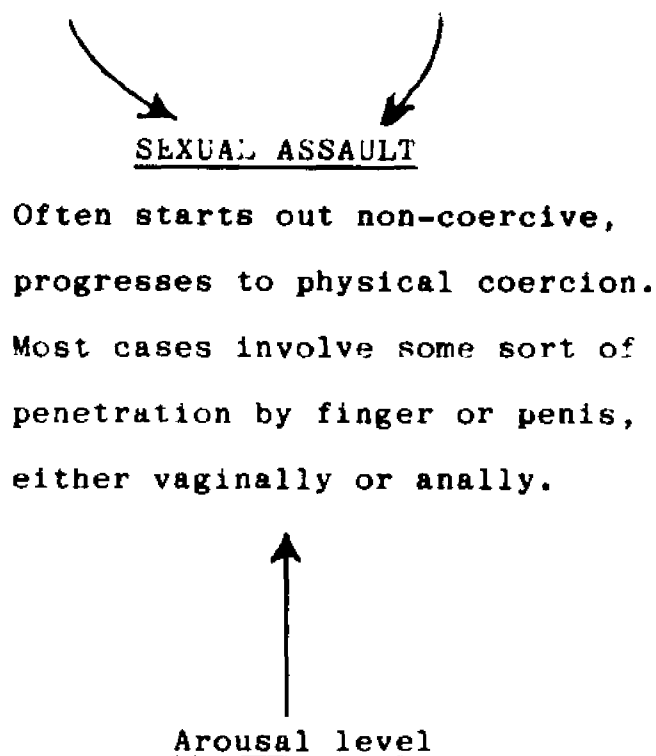
Table 1

Factors That Lead to the Commission of Child
Molestation in Adolescent Boys

Home environment	Immediate Situation
<u>Abuse</u> Physical, sexual. <u>Observation of:</u> Adult videos and porno mags. Violence on TV and in books. Physical and sexual violence in the home. Physical and sexual violence in the neighborhood. <u>Poor parental supervision</u> Single parent on welfare. Lack of or inappropriate sex education. Physical and emotional neglect.	Babysitting--alone with child victim. Sleeping in same bed as younger sister. Victim behavior--victim can be a victim of same home environment. Victim often well known to offender, may not resist <u>initial</u> sexual advances. This is especially true of very young (under 6) victims.

(See next page
for rest of
diagram)

Table 1 (continued)



Often starts out non-coercive,
progresses to physical coercion.
Most cases involve some sort of
penetration by finger or penis,
either vaginally or anally.

High spontaneous sexual and general physiological arousal level in adolescents, caused by hormone changes that accompany puberty, is the immediate antecedent to sexual assault.

Note: No single experience is postulated as leading to sexual assault. It is probably a constellation of events from each of the three factors.

Laboratory measurement

The discussion of laboratory measurement is limited primarily to work with adult male sex offenders. There are no published controlled laboratory studies with adolescent sex offenders.

How does one assess the presence or absence of deviant sexual arousal in a sex offender?

The best available measure of sexual arousal is the measurement of penile erection (Zuckerman, 1971). There are two basic types of erection measurement: circumferential devices (Bancroft, Jones, and Pullan, 1966), and volumetric devices (Freund, Sedlacek, and Knob, 1965). Measurement of penile volume is cumbersome, because placement of the device on the penis takes considerable skill. Circumferential measurement is much easier and is highly correlated with volumetric measurement (McConaghy, 1974), especially at higher levels of sexual arousal. The most common circumferential device used is the mercury-in-rubber strain gauge. It measures change in penile circumference over time, and the changes are read out as a pen deflection on moving chart paper. More details on laboratory assessment of penile erection can be found in the "apparatus" section.

Laboratory measurement takes place most commonly with rapists and child molesters because these offenses are felonies, and many laboratories receive referrals through the court system.

The two most common types of stimuli for laboratory assessment are audiotapes and slides.

Audiotaped stimuli typically consist of 2-minute long audiotaped descriptions of deviant and non-deviant sexual activity, spoken in the second person (e.g. Abel, Becker, Murphy, and Flanagan, 1981). The description can vary across target of deviation (e.g. boy vs. girl), age of victim, or amount of force used by the offender on the victim. Recent research has demonstrated that audiotaped stimuli are probably best used to assess arousal along the dimension of force used on the victim (Murphy & Barbaree, 1987).

Slide stimuli typically consist of 2-minute presentations of color slides depicting male and female nudes ranging in age from 5 to adult (eg. Marshall, Barbaree, & Christophe, 1986). Slides have also varied across target of deviation (Wormith, 1986), and degree of force depicted (Fedora, Redda, and Yeudall, 1986). Slides are probably best used to assess arousal across the age dimension, to develop what has been called an "age preference profile" (Barbaree and Marshall, 1988).

Presumably, erectile responses should be the highest to the age target that is most preferred sexually. "Preferred" usually means the age of target most often fantasized about, assessed by means of self-report. As the age of the target moves away from the preferred age, erectile responding should go down. It is not expected that child molesters would perfectly discriminate in their responding to child and adult targets. Rather, it is expected that a child molester would show the highest erectile responding to child targets, with responding gradually decreasing as the age of the target increased to that of an adult. An orderly decrease in responding as the age of the target moves farther away from the preferred age would reveal a gradient of generalization to age. For the rest of this discussion, and for the present study, "age preference profiles" will be called "generalization gradient assessments."

Four studies were performed that compared generalization gradient assessments in three groups: nonfamilial child molesters (adults who had molested children outside the family), pedophilic incest offenders (offense against a son or daughter under 12 years old), and normals. All four studies found that: 1) nonfamilial child molesters showed high erection

responses to young children, low responsiveness to older adolescents and young adults, and mixed responses to adults, 2) incestuous child molesters exhibited low erection responses to children and moderate responses to adult targets, and 3) normals showed strong erection responses to adult targets and virtually no responding to child targets (Barbaree and Marshall, 1988; Marshall, Barbaree, & Christophe, 1986; Murphy, Haynes, Stalgaitis & Flanagan, 1986; Quinsey, Chaplin, & Carrigan, 1979).

Barbaree and Marshall (1988) used the generalization gradient assessment in three groups of subjects: heterosexual nonfamilial child molesters, father-daughter incest offenders, and matched nonoffenders. A total of 83 subjects were assessed, and they generated five distinct "profile shapes." The five categories were as follows: 1) adult -- strong response to adults over 20 years old, moderate responses to 16-18 years old, and minimal responses to targets under 15, 2) teen-adult -- strong responses to targets 13 and older, with a decreasing response to younger aged targets, 3) non-discriminating -- moderate arousal to targets of all ages, 4) child-adult -- high arousal to targets over 18 and targets under 11, with weak responses to ages 12-15, and 5) child -- high arousal to targets under 12, with minimal responses to targets over 13.

Seventy percent of nonoffenders showed profiles categorized as adult. The remainder were evenly distributed between teen-adult and non-discriminating. Forty percent of incest offenders showed an adult profile, and another forty percent showed a non-discriminating pattern. The remainder showed a teen-adult profile, with one subject showing a child-adult profile.

Non-familial child molesters showed a heterogeneous pattern of response as a group. While no one in the normal and incest groups showed a child pattern, 35% of child molesters showed a child profile. Another 16% showed a child-adult profile, so roughly half of the non-familial child molester group showed high arousal to slides of children. The remainder of the child molester group was evenly distributed among the other three categories.

This study points out that, as a group, child molesters differ significantly in laboratory responses from incest offenders and normals, but since child molesters constitute such a heterogeneous group, the laboratory, at least based on Barbaree and Murphy's (1988) procedure, cannot be used to label individuals. The problem with using the laboratory to "diagnose" someone as a child molester is the high "miss" rate

(about half of child molesters are not detected). The "false positive" rate (e.g. high erection responses to children in nonoffender controls) was zero in Barbaree and Murphy's study, so it does not appear that, if used in a court situation, one would be at risk of "convicting the innocent."

What kind of erection responses can be expected of adolescent sex offenders? Adolescents are still in the process of developing specific sexual interest patterns. According to the classical conditioning model of McGuire et al. (1965), development of a deviant sexual arousal pattern does not happen overnight. It takes a period of years in which deviant masturbatory fantasy is paired with sexual arousal and becomes more and more developed and specific. Since adolescent child molesters are most likely to be in the beginning stages of a deviant arousal pattern, these adolescents would probably exhibit a less deviant sexual arousal pattern than adults. In addition, because sexual preferences have not fully developed in adolescents, one may see more non-specific arousal patterns in adolescent child molesters (that is, equivalent erectile responses to all age groups).

Problems with laboratory measurement

Faking

Faking refers to attempts by subjects to voluntarily alter their erectile responding in a laboratory situation.

There are two classes of faking: false positives and misses. A false positive occurs when a subject, using mechanical or cognitive means, attempts to achieve an erection to a stimulus that he would otherwise not be aroused to. A miss occurs when a subject attempts to suppress erectile responding to a stimulus that would ordinarily elicit an erection.

There are many methods offenders use to either suppress or enhance penile responding. Some have been observed manipulating the strain gauge to simulate an erection, or placing the gauge around their thumb to prevent any erection response (Laws & Holmen, 1978). These methods of distortion can be easily detected. Movement or manipulation of the strain gauge produces a characteristic jerking of the pen on the chart paper. If the gauge is placed around the thumb, the resulting readout is too flat. A normal readout of a flaccid penis varies slightly due to breathing and subtle muscular movement.

Studies with normal men have demonstrated that, when instructed to suppress erection, most men are able to do so (Rosen, 1973; Henson & Rubin, 1971; Laws & Rubin, 1969). Although it has not been specifically assessed in sex offenders, there is evidence that at least some nonoffenders are able to voluntarily produce moderate erectile responses to non-preferred stimuli (Quinsey and Bergerson, 1976).

Overall, among clients seen for therapy, successful faking rates range from 0% (Freund, 1967) among homosexual pedophiles to 40% among heterosexual males (Wormith, 1986). In these studies, faking was avoidance behavior, or an attempt to produce a "miss." These subjects generally attempted to suppress erectile responding to deviant stimuli.

The most difficult faking to detect and prevent is the subjects "cognitive control" of the stimulus presentation. In this situation, subjects use some form of private behavior to suppress erectile responding. For example, Geer & Fuhr (1976) presented normal subjects with a dichotic listening task, an erotic audiotape in one ear and a series of single digits in the other. Subjects were required to engage in operations on the digits in tasks of varying complexity. With increasing task complexity, there was

a linear decrease in erection response to the erotic audiotape. In studies of subjects instructed to fake suppression of response to a preferred erotic stimulus, subjects report using a competing complex cognitive task to distract their attention from the erotic stimulus (eg. Wydra, Marshall, Earls, & Barbaree, 1983).

Some subjects appear to have a greater capacity to fake erectile responses than others. Results from one study suggest that intelligent sex offenders appear less deviant on their sexual arousal assessments than duller offenders (Marshall et al., 1986). Wormith (1986) has suggested that intelligent sex offenders may feel greater prosocial demand characteristics during the assessment, which makes them try harder to fake. Studies with normals that have manipulated demand for performance have failed to find differences in ability to achieve erection (Lange, Wincze, Zwick, Feldman, & Hughes, 1981; Farkas, Sine & Evans, 1979). Most likely, more intelligent subjects are more adept at using distraction tasks (eg. reciting the alphabet backwards), to compete with arousal.

How does one minimize the possibility of faking in the laboratory? One method, using slides with adult non-offenders, began by presenting slides of nude adult females. Then, at different levels of sexual arousal

(25, 50, and 75% of full erection) the experimenters switched the stimulus to one of three stimuli, including: another nude adult female, a child, and a neutral stimulus. Subjects were then instructed to detumesce (lose their erection) as quickly as possible, while attending to the new stimulus. At 50% of full erection, subjects showed the most difficulty detumescing to the nude adult female, compared with the child and neutral stimuli. This method, of assessing ability of subjects to detumesce to various sexual stimuli once aroused, has not been assessed beyond this study (Malcolm, Davidson, & Marshall, 1985).

When doing an assessment with slides, the experimenter must be sure that the subject is attending to the stimulus. Laws & Holmen (1978) have suggested the inclusion of a slide attribute description task which requires visual inspection of the stimulus material. This procedure might pose a problem with subjects who have poor verbal skills, in that the verbal description may compete with the erection response. Wormith (1986) found that subjects' erection responses and subjective ratings tended to be lower when they were instructed to describe slides as presented.

A better technique (to be used in the present study) involves blurring the slide at variable

intervals. The subjects' task is to focus the picture using a remote control focusing device.

Concordance between erection response and
self-reported sexual arousal

It would be expected that sex offenders, particularly those who deny that they committed an offense, would underreport the amount of erection response to a deviant cue in the laboratory. It is possible that whatever demands are operating to either produce or not produce erection responses could also be operating to produce or not produce self-reported arousal. In most court-referred sex offender cases demand characteristics produce low self-reported arousal regardless of penile erection response. Wormith (1986) reviewed data related to construct validity and concluded that "there is no clear agreement on degree of self-reported arousal and physiological response nor on the meaning of the relationship or lack thereof."

Studies that have been conducted on correlations between self-reported and physiological arousal have been conducted with adult sex offenders and non-offenders. In a group of 46 subjects including child molesters, incest offenders, and rapists, Wormith (1980,

cited in Wormith, 1986) reported a correlation of .57 between penile tumescence measures and self-reported arousal with the lowest correlation observed among the child molesters (.47). Marshall & Barbaree's (1987) review of the psychometric properties of erectile measures concluded that "[there is] some relationship between self-reported arousal and physiological arousal. However, this relationship is far from perfect and appears to be less strong for offenders than for normals."

Reliability

How reliable is laboratory measurement? Wormith (1986) presented slide stimuli (child male and female, adult male and female, male-female adult couples, and neutral) to 12 rapists, 12 pedophiles, and 12 non-offenders. In a second session one week later he presented the same subjects with a parallel set of similar slides. Each set contained two examples of each stimulus category, which permitted a test of internal consistency. Excluding the neutral slides, correlations varied from .53 to .92 for within session agreement, that is, agreement between the two stimuli in each class. Test-retest reliability correlations, excluding

the neutral category, varied from a low of .50 for adult females, to a high of .75 for child females, and .83 for child males.

Murphy & Barbaree (1987) summarized several studies of test-retest reliability with rapists, and concluded that reliability tends to be higher when subjects with low levels of arousal are eliminated. This often leads to elimination of a considerable number of subjects, and thus renders the use of the laboratory with rapists somewhat questionable.

Intelligence level of subjects

There is some evidence to suggest that: 1) pedophiles have lower IQ's than other sex offenders, and 2) subjects with lower IQ's exhibit higher erection responses to deviant stimuli in the laboratory. Marshall et al. (1986) studied the relationship between IQ and a pedophile index. The pedophile index (P.I.) is a measure computed by dividing the percent of full erection response to child slide cues by the percent of full erection response to adult slide cues. The higher the P.I., the more deviant the sexual arousal pattern. They found a small negative correlation (-.33) between P.I. and IQ among a group of incest and non-incest

pedophiles, and normals. Pedophiles with IQ's below 80 showed a mean P.I. of 2.65, while pedophiles with IQ's of 80-100, and >100, had P.I.'s of 1.00 and 1.04, respectively.

Murphy and Barbaree (1987) reported results of an unpublished study on age preference profiles, IQ, and socioeconomic status (SES). Offenders who showed child and child-adult profiles (indicating high arousal to children) had lower IQ's and lower SES's than groups not responding to children. The authors did not report the ethnicity of their subjects in this study. Ethnicity between groups would have to be held constant to make any conclusions regarding IQ.

The results of these studies warrant further investigation, but at this time, the number of studies is too small to draw a firm conclusion. Even if it were demonstrated that low IQ correlated strongly with high deviant arousal, it says nothing about causation. Are low-IQ subjects less adept at faking, or do they really have higher deviant arousal? These questions require further research with large groups of low-IQ subjects.

Laboratory treatment

As in the previous section, the discussion of

laboratory treatment will be restricted to work with adult sex offenders. There are no controlled studies available on laboratory treatment with adolescent sex offenders. One uncontrolled study with adolescent sex offenders will be discussed.

Early studies

The first reports of laboratory treatment for sex offenders involved some form of aversion therapy, in which electrical or olfactory stimuli were paired with deviant stimuli. Marks & Gelder (1967), in the first-ever demonstration of the multiple-baseline design, used electrical aversion to successfully reduce erection responses to deviant stimuli in a 21 year old male transvestite. Aversion consisted of the pairing of painful faradic shocks with target stimuli (panties, slips, skirts) both in vivo and imaginally.

In covert aversion, aversive imagery is used in place of aversive exteroceptive stimuli (Cautela, 1967). One variant of this, aversive behavior rehearsal (Wickramaskera, 1976), involves having the subject alternately describe aloud his deviant behavior, followed by a description of the various aversive consequences (jail, public humiliation) of his actions.

Although there were positive findings with aversive therapy, it was by no means uniformly effective. The most careful applications of aversive therapy occasionally failed to produce changes in some subjects (Marshall, 1979).

One of the main problems with most of the aversive therapy research was that it failed to address deviant sexual fantasy. For most sex offenders (particularly child molesters), deviant sexual behavior occurs at a low frequency relative to deviant sexual fantasy. A sex offender may engage in deviant fantasy many times per day, while engaging in the actual behavior perhaps once per month. One exception here would be exhibitionism, where there is often a high rate of deviant behavior. In cases like these, an attempt can be made to directly address the deviant behavior by the use of an operant procedure that would reinforce appropriate behavior. However, in most cases of "hands-on" deviant sexual behavior such as child molestation and rape, deviant sexual fantasy is a frequent precursor to deviant sexual behavior (Abel and Blanchard, 1974). While deviant sexual behavior cannot be observed in the laboratory, the verbal descriptions of deviant fantasy can be observed. Elimination of deviant fantasy should lead to elimination of deviant sexual behavior. In one

early study of aversive therapy (Abel, Levis, & Clancy, 1970) aversive stimulation was paired with audiotaped descriptions of deviant sexual fantasy.

Modifying deviant fantasy

If associating deviant fantasies with genital arousal is the practice that maintains inappropriate sexual behavior, then eliminating this practice should be the most effective route to eliminating the occurrence of sexually offensive acts.

The continued repetition of certain behavioral acts appears to lead to a reduction in the future probability of these behaviors (Yates, 1958). Marshall (1979) pointed out that the same may be true of sexual behavior. A considerable number of studies have shown that the penile erection response decreases over time with repeated presentation of the eliciting stimulus (e.g., Masters & Johnson, 1970; O'Donohue & Geer, 1985). This phenomenon has been called habituation (Bermant and Davidson, 1974), satiation, (Marshall, 1979), and classical extinction (Alford, Morin, Atkins, and Schoen, 1987).

Habituation has been regarded as a form of learning --a learning not to respond. Habituation is thought to

be the first learning process to emerge in human infants and is used to study the development of attention, perception, and memory in the newborn (Kandel, 1981). Kandel demonstrated habituation in aplysia, a marine snail.

The term habituation seems to be more often used when describing the characteristics of unconditioned responses and the effects of repeated presentation of the unconditioned stimulus. Examples of this are studies on habituation of sexual responding in rams (Bermant and Davidson, 1974), where the female ewe was the UCS, and sexual mounting was the UCR. The remainder of the discussion will focus on interpretation in terms of extinction and satiation.

The term classical extinction is most often used when describing the characteristics of conditioned responses and the effects of repeated presentation of the conditioned stimulus (in the absence of the unconditioned stimulus). In Rachman's (1966) study of the classical conditioning of a boot fetish in normal volunteers, the acquired fetish was extinguished in this fashion. The CS (slides of boots) were repeatedly presented and the CR (penile erection) decreased over time.

The term satiation refers to a decrease in rate of behavior resulting from the loss of effectiveness of the reinforcer that is maintaining that behavior (Reese, 1978; p. 144). The term is most often used to describe the characteristics of operant behavior maintained by primary reinforcers (such as food). The loss of effectiveness of food as a reinforcer is a function of its continued presentation. In the case of food, an observable (in principle) event, the filling up of the stomach, and the corresponding decrease in stomach contractions (for example), can explain the decrease in eating behavior. It can also explain why satiation in this context is only temporary; the stomach will eventually empty and eating will resume.

The first application of a "repetitive" technique to reduce deviant sexual fantasy was performed by Marshall (1979) who called his procedure "satiation therapy." The client was instructed to seat himself in a darkened room, remove his trousers, and commence masturbating, while at the same time verbalizing aloud every variation he could think of on the fantasies associated with the target category (e.g., young girls). The client was told to masturbate continuously throughout the one hour session, so that even if he ejaculated he was to continue, stopping only to wipe

himself clean if he found it necessary. Using a multiple-baseline across behaviors design (the clients had multiple deviations) Marshall demonstrated the controlling effects of satiation therapy in two single case analyses.

Aside from the repetitive nature of the procedure, other possibly effective components included: 1) verbalization of fantasy, 2) associating this activity with masturbation, and 3) continuing to masturbate and verbalize deviant fantasy following orgasm.

In fact, two principles, satiation and extinction, may have been operating here. By ejaculating, the subject was sexually satiated, because, at least for a few minutes, he was physically unable to become aroused. Then, by verbalizing deviant fantasy with no reinforcement (penile erection), the erotic value of the verbalization was extinguished.

Becker, Kaplan, and Kavoussi (1987) in an uncontrolled study, modified Marshall's procedure for use with adolescents. A change in the procedure was necessary, because: 1) few parents consented to the masturbation procedure, and 2) most adolescent sex offenders denied deviant fantasy, and therefore could not or would not generate deviant fantasy material for the satiation session. "Satiation therapy" was performed

with the following modifications: 1) the subjects did not masturbate, 2) the therapist gave the subject a deviant phrase (e.g., "I'm lying on top of this little boy and he likes it.") to repeat over and over for 20 minutes, and 3) a slide of a deviant target was put on a screen for the subject to look at while he was repeating the phrase. The procedure was called "verbal satiation."

Erection responses to deviant and non-deviant audiotaped cues were assessed before treatment, and were assessed again following satiation plus a group treatment "package" that included covert sensitization, sex education, anger control, social skills training, and cognitive restructuring. It was found that erection responses to deviant cues were significantly decreased for homosexual pedophiles ($n=11$), but not for heterosexual pedophiles ($n=9$). Out of the 20 subjects, only one (a heterosexual pedophile) maintained high deviant arousal. This one subject was enough to account for the non-significance of the heterosexual pedophile results. Six of the nine heterosexual pedophile subjects showed marked decreases in deviant arousal, while two showed no appreciable change from a moderately deviant arousal pattern.

It was not clear in this study what caused the

decrease in erection response to deviant cues.

Satiation treatment was not separated from the other treatment components, so no conclusion could be drawn regarding the effects of "verbal satiation" as a sole procedure.

Another problem was the use of audiotapes for the assessment procedure. As an assessment instrument, audiotapes are not too good at describing different age targets. The physical characteristics of an eight year old can certainly be described (no pubic hair, small body), but the erotic part of the audiotape (description of sexual intercourse) may be arousing apart from the description of the target. When varying tapes on the dimension of force used on the victim, this is not a problem. It is easy to describe different levels of coercion (eg. verbal, physical, sadistic), and to make "degree of force" the dominant theme in the audiotape.

For an age preference assessment with child molesters, slides enable the experimenter to control certain characteristics of the stimulus (e.g., level of physical maturity) better than audiotapes can. Since the treatment targets young girls or boys, the assessment is most relevant if it targets the age dimension.

Furthermore, this was a quasi-experimental A-B

design (Hersen & Barlow, 1976) that did not allow conclusions to be drawn regarding the controlling effects of treatment.

Putting problems of experimental design aside, it is still not clear what components of the satiation procedure produced the reductions in response to deviant stimuli.

The masturbatory component of treatment was removed, so there was no satiation, in terms of tissue depletion (through ejaculation). The effects of repetition of the deviant phrase could have been interpreted in terms of extinction, because presumed conditioned stimuli (the deviant phrase and the slide of the deviant target) were being repeatedly presented with no corresponding erection response.

Any effects regarding the deviant phrase can be interpreted in terms of classical extinction, because, presumably, the CS (phrase) is repeatedly presented and the CR (erection) decreases over time. But there is a problem with the erection response. The phrase was chosen by the experimenter for a subject who denied deviant fantasy. The phrase was never arousing. One cannot extinguish a CS-US bond (deviant phrase-unconditioned erection eliciting stimulus) that is not there to begin with.

What about the deviant slide the subject looked at while repeating the deviant phrase? There was no erection response to the slide. There are two possible reasons why. The first reason is that the slides were not arousing to the subjects in and of themselves. O'Donohue and Geer (1985) in a study with normal adults that demonstrated decreasing erectile responses to slides with continued presentation, had a similar problem. The initial erectile response to the slides averaged only 4 mm. This is less than 15% of a full erection, which is less than the minimum of 20% of full erection established by Murphy and Barbaree (1987) as being of any significance. However, the four studies mentioned earlier on age preference profiles all demonstrated acceptable levels of arousal using slides with nonoffender controls. The second reason for the lack of responsiveness is that the slides were arousing, but the deviant phrase, with no arousing value, prevented any erection response from occurring. If this is the case, could such a task be used to teach a sex offender control over deviant sexual arousal?

Reduction of sexual arousal by competing stimuli
(distraction)

Introduction of asexual stimuli into an erotic situation often reduces sexual arousal. Masters and Johnson (1966) noted such a phenomenon when they said that "penile erection may be impaired easily by the introduction of asexual stimuli, even though sexual stimulation is continued simultaneously." (p.183).

Geer and Fuhr (1976), in the study mentioned in the "faking" section, found that increasingly complex mathematical verbal tasks effectively competed with the erection response. The erotic stimuli in this study were audiotapes. They interpreted the findings as evidence that, since complex tasks required more cognitive processing, subjects were less able to process the erotic material. The cognitive processing may have included the subjects' talking to themselves.

Wyczoikowski (1913) in an early "physiology of thinking" study, found that a speaker's verbalizations elicit lip movements in the listener that shadow those of the speaker. Movements were measured with a device that recorded tongue movements on a revolving cylinder. These tongue movements may be essential to the subjects' processing the stimulus. If this is the case, then the

complex task in the Geer and Fuhr study might have prevented "shadowing" of the erotic audiotape from occurring, thus preventing an erection response.

The findings of Geer and Fuhr's (1976) study were considered useful in the study of impotence. Impotent men often report that they are unable to get aroused because they are thinking about something else (Masters and Johnson, 1970).

If subjects can be so easily distracted from erotic material, then distraction may prove useful as a tool to enable the potential sex offender to control his deviant arousal. Treated sex offenders, during follow-up interviews, often report that they engage in some form of distracting activity when confronted with situations in which they feel they might reoffend.

Outline of the present study

The present study examined the effect of repeated presentation of a deviant target (a slide of a pre-pubescent female) on erection response in a group of adolescent child molesters. It was expected that this repetition would extinguish erection responses to the deviant target. A major component of this study was the inclusion of a verbal task designed to compete with

deviant sexual arousal ("distraction"). Erection response to the deviant target during the distraction task was compared to erection response to the deviant target during a verbal task designed to maintain any erection response to the deviant target. It was expected that the distraction task would serve to decrease erection responding in the presence of the deviant target. An across age generalization gradient slide assessment was used before and after treatment. This assessment provided an "age preference profile," as described by Barbaree and Marshall (1988). It was expected that treatment would reduce erectile responding to the youngest two age groups in the generalization gradient assessment, while leaving responding to the other age groups intact.

What should the intervention in the present study be called? There are two components. The main component is the distraction task, which requires the subject to verbalize aloud a sexually neutral audiotape as he hears it. This verbalization is expected to compete with any arousal elicited by the deviant slide, which is the second component. The slide is repeatedly presented.

Repetition of the slide alone (given that the slide is a CS) can be properly interpreted as a classical

extinction paradigm. The distracting task changes the stimulus complex, which becomes a (presumed) CS combined with an operant (verbalization of audiotape). Erectile responding to the slides is a respondent (classical) behavior. In cases where erectile responding is brought under instructional (not operant) control (as in Laws and Rubin, 1969), some mediator (e.g., covert fantasy) is used by the subject, and this mediator becomes the CS for the erection response.

Since the intervention involves a CS (classical) and an operant (verbal task) as the stimulus complex, a proper name for the intervention might be classical-operant extinction, or "co-extinction," meaning that it is basically a classical extinction paradigm, with an operant as part of the stimulus complex.

METHOD

Subjects

Subjects were 21 boys aged 13-18 who had been charged with or convicted of or had admitted to committing a "hands-on" sexual offense against a pre-pubescent girl. Subjects charged but not convicted were seen at the clinic pre-trial. Typically, following

the treatment program, they were placed on probation by the family court. "Hands-on" offenses included oral and anal sodomy, vaginal penetration, and anal or vaginal digital penetration. The determination of pre-pubescence of the victim was made on the basis of the offender's report, the police report, the victim's age, and the parent of the offender's report.

All subjects were seen at the Sexual Behavior Clinic, an outpatient treatment program at the New York State Psychiatric Institute, under the direction of Judith V. Becker. Subjects were non-psychotic (in the interviewer's judgement) and had an IQ over 70 (as assessed by the Ammons and Ammons Quick Test).

Setting

The study took place in the laboratory of the Sexual Behavior Clinic. The laboratory consists of a 100 square foot control room for the laboratory technician that contains a polygraph for recording penile erection, a computer for data analysis, a desk, a carousel projector for showing slides, and an intercom for communicating with the subject. The subject sat in a 64 square foot, sound-attenuated cubicle adjacent to the control room. The cubicle contained a chair, a

pair of headphones, a mercury-in-rubber strain gauge plugged into an interface box, an intercom, and a screen for viewing slides. There was no visual contact between subject and experimenter.

Apparatus

Penile circumference changes were measured using a mercury-in-rubber strain gauge (D.M. Davis, Inc.). The gauge consists of a silicon rubber tube filled with mercury. It is placed midway down the penile shaft. The gauge is connected to a Grass model 7D amplifier. A small electric current is passed through the gauge. Should the subject achieve an erection, the gauge stretches, causing the diameter of the mercury column to shorten. Shortening the diameter increases the electrical resistance of the gauge. This change in electrical resistance is amplified and read out on moving chart paper. The gauge is calibrated so that 1 mm of pen deflection on the paper is equivalent to 1 mm of actual change in penile circumference.

Stimuli

The following section contains a description of the

stimuli used for this study. Assessment stimuli were used to determine whether a deviant arousal pattern existed, and therefore whether subjects were eligible for the study. Treatment stimuli were used to decrease deviant sexual arousal through their repeated presentation.

Assessment stimuli consisted of 18 color slides of nude females (all subjects reported primary heterosexual interest), broken down into 6 different age categories. The six categories corresponded to Tanner's 5 categories of biological development, with one additional adult category. All the slides depicted a single nude female, sitting or standing in a semi-erotic position (e.g., legs slightly spread). Table 2 describes the six age categories, along with a description of each Tanner category. All slides were acquired from Farrall Instruments, Inc. Tanner categories were assigned by Farrall Instruments, Inc. (Farrall, personal communication).

Treatment visual stimuli consisted of three color slides of nude pre-pubescent females, corresponding to Tanner category 1. These slides were similar to but not the same as the assessment stimuli.

Treatment audiotape stimuli consisted of six, six-minute long audiotaped descriptions of an interaction

Table 2

Tanner Categories and Ages of Models in Slide Assessment

Tanner Category	Age of Model	Tanner Category Description
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I	4-5	The breasts are pre-adolescent. There is elevation of the papilla There is no pubic hair.
II	9-10	Breast bud stage. A small mound is formed by the elevation of the breast and papilla. The areolar diameter enlarges. There is sparse growth of long, slightly pigmented, downy hair, straight or only slightly curled, primarily along the labia.
III	12	There is further enlargement of breast and areola with no separation of their contours. The pubic hair is considerably, darker, coarser, and more curled. The hair spreads sparsely over the junction of the pubes.

Table 2 (continued)

Tanner Category	Age of Model	Tanner Category Description
IV	14-15	There is pigmentation of the areola and papilla to form a secondary mound above the level of the breast. The pubic hair, now adult in type, covers a smaller area than in the adult.
V	21-24	The breasts resemble those of a mature female as the areola has recessed to the general contour of the breast. The pubic hair is adult in quantity and type.
Adult	27-32	This category, not a Tanner developmental category, is added to present older looking females as a comparison to those who have recently matured.

Reference: Tanner, J.M. (1962). Growth at Adolescence, 2nd Edition. Oxford: Blackwell Scientific Publications.

between a male adolescent and a young girl. Three of the audiotapes described a coercive sexual interaction, and the other three described a normal social interaction. All tapes were spoken in the first person, by an adult male voice, at a low rate (1.25 words per second). Previous research (Heiman, 1977) found no difference between male and female voices on audiotapes in their effectiveness in eliciting erectile responding. Appendix A contains transcripts of the six audiotapes. The transcripts include slashes that divide the tapes into twelve, thirty-second intervals.

Procedure

Assessment

Following a clinical interview to determine the nature of the sexual offense and a sexual history, subjects entered the laboratory for the slide assessment. Each subject was told the following:

"This is our laboratory. We're going to find out what sort of things you're sexually interested in. You will be sitting in this [sound attenuated] room. The reason the walls are so thick is so that it will be

quiet while you are in here. This is a strain gauge [technician shows subject mercury-in-rubber strain gauge]. Let me show you how it works [technician shows subject polygraph machine]. Notice how the chart paper is moving slowly [25 mm/minute]. Now I'm going to stretch the gauge with my fingers. See how the pen on the paper moves up. You will be putting this gauge around your penis, in private. If you should get an erection, you're penis will get bigger, and the gauge will stretch. I will be able to tell if you have an erection by looking at the chart paper. Here's what you are going to do [technician leads subject into the sound-attenuated room]. You will be sitting in this chair. After I leave the room, you'll take your pants and your underwear halfway off, just as if you were going to the bathroom. Then you'll take the gauge, and spread it out on the fingers of one hand, like this [technician shows subject how to spread the gauge]. Then you'll place it halfway down the penis, like this [technician demonstrates on his own finger twice]. Don't push the gauge on, just place it on. You will be doing all of this in private. I will not be watching you. [Technician then shows subject remote control focusing device for the carousel projector].

"This box has a little switch on it that you can

use to focus the picture. Once in a while I will make the picture blurry. You will use the box to focus the picture [technician shows subject how to focus picture]. I will be doing this to make sure that you look at all the pictures. I'm going to leave the room now. As soon as I leave, you'll put the gauge on. Your door will be closed, but it will not be locked. [After subject has placed the gauge on and there is a stable reading on the polygraph, the technician continues the instructions]. You will be looking at pictures on the screen. The pictures will be of girls of different ages, with no clothes on. You will see 18 pictures, each for a couple of minutes. Just look at each picture, and imagine yourself being with the girl in the picture. If you should get an erection while looking at the picture, just let it happen."

The subject waited for about three minutes before the first stimulus presentation. This adaptation period was necessary to establish a stable baseline and to enable the subject to relax a little bit prior to the beginning of the run.

Following the adaptation period, the first slide was presented, for two minutes. At variable 30 second intervals, the slide was blurred, and the subject had

five seconds in which to focus it. If the subject did not focus the slide within five seconds, an additional minute was added to the stimulus presentation, with two additional blurring trials. Randomization for the blurring trials was carried out using a random number table to determine the latency to blurring within each of four 30 second intervals of the 120 second trial.

Following the first two minute stimulus presentation, any erection response by the subject was allowed to return to baseline (defined as less than 3 mm of increase in penile circumference). There was then a 30 second interstimulus interval (ISI), in which the circumferential increase had to remain below 3 mm. If at any point during the ISI there was a circumferential increase greater than 3 mm, another 30 seconds of less than 3 mm responding had to elapse. Following the ISI, the next slide was shown.

There were two sets of identical slide stimuli, A and B, each in a different fixed randomized order, with the restriction that no two consecutive slides could be in the same Tanner category. Half the subjects received order A at pre-treatment assessment, and order B at post-treatment assessment. The other half received the reverse order.

Following the last stimulus presentation, all subjects were instructed to try and achieve a full erection, by masturbating with the gauge still on the penis. The resulting full erection measurement was used to compute percentage of full erection response for each of the slides. Any subject who did not achieve a full erection (by self-report) was excluded from the study. Before and after each laboratory run the strain gauge was sterilized in Cidex 7 solution.

Subjects had to exhibit at least 20% of a full erection response to at least one of the three Tanner category 1 slides to be eligible for the study. Category 2 (9-10 years old) is also deviant, but, legally, only deviant for those boys 15 and older. Since category 1 (4-5 years old) is unquestionably deviant, this category was chosen.

Once eligibility was determined, subjects were assigned to one of three groups: 1) extinction, 2) co-extinction and 3) deviant. Subjects were matched on age within approximately six months. Within age, group assignment was random. There were a total of 7 subjects in each group.

Treatment

One week following assessment, each subject returned to the laboratory for treatment. There were a total of three treatment sessions, once per week. One week following the last treatment session, subjects again underwent assessment. The following outlines each treatment procedure.

Group 1: Extinction

Subjects entered the laboratory, and were again briefly instructed on how to place the strain gauge on the penis. Following a three minute adaptation period, a slide of a nude female from Tanner category 1 was presented, for two minutes. As in the assessment, the same procedure was used to insure that the subject was looking at the slide (blurring trials). Following the first stimulus presentation, any erection response was allowed to return to baseline. Baseline was defined as less than 10% of a full erection (the full erection measurement was taken during the assessment).

Following baseline, there was a 30-second ISI in which the erection response could not exceed 10% of a full erection. If the erection response did exceed 10%,

30 seconds had to elapse before the ISI was completed. Following the ISI, the same stimulus was again presented. A treatment session consisted of twelve stimulus presentations. In each of the three treatment sessions, there was a different slide. All slides were from Tanner category 1, and were similar, but not the same, as the assessment slides (there were different models in the treatment slides). Each subject saw the slides in a different order across treatment sessions, using a Latin square design to order the slides.

The next section describes the other two treatment groups. The only difference in procedure is what happened during the last thirty seconds of each two minute stimulus presentation. Aside from that, everything else was identical.

Group 2: Co-extinction (classical-operant extinction)

For this group, in addition to placement of the strain gauge, each subject was instructed to put on a pair of headphones. Following the adaptation period, the first slide was presented for two minutes. At the ninety second mark, a tape was played in the subject's ear for thirty seconds. The tape was an excerpt of a

six-minute description of a neutral social interaction that included an adolescent boy and a pre-pubescent girl. When the subject heard the tape, his task was to repeat it aloud exactly as he heard it. The tape was recorded at a fairly slow pace (1.25 words per second) so it was easy for the subjects to "shadow" the tape. The technician listened to these verbalizations over an intercom to insure compliance. Throughout the two minute stimulus presentation (including the audiotape) blurring trials at variable 30-second intervals took place. After the two-minute stimulus presentation, the slide was shut off, and any erection response was allowed to return to within 10% of a full erection. Then, following a thirty-second ISI, the same slide was again presented. For each of the twelve trials, the subject heard the next thirty second excerpt of the tape. Each excerpt was therefore part of a continuing story. There was a different tape for each of the three treatment sessions. Order of tape presentation across sessions was randomized using a Latin square design.

Group 3: Deviant

The procedure for the subjects in group 3 was similar to that of group 2, with the only difference

being the nature of the tape that the subject had to shadow. For group 3, the tape was a description of a verbally coercive sexual interaction between an adolescent boy and a pre-pubescent girl.

Instructions to treatment subjects

All subjects had to be given a rationale for participating (consent forms for participating required brief mention of a "boredom" procedure) and yet instructions had to be given that did not produce demand characteristics to perform well (decrease deviant arousal).

One alternative is to not give a rationale at all, but, as Tizard (1966) pointed out, in her studies on sleep onset, if no rationale is given, subjects will think of one for themselves. This brings unwanted variability.

Taking this into consideration, subjects were told, for all three groups, that they would be seeing the same picture over and over again, so that they would get bored looking at the picture. Groups 2 and 3 were told that they would shadow tapes so that they "wouldn't think about the picture too much."

Treatment trial summary

Procedures for randomizing slide presentation were the same for all three groups (Latin square). The actual treatment slides were the same for all three groups.

For the three groups, each trial can be summarized with the following diagram:

	Group 1	Group 2	Group 3
1) Adaptation:	Same for all		
3 minutes			
2) View deviant	Same for all		
slide: 90 sec.			
3) Next 30 sec.	Continue	View slide &	View slide
	to view	shadow neutral	& shadow
	slide.	audiotape.	deviant
			audiotape.
4) ISI: 30 sec.	Same for all		
of <10% of			
full erection.			
5) Repeat steps 2), 3), and 4) for 12 trials.			

Design

The design for this study is a mixed ANOVA design, with the generalization gradient assessment as the within subjects (repeated measures) variable, and the shadowing task (30 second interval) during the treatment session as the between subjects variable.

HYPOTHESES

Descriptions of hypotheses for all components of the study will be outlined as follows. First, a general principle will be stated that is essentially a definition of a behavioral term. Second, a proposition will be stated that applies this behavioral term to the study of erectile responding. Third, a hypothesis will be stated that describes the effects of the components of the study as predicted by the general principle.

General principle 1: Classical Extinction

In classical extinction, the conditioned response can be eliminated by repeated presentation of the conditioned stimulus without the stimulus that originally elicited the response.

Proposition 1:

Erectile responses to deviant visual cues can be eliminated by repeated presentation of a deviant visual cue without the stimulus that originally elicited the response. The unconditioned stimulus is presumed to lie somewhere in the past.

Hypothesis 1: For all subjects in all groups, erectile response to a deviant visual slide will significantly decrease over the 12 trials in each treatment session.

General principle 2: Counterconditioning

A process by which a conditioned response is replaced by an incompatible response and, as a result, is no longer elicited by the conditioned stimulus. If two behaviors compete and cannot occur together, strengthening a desirable one will weaken the other.

Proposition 2:

Deviant sexual arousal can be decreased by requiring the subject to engage in a behavior that is incompatible with the penile erection response, in the presence of deviant sexual stimuli that are arousing to the subject.

Hypothesis 2:

Subjects in group 2 will experience detumescence (decrease in erection response) while shadowing a

neutral audiotape during the final 30 seconds of each 2 minute slide presentation. This assumes some erection response during the first 90 seconds of each stimulus presentation. If no erection response occurs during the first 90 seconds of a given presentation, no hypothesis can be drawn regarding detumescence for these trials.

General principle 3: Erectile responding to erotic stimuli

When presented with an erotic stimulus, most post-pubescent males (and some pre-pubescent males) will exhibit penile erection in a laboratory setting.

Proposition 3:

When required to "shadow" (talk along with) an erotic audiotape that is similar to one's sexual interests, an erection response will occur.

Hypothesis 3: Subjects in group 3 will experience penile erection while shadowing a deviant erotic audiotape during the final 30 seconds of each 2 minute visual stimulus presentation. This assumes that the subject has not already achieved a full erection during the first 90 seconds of the visual stimulus presentation. If a full erection is achieved during the first 90 seconds, no hypothesis can be drawn regarding erection response for these trials.

General principle 4: Stimulus generalization

In the process of classical conditioning, the conditioned response comes to be evoked by a broad band of stimuli around the specific conditioned stimulus. The conditioned response will occur on a test to a neighboring stimulus to an extent dependent upon the similarity of the test stimulus to the training stimulus. The dimension along which the stimuli are similar is defined by the generalization gradient dimension.

General principle 4A: Generalization of "non-responding following extinction

In the process of classical extinction, there will be generalized "inhibition" or non-responding by a broad band of stimuli centered around the extinguished stimulus.

Proposition 4:

By extinguishing erectile responding to a deviant target (through repeated presentation of that target), erection responses to stimuli similar to the target will be attenuated.

Hypothesis 4: Erectile responding on post-treatment generalization gradient assessment

Group 1: a) Erectile responding to Tanner category 1 will be significantly lower than at pre-assessment.

This would demonstrate generalization from treatment stimuli to assessment stimuli.

b) Erectile responding to Tanner category 2 will be significantly lower than at pre-assessment. Although a greater decrease will be observed in category 1, treatment effects are expected to generalize to category 2. This would demonstrate generalization of non-responding from category 1 (pre-pubescent girls) to category 2 (early signs of pubescence).

Group 2: a) Same hypothesis as for group 1 (reduction in response to category 1), only this intervention, "co-extinction," with the distraction task (as described in hypothesis 2), will show a greater decrease than group 1.

b) Erectile responding to Tanner category 2 will be lower than at pre-assessment. The decrease is expected to be greater than for group 1.

Group 3: This group is a control group, because subjects are expected to exhibit erectile responding in the presence of the deviant target (see hypothesis 3). Therefore, in comparison to groups 1 and 2, no significant change in erectile responses are expected here.

All groups: Erectile responding to categories 3, 4, 5 and Adult (see Table 2, Tanner categories) are expected

to remain unchanged. The intervention did not target these categories, and they share too few properties with the treatment stimuli (in terms of sexual maturity) to change through the principle of "generalization of non-responding." The notion of similarity discussed under the definition for stimulus generalization applies here to development of the pubic area and the breasts. Categories 1 and 2 clearly have no pubic hair and not yet developed breasts. Category 3, an early pubescent stage, has pubic hair that is plainly visible and clearly developing breasts.

One possibility not being discussed here is that of the "peak shift" phenomenon. Terrace (1964) demonstrated that if pigeons were taught to discriminate between two different wavelengths (colors of light), and the procedure resulted in a large amount of responding to S- (errors), a shift away from the S- was obtained on a postdiscrimination generalization gradient.

To draw a parallel with the present study, there are expected to be a considerable number of "errors" (response to category 1 slides) before the response is eliminated or at least attenuated. A "peak shift" would result in greater responding at post-assessment to the oldest category, "Adult," the age farthest away from the

target. The main problem with drawing a parallel between this study and Terrace's is that Terrace reinforced responses to a specific wavelength. In the current study, responses to adolescent and adult stimuli are not reinforced. It is assumed that, in accordance with the theory of McGuire et al. (1965), adolescent sex offenders would not have developed a specific deviant pattern of responding, meaning that, if deviant arousal is present, non-deviant arousal would be present also. Therefore, no hypothesis regarding a "peak shift" will be made in the current study.

RESULTS

Subjects who were eliminated

A total of 34 adolescent heterosexual child molesters were run on the generalization gradient (hereafter GG) assessment. Thirteen subjects (38.2%) were eliminated from the study for failure to achieve at least 20% of a full erection to any Tanner category 1 slide.

Blur trial data

For the pre-treatment GG assessment, there were a total of 1512 instances in which the stimulus was blurred by the experimenter. The subject had a maximum of 5 seconds to focus the stimulus. There were a total of 32 instances (2.1%) in which subjects failed to respond to the blurring within 5 seconds. In no session did a subject fail to respond twice during one stimulus presentation.

For the post-treatment GG assessment, out of 1512 opportunities, there were 24 instances (1.6%) where subjects failed to respond within 5 seconds. In one session, a subject failed to respond twice during one stimulus presentation. It was a Tanner category 3 stimulus.

For the treatment sessions, for all subjects for all groups, there were 3024 blur trials. There were 139 instances (4.6%) where subjects failed to respond within 5 seconds. In one session, a subject failed to respond twice during one stimulus presentation.

Subject characteristics

Each subject received a clinical interview at

intake. This allowed determination of subject characteristics.

Table 3 outlines characteristics of each subject. The table includes age at intake, race, living situation (who they lived with at intake), number of non-sexual arrests, whether they admitted or denied taking part in the sex crime they were accused of, history of being physically abused, history of being sexually abused, admission or denial of deviant fantasy, the type of pornography they use most often (if any), and the age and relationship of their victim. "Partial" admit meant that the subject admitted to being involved with the deviant target, but denied the use of any force or coercion.

Subjects were matched on age within six months. There were no significant differences between groups on age at intake.

In the introduction section, Table 1 was presented. This table suggested that there are many events in the adolescent's life that could lead him to commit a sex offense. Table 4 presents data on experiences in the home and neighborhood, living situation, and use of pornography for the current sample. Appendix B contains excerpts from the structured clinical interview that pertains to the data in Table 4.

Table 3

Characteristics of Subjects in Each Group

<u>Subject Number</u>	<u>Age</u>	<u>Race</u>	<u>Living Situation</u>	<u>Non-sex Arrests</u>	<u>Admit/ Deny</u>
Extinction Group					
1	14.0	Hispanic	Foster pars.	0	Partial
2	18.4	Black	Mother	0	Partial
3	15.8	Hispanic	Group Home	0	Deny
4	16.5	Black	Both pars.	0	Deny
5	15.1	Black	Both pars.	0	Partial
6	18.1	Black	Mother	2	Partial
7	16.4	Hispanic	Father	2	Deny
Co-extinction Group					
1	14.3	Black	Mother	0	Partial
2	18.5	Black	Psych. Inpat.	15	Admit
3	15.5	Black	Both pars.	0	Partial
4	16.1	Black	Aunt	0	Partial
5	14.9	Black	Group Home	0	Partial
6	17.9	Black	Grandmother	0	Admit
7	16.0	White	Group Home	0	Admit
Deviant Group					
1	13.8	Black	Sister	0	Partial
2	17.9	Hispanic	Group Home	0	Deny
3	16.1	Black	Father	0	Partial
4	16.0	Black	Mother	2	Partial
5	15.3	Hispanic	Mother	0	Partial
6	17.6	Hispanic	Mother	0	Partial
7	16.3	Black	Both pars.	0	Deny

Table 3 (continued)

Extinction Group					
<u>Subject Number</u>	<u>Physical Abuse</u>	<u>Sexual Abuse</u>	<u>Admit-Deny Fantasy</u>	<u>Porn used most often</u>	<u>Victim Age and Relation</u>
1	Yes	No	Deny	Magazines	8, sister
2	Yes	No	Deny	Cable TV	8, no rel.
3	Yes	No	Deny	Magazines	9, sister
4	No	No	Deny	Books	3, no rel.
5	Yes	No	Deny	Books	10, neice
6	Yes	No	Deny	Magazines	6, cousin
7	No	No	Deny	X-Videos	4, no rel.
Co-extinction Group					
1	Yes	No	Deny	Magazines	6, cousin
2	Yes	Yes	Admit	X-Videos	6, sister
3	No	Yes	Deny	Magazines	10, no rel
4	Yes	No	Deny	X-Videos	6, sister
5	Yes	Yes	Deny	X-Videos	6, no rel.
6	Yes	No	Deny	X-Videos	3, No rel.
7	No	No	Deny	None	6, no rel.
Deviant Group					
1	No	Yes	Deny	X-Videos	6, sister
2	Yes	Yes	Deny	X-Videos	5, no rel.
3	Yes	Yes	Deny	None	6, neice
4	Yes	Yes	Deny	Magazines	3, cousin
5	Yes	No	Deny	X-Videos	10, sister
6	No	No	Deny	Cable TV	10, sister
7	Yes	No	Deny	X-Videos	4, no rel.

Table 4

Life Experiences That Could Lead to Sexual Assault

Life experience	Percent responding "yes"
Home environment	
History of being physically abused	71.4%
History of being sexually abused	33.3
Type of pornography most often used	
Adult Videos	42.9
Magazines	28.6
Books	9.5
Cable TV	9.5
None	9.5

Table 4 (continued)

Observation of:	Percent responding "yes"
Physical violence	
in home	42.9%
Sexual violence	
in home	33.3
Physical violence	
in neighborhood	95.2
Living situation at intake	
With mother only	28.6
Both parents	23.8
Group Home	14.3
Father only	9.5
Foster parents	4.8
Psychiatric inpatient	4.8
Other relative	14.3

Homogeneity of groups at pre-treatment

A one-way ANOVA was performed on the pre-treatment erection responses for each Tanner category on the GG assessment, to see if there were any differences between the three groups. The ANOVA revealed no significant differences between groups.

Effects of repeated presentation of deviant target: The first 90 seconds of each treatment trial

A 12 (trials) by 3 (groups) MANOVA was performed to determine whether or not there was, as hypothesized, a significant decrease in erection response over time. The analysis revealed no significant trend across trials, for any group, and no significant differences between groups in magnitude of erection response, averaged over all trials.

Effects of the distraction task: Final 30 seconds of each treatment trial

In this analysis, the erection responses to the final 30 seconds of each trial were compared with a MANOVA analysis to determine whether or not differences

existed between groups.

Results indicated a main effect between groups, $F(2, 18) = 39.61$, $p < .001$, and across trials, $F(22, 198) = 2.39$, $p < .001$. In addition, there was a significant group by trials interaction, Hotellings $t(22) = 3.49$, $p < .01$.

It was hypothesized that the deviant group would exhibit higher erection responses than the extinction group, and the extinction group would in turn have higher erection responses than the co-extinction group. With this in mind, planned contrasts between groups revealed that: a) the deviant group had higher erection responses than the extinction group ($p < .001$), and b) the extinction group had higher erection responses than the co-extinction group ($p < .05$). The mean percent of full erection response across all trials was 13.4, 1.4, and -2.1 for the deviant, extinction, and co-extinction groups, respectively.

Visual inspection of the data revealed that erection responses in the deviant group increased across trials. Post-hoc tests of within session effects were carried out for the deviant group. Erection responses increased over time, Hotellings $t(11) = 12.79$, $p < .01$. Figure 1 shows the increase over each successive final 30 second period of each trial, averaged across subjects

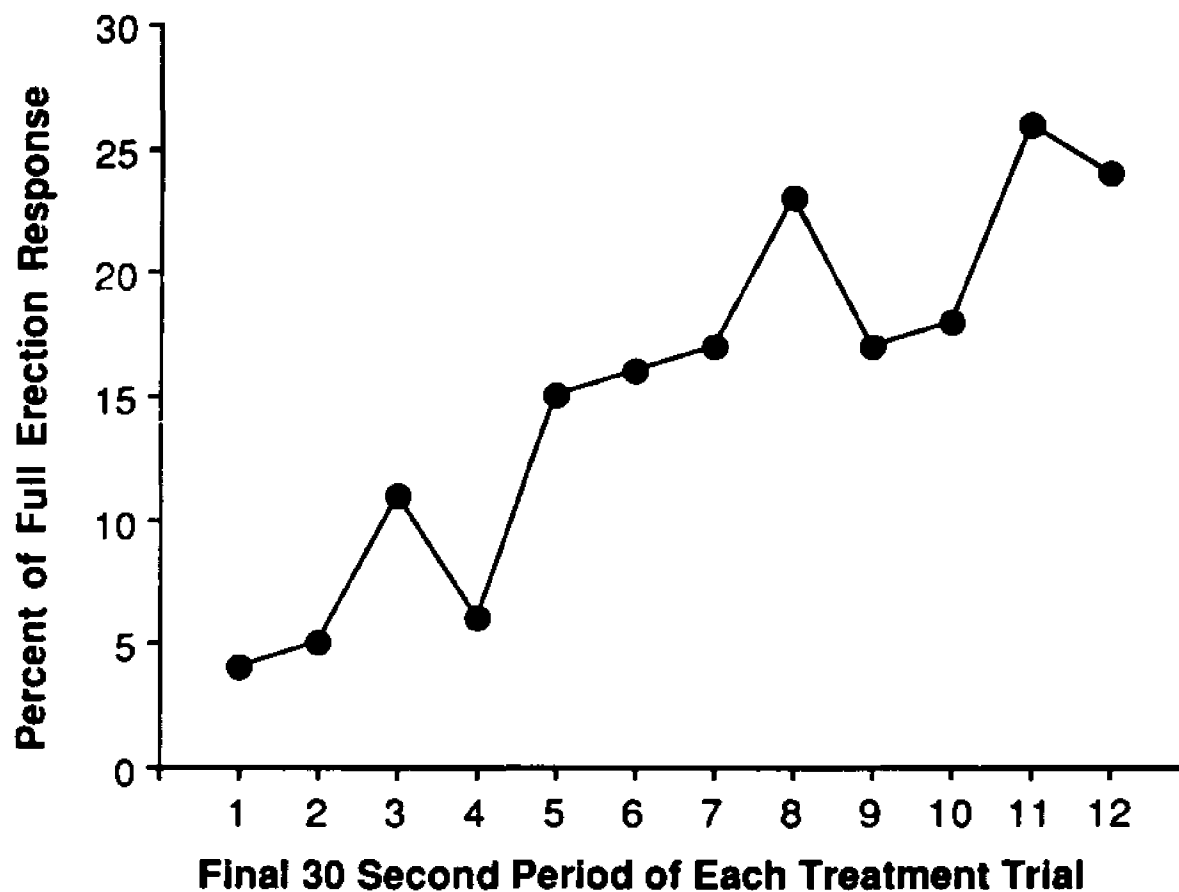


Figure 1. Percent of full erection response as a function of successive final 30-second periods of each trial for the deviant group, averaged across sessions and across subjects.

and across sessions.

Pre-post treatment effects on the GG assessment

A 6 x 2 (Tanner slide category by treatment group) MANOVA was performed with pre to post treatment as the within subjects factor. The analysis indicated a significant group by time interaction, Hotellings $t(6) = 2.28$, $p < .05$. The main effect for pre to post treatment was also significant, Hotellings $t(3) = 27.19$, $p < .001$. Because these multivariate tests indicated significant effects, univariate tests and planned comparisons were performed among the experimental groups.

A one-way, repeated measures ANOVA was performed for each group, for each Tanner slide category, to determine if erection responses were significantly changed from pre to post treatment.

For the extinction group, there was a significant reduction in erection response for Tanner category 1 from pre to post treatment, $F(1,12) = 8.82$, $p < .02$. Mean percent of full erection response was 31.5% at pre-treatment, and 11.3% at post-treatment. All other categories were not changed from pre to post treatment.

For the co-extinction group, there was also a significant reduction in erection response for Tanner category 1 from pre to post treatment, $F(1,12) = 18.79$, $p < .001$. Mean percent of full erection response was 56.9% at pre-treatment, and 6.8% at post-treatment. All other categories were not changed from pre to post treatment. The reduction in erectile responding to Tanner category 1 was larger for the co-extinction group than for the extinction group, $t(6) = 2.28$, $p < .05$.

For the deviant group, which was the control group, there was no significant difference from pre to post treatment for any category. For comparison purposes with the other two groups, mean percent of full erection response for the deviant group at pre-treatment to Tanner category 1 was 43.9%, and at post-treatment, 19.7%.

Figures 2, 3 and 4 visually depict the GG results pre and post treatment for the extinction, co-extinction and deviant groups, respectively. The graphs depict mean erection response for each Tanner category for all subjects, for each group. The vertical bars indicate the 95% confidence interval for the mean. Note the considerable amount of variance.

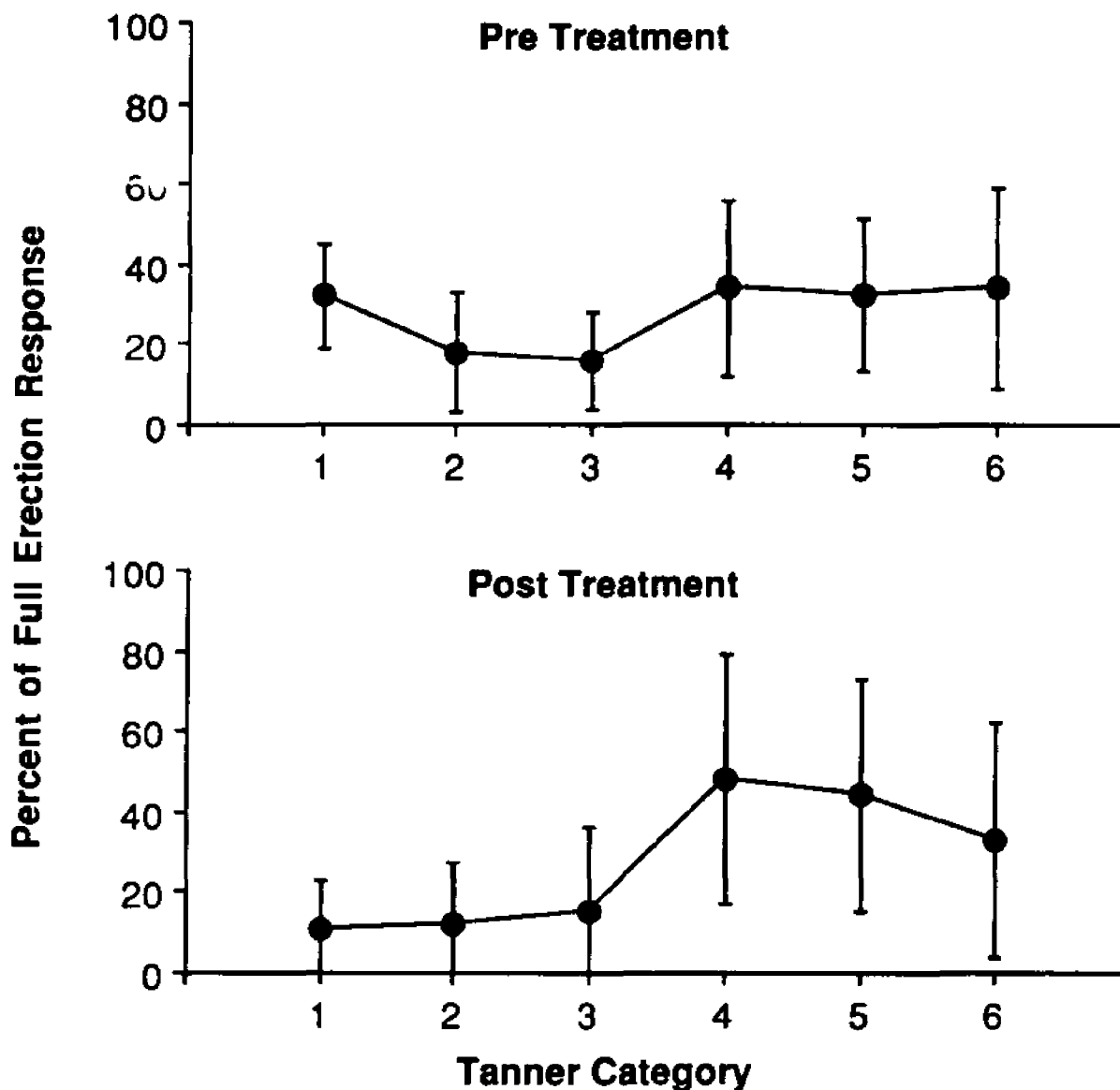


Figure 2. Percent of full erection response on the generalization gradient assessment pre and post treatment for the extinction group. Responses are averaged across slides within category and across subjects.

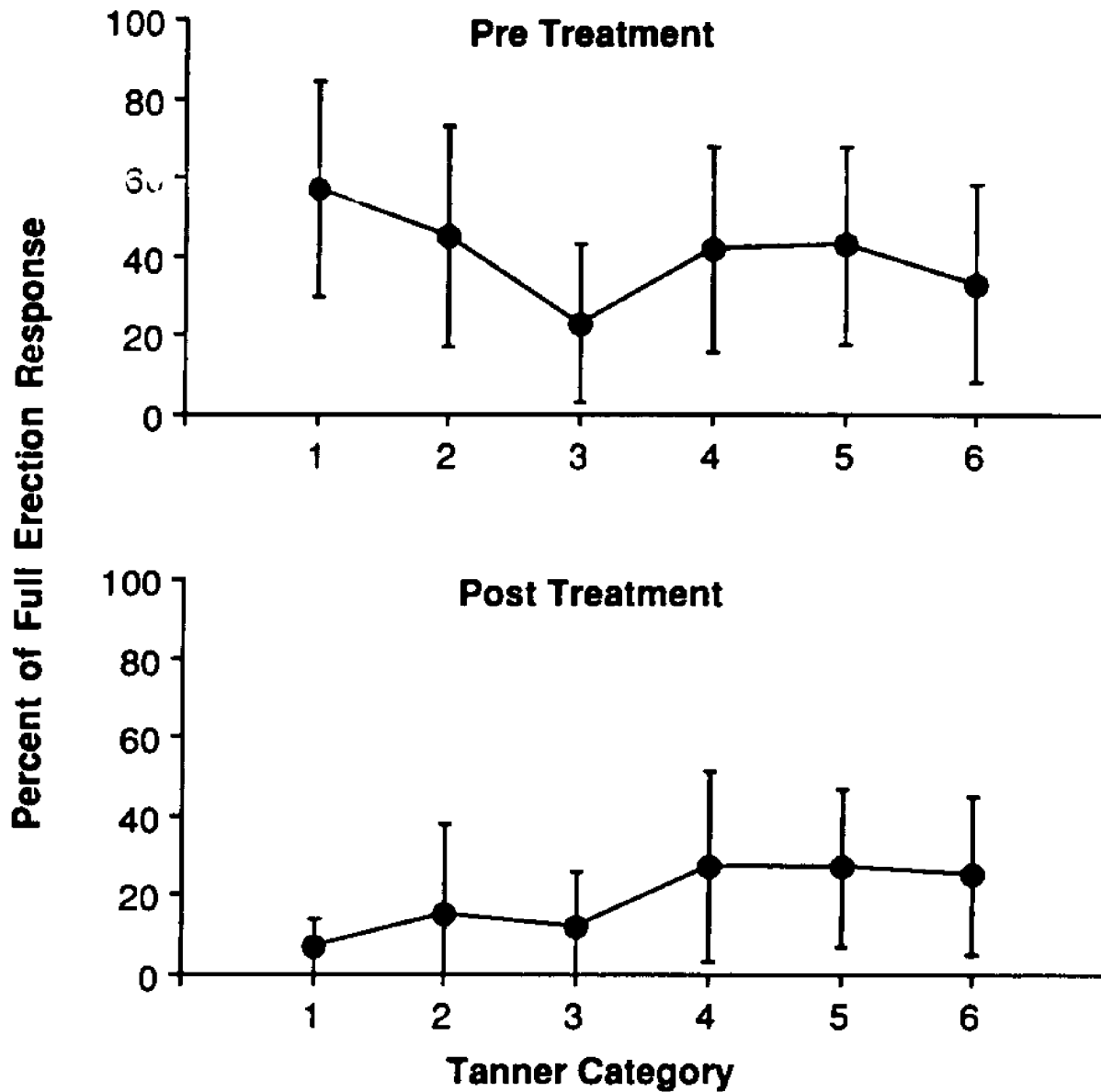


Figure 3. Percent of full erection response on the generalization gradient assessment pre and post treatment for the co-extinction group. Responses are averaged across slides within category and across subjects.

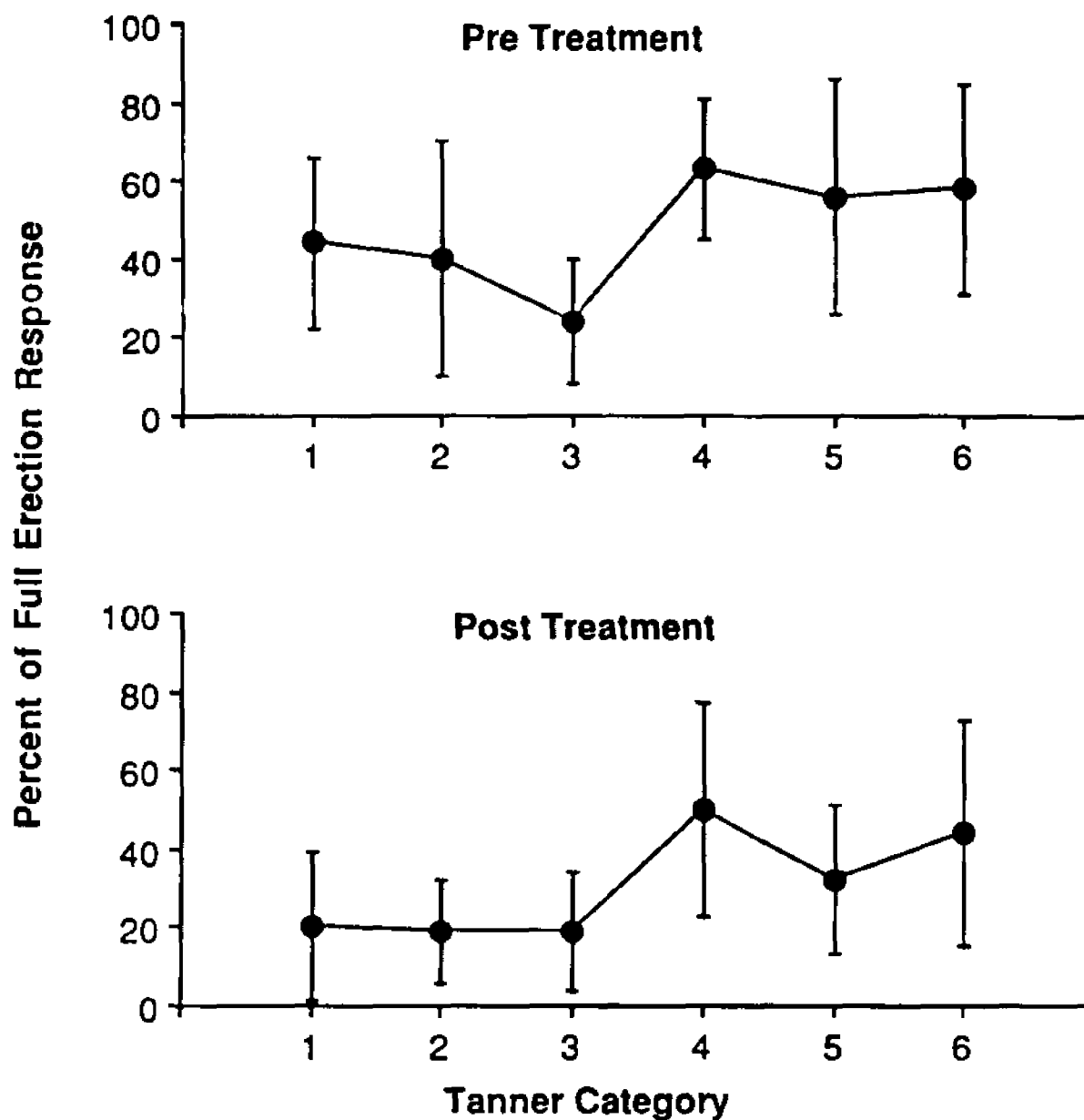


Figure 4. Percent of full erection response on the generalization gradient assessment pre and post treatment for the deviant group. Responses are averaged across slides within category and across subjects.

The Pedophile Index

The pedophile index (P.I.) provides a single relative measure of deviant arousal to non-deviant arousal. It is computed by dividing percent of full erection response to deviant stimuli into percent of full erection response to non-deviant stimuli. It does not take into account absolute levels of arousal, thereby removing a large source of variance. This must be considered when doing statistical analyses of P.I. scores. For the current study, the P.I. was computed by dividing the mean erection response to Tanner categories 1 and 2, by the mean response to categories 3, 4, 5, and Adult.

What is deviant? Various researchers have arbitrarily set different cutoff levels of P.I. scores, in an attempt to separate deviants from non-deviants based on the P.I. Suggested cutoffs have been 0.6 (Marshall et al., 1986) and 1.0 (Abel et al. 1981).

Table 5 presents frequencies at three different cutoffs of mean P.I. scores for each group at pre and post treatment.

Table 6 presents the actual P.I. scores at pre and post treatment for each subject in each group. A paired t test was performed for each group to determine

Table 6 (continued)

 Co-extinction group

Subject #	P.I. Pre	P.I. Post
1	2.35	1.33
2	2.20	0.38
3	1.06	0.67
4	1.18	0.07
5	1.07	0.39
6	1.97	0.65
7	1.12	0.13
Mean	1.42	0.52
Standard deviation	0.47	0.43

Table 6

Pedophile Indices for Each Subject, Pre and Post

 Extinction group

Subject #	P.I. Pre	P.I. Post
1	0.86	0.33
2	0.49	0.13
3	1.61	1.14
4	0.44	0.21
5	0.84	0.12
6	1.69	0.00
7	0.97	0.20
Mean	0.99	0.30
Standard deviation	0.49	0.38

Table 6 (continued)

Deviant group

Subject #	P.I. Pre	P.I. Post
1	1.06	0.56
2	0.73	0.25
3	0.41	0.32
4	1.75	1.58
5	0.19	0.16
6	0.34	0.13
7	0.99	1.30
Mean	0.78	0.61
Standard deviation	0.54	0.59

Table 7

Age Preference Profiles for All Three Groups,
at Pre and Post Treatment

Frequency data for each treatment group

	Extinction		Co-extinction		Deviant	
Profile	Pre	Post	Pre	Post	Pre	Post
1) Adult	0	0	0	1	0	0
2) Teen-Adult	2	4	0	2	2	3
3) Teen	0	2	0	2	1	2
4) Non-discriminating	1	1	0	2	0	0
5) Child-Teen-Adult	0	0	3	0	3	1
6) Child-Adult	1	0	0	0	0	1
7) Child-Teen	1	0	2	0	1	0
8) Child	2	0	2	0	0	0

whether or not scores were significantly different from pre to post treatment.

These analyses indicated that the extinction group showed significantly lower P.I. scores at post treatment, $t(6) = 3.73$, $p < .01$. The same was true for the co-extinction group, $t(6) = 3.99$, $p < .007$. The deviant group showed no significant difference in P.I. scores from pre to post treatment.

The data revealed that the co-extinction group had a higher mean P.I. score at pre than the deviant group. An independent samples t test confirmed that this was the case, $t(6) = 2.37$, $p < .05$.

Age Preference Profiles

The age preference profile provides an analysis of relative differences between deviant and non-deviant arousal, while taking into consideration the absolute levels of erectile responding.

Age preference profiles were prepared for each subject at pre and post treatment in the following manner:

Tanner category 1 was classified as child. Category 4 was classified as teen. Category Adult was classified as Adult.

The profile was prepared by noting what categories the subjects' had their highest responses to. Response could be low (0-19% of full erection), medium (20-39%) or high (40% and over). Subjects had to get at least a medium response to be given the corresponding label in the profile. For example, if a subject achieved medium arousal to all categories, he was classified as child-teen-adult. If he achieved low responding to all categories, he was non-discriminating.

There were 8 possible profile combinations. Table 7 lists these combinations, with the frequency of subjects falling into these combinations at pre and post treatment, for each group. The profiles are listed from least deviant, at the top, to most deviant, at the bottom.

The purpose of the profile analysis is for visual inspection of arousal patterns pre and post treatment. These data do not lend themselves to statistical analysis due to the small sample size. Subjects in the extinction and co-extinction groups can be seen to move up from pre to post treatment to less deviant profiles.

Incest vs. Non-incest

Since the literature on adult offenders has

repeatedly demonstrated that incest offenders show less deviant responses than nonincest offenders, an analysis of responses on the pre treatment GG assessment for incest and nonincest subjects was undertaken.

There were 12 incest offenders (57.1%) in the current sample. A one way ANOVA was computed for each Tanner category at pre treatment on the GG assessment. There were no significant differences for any category.

DISCUSSION

Subjects who were eliminated

Thirteen subjects (38.2%) were eliminated from the study for failure to achieve 20% of a full erection to any slide from Tanner category 1 on the generalization gradient assessment.

This number of rejections was expected, for two reasons: a) data from a major study using slides with adult child molesters indicated that 28% failed to achieve at least 10% of a full erection to any erotic stimulus (Marshall et al. 1986), and b) the McGuire et al. (1965) theory of the development of deviant sexual arousal, outlined in the introduction section, predicts that adults would have a better developed deviant sexual

interest pattern than adolescents.

The main obstacle to comparing adult and adolescent data is that no investigator has been able to assess normal adolescents in the laboratory. This is mainly because, in the experience of the Sexual Behavior Clinic, virtually no normal adolescent, even with monetary incentive, will consent to the assessment of penile erection response in the laboratory.

Subject characteristics

Table 3 shows that a considerable number of subjects can be seen to be "at risk" for committing a sex offense. Although there is little data to make definitive statements, it is widely believed that being sexually abused (33.3% of the sample) places one at risk for committing sexual abuse. Aside from sexual abuse, a high percentage of subjects (71.4%) were physically abused. This, combined with viewing of adult videos (42.9%), violence in the home (42.9%), violence in the neighborhood (95.2%), and a broken home (77.2%) can certainly contribute to the development of a deviant sexual behavior and interest pattern. At this point, however, no conclusion can be made regarding these characteristics, because no normative data have

been obtained with an appropriate comparison group.

Within session effects -- What did the treatment teach?

Responses during the first 90 seconds of each trial

For all three groups, the first 90 seconds of each treatment trial was the same; they looked at a slide of a nude, pre-pubescent girl. The data did not support the hypothesis that erectile responding would go down over trials, within session. The data indicate no significant trend in any direction, for all three groups.

This may have been because procedures in the study prevented extinction from occurring. For 6 subjects, the stimulus may have been too strong, such that more trials would have been needed to extinguish arousal. For 12 subjects, the stimulus was too weak, resulting in low initial values. For the remaining 3 subjects, the stimulus elicited enough arousal so that extinction could be demonstrated in 12 trials.

This would indicate that perhaps the best way to proceed with this population is to determine what deviant stimuli are highly arousing (if any), then to run each subject through enough trials to extinguish the

response. Number of trials would be determined individually for each subject.

Responses during the last 30 seconds of each trial

This discussion will compare responses during the "shadowing" task for the co-extinction and deviant groups, respectively. These data will also be compared to the extinction group, which did not engage in any verbal task during the final 30 seconds of each trial.

The co-extinction intervention involved multiple exposures to the deviant target, with the addition of a "shadowing" task done during the final 30 seconds of each 2 minute exposure to the deviant slide. These data show that, as predicted, any erection achieved during the first 90 seconds of stimulus presentation was significantly reduced during the 30 second interval, compared to the 30 second interval in the extinction intervention, in which there was no task. The data for the blurring trials indicate that subjects were looking at the slide while engaging in the shadowing task. The most likely explanation for the decrement in erection response is that the task competed with any deviant fantasy that might otherwise have been present. Subjects could not engage in the task and have a deviant

fantasy at the same time. Since they were definitely engaging in the task (the therapist monitored all verbalizations via an intercom) deviant fantasy was prevented from occurring, resulting in detumescence.

The amount of detumescence that could occur was limited, since the mean amount of tumescence during the first 90 seconds of each trial was 17.5% of full erection for the co-extinction group.

Although the mean amount of detumescence for the 30 second task was small (2.1% of full erection) virtually all subjects evidenced, over a considerable number of trials (47.6%) a consistent small decrease in erectile responsiveness. This compares favorably with the extinction group, in which there was a decrement in response on only 11.9% of trials. One subject in the co-extinction group showed increased responsiveness during the task, but this was for only one of the three sessions.

The small amount of detumescence is not surprising, considering the short (30 second) interval. Previous research (Becker, Stein, Kaplan and Rathner, unpublished manuscript) indicates that detumescence time from full erection takes an average of 109.5 seconds, at minimum 60 seconds, so a large amount of detumescence was not expected here.

The deviant group was the control group for this

study, because the subjects' task was to shadow a deviant audiotape, which was expected to prevent any decrease in deviant arousal that may have occurred due to the repeated presentation of the slide. The repeated presentation in itself constitutes a treatment, but, as predicted, the subjects' task elicited a considerable amount of erection response, so any effect of the repeated presentation was negated. The mean amount of tumescence for the deviant group was 13.4% of full erection.

A look at Appendix A will reveal that, beginning with approximately the fifth 30-second interval, the deviant tape became increasingly more erotic. Figure 1 confirms that erectile responding increased in almost linear fashion across trials. Although an attempt was made to make each 30 second segment contain some deviant content, clearly the later portions of the tape were more deviant. The mean erection response during the 30-second task from trial 5 to trial 12 for all three sessions was 19.3% of full erection. This is considerable, since previous research (Becker et al. unpublished manuscript) indicates that it takes an average of 95 seconds to achieve full erection in the laboratory. Shadowing of the deviant tape elicited so much arousal that it is now being considered as an

alternative means of assessment (Stein, 1988).

Pre-post treatment effects

Visual inspection of figures 2, 3 and 4 would appear to indicate that the deviant group had lower erection responses to Tanner category 1 at pre-treatment than the co-extinction group. Statistical analysis revealed no difference, due to high variability (indicated by the 95% confidence interval bars in figures 2, 3 and 4). This variability came from two sources: a) within category for each subject (3 slides per category), and between subjects.

For the extinction and co-extinction interventions (groups 1 and 2), as predicted, erectile responses to Tanner category 1 were significantly decreased. In addition, as predicted, the decrease for the co-extinction group was greater than the decrease for the extinction group. Results for co-extinction at post treatment were fairly uniform across subjects. Note the low variability for category 1 post data in figure 3. Although erectile responses to category 1 appeared to have decreased for the deviant group, the variability across subjects was so high that this did not turn out significant (see figure 4).

It was hypothesized that, for the extinction and co-extinction groups, responding to Tanner category 2 would decrease from pre to post treatment. This was not the case. Figures 2 and 3 appear to show decreases for category 2, but again note the high variability. There did seem to be some carryover from erection during the task to erection on the post-generalization gradient assessment. Two subjects in group 3 (deviant) showed significant erection responses (over 20% of full erection) to category 1 slides at post, while no subject showed such arousal in group 2 (co-extinction), and only one subject in group 1 (extinction). That one subject in group 1 subsequently reoffended (this was a brother-sister incest case and the reoffense was reported by his father). To the best of the clinic's knowledge, no other subject in this study reoffended.

The Pedophile Index (P.I.)

The data for the P.I. indicate that the extinction and co-extinction interventions significantly lowered the P.I.'s for both groups. Each subjects' P.I. score was lowered. Although figures 2, 3 and 4 indicate a general decrease in arousal to all categories, the decrease was much greater for Tanner category 1, thus

lowering the P.I. The subject who showed the greatest decrease in P.I. was subject #2 in the co-extinction group (see Table 6). Table 3 indicates that this subject was the only one who admitted to deviant sexual fantasy. Although one cannot draw conclusions from one subject, in the author's experience, sex offenders (adult and adolescent) who are admitters tend to show more deviant arousal in the laboratory. This could mean that: 1) admitters have a more deviant sexual arousal pattern than nonadmitters, or 2) admitters as a group don't try to suppress deviant arousal, while deniers, as a group, tend to try and suppress deviant arousal. The proper interpretation awaits further research.

The P.I.'s for two subjects in the deviant group showed virtually no change, and one subject increased, making the difference for the entire group non-significant.

The pre treatment P.I. for the deviant group was lower than for the co-extinction group. Nevertheless, the post treatment scores for the deviant group were still higher than the scores at post treatment for the co-extinction group.

The P.I. is not a measure to be taken alone, because it does not consider absolute levels of arousal. A subject with 2% of full erection to deviant cues would

have the same P.I. as a subject with 50% erection to deviant cues, if the non-deviant responses were 4% and 100%, respectively.

Age preference profiles

Age preference profiles can be useful because they show the relative difference between deviant and non-deviant responses (like the P.I.), and they show the absolute levels of arousal (low, medium, or high). A look at Table 7 shows change in profiles from pre to post treatment, with subjects in the extinction and co-extinction groups moving "up the profile ladder," to a less deviant profile. Subjects in the deviant group moved up too, but not as much as the other groups.

Clinical Significance

Estimates of "minimal erection response" range from 10% (Marshall et al. 1986) to 20% (Murphy and Barbaree, 1987). Twenty percent was chosen for this study as minimal erection response. Laws (1985) has determined that, while 20% may be accepted as the minimum, 40% of full erection can be accepted as being "clinically significant," as it generally indicates a substantial

level of erection to the target stimulus.

Barbaree and Marshall (1988) reported that approximately 50% of their adult heterosexual non-incest child molesters showed high erection responses to child targets in the laboratory. Only 29.4% of the subjects in the current study showed such responsiveness.

Barbaree and Murphy also reported that 35% of this same sample showed high erection responses only to child targets. None of the subjects in the current study showed such a profile. This provides tentative support to the theory that, since deviant sexual arousal takes a long time to develop and even longer to specialize, adolescent child molesters would be less likely than adult molesters to show arousal to children, and still less likely to show arousal only to children.

Incest vs. Nonincest

As discussed in the introduction section, numerous studies with adults found that incest offenders showed more normal arousal patterns on slide assessment than non-familial child molesters.

The 12 incest offenders in the current study showed no differences in erectile responses on the pre GG assessment compared to the 9 nonincest subjects.

Adolescent incest offenders are different than adult incest offenders. The relationship between brother-sister or first cousin is not the same as a father-daughter or uncle-niece relationship.

Unlike adult incestuous behavior, adolescent incest behavior does not tend to go on for years (there are exceptions). The victim often reports her brother or cousin to another adult.

Becker, Kaplan, Rathner and Kavoussi (1986) interviewed 22 adolescent incest offenders. Nine of the offenders (41%) had engaged in other (nonincest) paraphilic behaviors, thus challenging the assumption, based on adult data, that incest offenders are different from nonincest offenders. The current data on erection responses support the theory that adolescent incest offenders are equally at risk as nonincest offenders for committing further offenses without intervention.

Contingencies and faking

One common criticism of the laboratory evaluation of sex offenders is that they will try to fake, especially by suppressing response to deviant targets.

There is no doubt that, at intake, the subjects are motivated to suppress responses to deviant targets. All

subjects in this study were explicitly informed that they would have their erection responses measured to slides of girls of different ages. All the subjects were either arrested or had some contact with the court prior to their attending the clinic. All subjects were further informed that, if they desired, a report would be written discussing the results of their evaluation. Most of the subjects (85.7%) had signed release forms so that the referral source could receive a report of their evaluation.

Given these conditions, it is likely that, as Murphy and Barbaree (1987) put it: "given the kind of pressure offenders are under to appear normal, when deviant arousal is observed it is almost certainly an accurate description of their sexual preferences... particularly among [adult] offenders against children, groups of these subjects show a considerable amount of deviant arousal."

It will be difficult to repeat the above statement for adolescents until normal control subjects are assessed.

Given that the contingencies are in place for subjects to fake (particularly when reports are sent to referral sources), a considerable percentage of the subjects in this study (61.8% of those screened)

achieved some erection response to deviant targets.

Co-extinction as a brief intervention

The primary intervention in this study was co-extinction. It was designed to: 1) develop a distraction technique for the subjects while 2) decreasing deviant arousal through repetition of the deviant stimulus.

The present study was designed to study the short-term effects of this intervention. Can a brief intervention (3 sessions) interrupt the chain of events that leads to a deviant sexual behavior and/or arousal pattern? As shown in Table 1 and Table 3, many factors can lead to the initial sexual assault. There is evidence (McGuire et al. 1965; Abel et al. 1984) that it takes years following puberty for a pedophilic fantasy pattern to develop. In fact, no subject in this study showed an exclusively pedophilic arousal pattern in the laboratory.

Ten subjects (42%) showed high (>40% of full erection) responses to Tanner category 1 slides. Out of these ten, four subjects (19% of the total sample) showed higher erection responses to children than to adolescents or adults. These four can be said to have

an established deviant interest pattern. They are also at risk for developing an exclusive pedophilic interest pattern. Three of the four were in the co-extinction group, and all three showed appropriate erection responses at post-treatment. One of the four subjects was in the deviant group, and he showed no appreciable change in response pattern. Even though these subjects did well with this brief intervention, a longer intervention is indicated to ensure elimination of deviant sexual arousal. For the six subjects (29% of the total sample) who had arousal to both child and adolescent or adult slides, a longer intervention is also recommended to eliminate deviant arousal.

The remaining 11 subjects (58%) all showed moderate erection responses to at least one child slide. These subjects are at risk for developing a deviant interest pattern without intervention. A brief intervention such as co-extinction can serve to prevent a deviant interest pattern from developing, by 1) teaching the subject a method of distracting himself from deviant sexual fantasy, and/or 2) reducing the reinforcing value of deviant sexual fantasy through the repetition of a deviant visual image (the slide).

Absence of follow-up data

The subjects in this study were part of a larger treatment program. Following the final (post-treatment assessment) session in this study, all subjects were entered into an established treatment program at the Sexual Behavior Clinic. They were given individual laboratory sessions of verbal satiation (Becker et al. 1987) described in the introduction section. They were then entered into a six month group treatment, which included social skills, covert sensitization, sex education, cognitive restructuring, anger control, and self-esteem training.

The Sexual Behavior Clinic collects follow-up data at 3, 6 and 12 months following group treatment for all subjects, so the subjects in this study will be contacted for post assessments, which consist of audiotape and slide runs in the laboratory, paper and pencil tests, and a clinical interview. Any subject showing high deviant arousal will be asked to continue treatment. Because of the additional laboratory and group sessions, these follow-up data cannot be used to determine treatment outcome based on interventions in the current study alone.

Ethnicity and generalizing to other populations

All but one of the subjects in the current study were black and Hispanic adolescents from inner city, low socioeconomic areas. This was primarily because the Sexual Behavior Clinic received referrals exclusively from the criminal justice system of New York City. None of the subjects in the current study had a private lawyer. Data from other clinics around the country indicate that child molestations are committed by adolescents in all racial and ethnic groups in roughly equal proportions. With regard to Sexual Behavior Clinic referrals, those adolescents whose families can afford a lawyer often steer clear of the criminal justice system, and never get referred.

Another factor that distinguishes the current sample is that only 4 of the 21 subjects (19%) fully admitted to the deviant behavior. Some clinics will only accept admitters into their treatment programs. Admitters are less likely to try to suppress erection responses to deviant stimuli, because they typically desire treatment. All four of the admitters in this study showed high erection responses to Tanner category 1 slides at pre-assessment. As discussed earlier, this means that either 1) admitters have more deviant arousal

than deniers, or 2) admitters don't try to suppress deviant arousal, while deniers do.

Until more data are collected, it is best to limit generalizability of the current findings to black and Hispanic inner city adolescents. It may be that the crucial variable that separates the current sample from other samples is the uniformly low socioeconomic status of these clients. Whether or not the client admits to the deviant behavior should also be taken into account. It is the opinion of the author that deniers pose an equal risk to the community as admitters.

Standardization of assessment stimuli

There is currently a concerted effort by laboratory researchers in sexual deviance to develop a standardized set of stimuli for laboratory assessment. The slides used in the current study (Farrall Instruments, Inc.) are part of this nationwide standardization study.

The major advantage of standardization is that it facilitates comparison of work done in different locations. Another advantage is that studies of reliability, validity, and treatment outcome can be done across different laboratories.

A disadvantage of standardization is that

assessment may become too "cookbook." One of the hallmarks of behavior analysis is that therapists individualize assessment and treatment procedures based on the clients' needs. A given set of slide stimuli in a laboratory assessment may be too strong or too weak for some subjects. Either way, the laboratory run would produce a non-discriminating pattern.

A second problem with standardization is the ethnicity of slides. Unfortunately, all the slides in the current study depicted Caucasian models. It is not known if the current, mostly black and Hispanic sample would respond differently to slides matched for ethnic group.

The first priority of research on appropriate assessment instruments should be a determination of what stimuli are most effective at eliciting levels of deviant arousal that distinguish sex offender subjects from normal controls.

Suggestions for future research

One major component of the study that did not show the predicted results was the first 90 seconds of each treatment trial. Erection responses showed no significant change over time. Two changes in procedure

could make the intervention more effective. First, for those with high initial arousal, repeated presentation of the same slide can continue (for hours if necessary) until there is zero responding. This criterion-based treatment would address individual differences in responding, rather than a trial-based treatment, which essentially ignores individual differences. Second, for subjects with low initial arousal, slides can be replaced with video excerpts, which are much more arousing. These changes have already been incorporated into a grant proposal written by the author (Stein, unpublished manuscript).

A new assessment technique may have emerged from the deviant group. While "shadowing" the deviant audiotape, subjects evidenced a considerable amount of erectile responding. Shadowing of deviant audiotapes could be used as an assessment instrument. This method would be resistant to faking because the subjects would be unable to engage in competing behavior. It would probably be best to use this assessment once the client is fully adapted to the laboratory and feels comfortable with the laboratory technician. In practice, it could be done as a second assessment session, following an initial assessment with slides, videotapes, and audiotapes without shadowing.

Conclusions

The current study demonstrated that both extinction and co-extinction can significantly decrease deviant sexual arousal, without affecting non-deviant arousal. Co-extinction seemed to be more effective than extinction. The high variability of erection responses across sessions and across subjects indicates that it would be best to treat each subject as a single case in future studies. One subject (in the extinction group) reoffended, and he was the only subject in that group who showed deviant arousal at post treatment.

This study examined the short term effects of a brief intervention. This intervention can serve to interrupt the development of a deviant interest pattern by breaking the chain of events (especially masturbation to deviant fantasy) that can lead to a sexual offense. For those subjects with strong deviant arousal, it would probably be wise to increase the number of sessions, with post testing on the generalization gradient assessment to ensure that erection responses remain non-deviant. For subjects who evidence low erectile responding to non-deviant stimuli (not generally a problem with adolescent offenders as opposed to adult offenders), techniques can be used that can teach the

offender appropriate sexual fantasy. Follow-up assessments every 6 months up to at least a year are recommended for adolescent child molesters.

APPENDIX AAudiotapes for Final 30 Seconds of Each TrialDeviant Tape #1 452 words

I'm at home with a little girl. She's very pretty. I'm watching after her for the day. She's sitting in a chair looking at a magazine. I want to touch her. I tell her to come over. / She puts down the magazine and looks at me. I tell her to get out of her chair and to come over to me. She smiles and then walks over to the couch, where I'm sitting. / I tell her to sit on my lap. She says OK, and she sits down on my lap. She asks me to turn on the TV, so I get up and turn it on. Then I go back to the couch and sit down. / I tell her to sit on my lap again, and she does. While we're watching TV, I start to touch her arms. I'm moving my hands up and down her arms. She says it feels good. / Then she asks me to rub her back. I take off her shirt. She's got a nice, smooth back. She's a little girl, and she looks really nice. I start moving my hands up and down her back. / I'm rubbing her back. She says it tickles a little bit but she likes it. She tells me to do it more. But now I want to feel her legs. I move my hands

down to her pants and start feeling her legs. / She starts to move away but I hold her there. I unzip her pants and I start to pull them down. I pull her pants down and I take them off. / Now she's sitting on the couch with me and she's naked. I see her sitting there and she's really pretty, this little girl. Her skin is real smooth, and she's looking at me. I tell her to open up her legs. / At first she doesn't want to, so I pull her legs open. She looks a little nervous as I put my hand on her naked leg. She looks nervous but she doesn't say anything, she just lets me touch her. / I begin putting my hands on her chest. She's real young, with no breasts, but her body feels good. Now I'm reaching down to her hips, and I'm feeling her thin hips. / She seems to like it, and she smiles. She's laying there on the couch with her legs open. I reach down between her legs. I'm rubbing her between her legs. It starts to feel a little wet. / Now I push my finger into her. She tells me not to do it but I do it anyway. I'm moving my finger in and out of this little girl, and it really feels good.

Deviant Tape #2

451 words

It's late at night. I'm at home. Everybody is asleep, but I'm awake. There's a girl staying at the house with us. She's a little girl, and I like her. I'm turning the TV channels, looking for something good to watch on TV. / There's nothing good on. There's nothing to do. I'm really bored. I start to think about the little girl sleeping in the bedroom. She's very pretty. I start walking toward her room. / I open the door, and I see her there in bed. She's lying there, asleep, with a blanket over her. I walk over to the bed. I'm standing over her, looking at her. / I touch her on her shoulder, and I slowly take the blanket off her. She's wearing only her underwear. She begins to wake up, and she looks at me. She asks me what I am doing in her room. / I tell her I want to have sex with her. She looks afraid and says no, but I tell her there's nothing she can do, I'm going to have sex with her anyway. She tries to get out of the bed, but I'm much too strong for her. / She's a little girl, a lot smaller than me, and there's no way she can fight me. I'm holding her down on the bed. I'm feeling her body all over. Now I'm taking off her shirt, and feeling her chest. / She only has her panties on, and I'm lying on

top of her there in the bed. I'm really excited, and I want to have sex with her. I pull off her panties. / She's naked, lying there in the bed. I'm very hard now. I push it all the way into her. It feels really good. I'm having sex with this little girl on the bed. It's late at night, / and no one can hear us. Now I turn her over. I'm feeling her back side, and I'm still really turned on. I get out of the bed, and I tell her to get on her knees. / I'm really hard. I tell her she has to suck me off. She doesn't want to, but I tell her she better do it or else. She starts licking it. / That feels really good, and I'm getting more and more excited. I tell her to get back in the bed and spread her legs. I see her there in the bed with her legs spread out. / She's very little and she's laying there in the bed. She says I should leave her alone, but I'm not going to. I want her. There's nothing she can do to stop me.

Deviant Tape #3

452 words

It's in the afternoon. I'm going to visit my friend. I knock on the door. My friend's little sister answers the door. I see her there standing in the hallway. She looks nice. I ask her if my friend is home. / She says no, she's alone in the house. She asks me if I want to come in. I say yes, and I walk into the house. I follow her into the living room. She's wearing a shirt and a short skirt. / She really turns me on. I want to get her in bed. She sits down on the floor. She's just sitting there, reading a comic book. She's very young, and she looks really nice. / I sit down on the floor next to her. I see her smooth legs. I tell her she's cute and she smiles. I'm sitting there on the floor next to her, and I'm starting to get excited. / I tell her to take her shirt off. She looks at me a little funny, and I tell her again to take her shirt off, so we can have some fun. / She takes her shirt off, and I can see her little chest. She's sitting there on the floor with no shirt on. I start feeling her body. She says it feels good, so I do it some more. / I'm getting really hard now. I take off my pants and tell her to feel how hard it is. She feels it, and she can't believe how hard I am. I tell her to

move her hand up and down on it, and she does. / It feels so good. I'm getting more and more turned on, it feels better and better. Now I tell her to take off her skirt and panties. She takes them off. / She's sitting on the floor, naked. She's got smooth skin, no breasts, she's small. I'm a lot bigger than her, and she'll do whatever I say. I tell her to open up her legs, I tell her to spread her legs. / She opens up her legs a little. I grab her legs and I open them up all the way. Now I lie down on top of her. I'm lying on top of this little girl on the floor. / I'm rubbing my body against hers. I'm on top of her, and she can't move. I'm too big for her. I'm real hard now. I spread her legs and push myself into her. / I'm having sex with her there on the floor. I'm moving it in and out. We're having sex there, me and this girl. She likes it as I push it in and out of her. I'm pushing it in and out, faster and faster.

Neutral Tape #1

455 Words

I'm at home babysitting. It's a Saturday afternoon, and I'm babysitting for a little girl while her mother is out. She's sitting in a chair looking at a magazine. I turn on the TV, and sit down to watch TV. / After watching TV for awhile, I get up and turn it off. I ask the little girl if she wants something to eat. She says yes, so I go into the kitchen to make her a sandwich. / I tell her to come over and sit down so she can eat the sandwich. I make myself a sandwich too, and I go over to the table to eat with her. I'm just sitting there with this girl, eating the sandwich. / After we're finished, she leaves the table and goes over to the couch. She says she wants to lie down for a little while and take a nap. While she's taking her nap, I sit down on a chair near her, / and I start to read my favorite magazine. I'm just sitting there, looking at this magazine, while this little girl is taking a nap. She sleeps for about an hour. When she wakes up, / she asks me if I want to play a card game with her. I say OK, and she goes into the bedroom to look for her cards. A few minutes later, she comes out of the bedroom with a deck of cards. / We play cards on the living room floor for about a half hour. She tells

me she likes when I babysit for her because I play games with her. I tell her that's OK, I don't mind babysitting for her. After we finish playing cards, / she goes over to the window, and looks out at the street. She says she likes to count the number of people on the street, because she's learning counting in school. She counts ten people in the street. / Then she goes back over to the couch and starts playing with a toy. I'm just sitting there, kind of bored, with nothing to do. I look out the window and I see a friend of mine who lives down the block. / I yell out to him, and he yells back. He tells me to come down and go to the store with him, but I tell him I can't because I have to babysit. / He asks me how much longer I have to babysit. I tell him that the little girl's mother won't be home for about an hour. / He asks me if I can come out when the girl's mother comes back. I tell him yes, I can. Then I say goodbye to him and I tell him I'll see him later.

Neutral Tape #2

451 Words

It's in the evening. I'm at home with my little sister. She's gone to bed early, so I'm just sitting around the house. I decide to do some homework for school. / I take out my books and put them on the table. I do my homework for about a half hour. After I finish, I feel kind of tired, so I lie down on the couch for a little while. / Then I get up and turn on the TV. A few minutes later, my little sister wakes up and walks into the living room. She says the TV woke her up and she couldn't sleep. / She says she's going to do some of her homework. She's learning how to add in school. She goes to the bedroom to get her notebook. She puts her notebook on the floor and opens it up. / She takes her pencil and starts writing in her notebook. I look over at her and I notice that she looks a little confused. I ask her if she needs some help with her math homework. / She says yes, she needs a little help with it. She shows me some of the examples in the book that the teacher told her to do for her homework. I tell her the answers to some of the math examples. / Then I tell her she should do the rest of her homework problems herself. After she finishes her homework, she asks me to put on one of my tapes. I shut off the TV and go

into the bedroom to get my cassette tape recorder. / I get my cassette tape recorder and I bring it into the living room. I put it on a table, and I play one of my tapes. After listening to the tape for about twenty minutes, my sister falls asleep on the couch. / I wake her up and tell her it's time to go to bed. She says she wants to stay up and watch TV. I tell her she has to go to school tomorrow, so she should go to bed now. / She says OK. She gets up, and walks into the bedroom. She gets into bed, and tells me to turn the light out in her room. I turn the light out. / She says good night, and I tell her I'll see her in the morning. I go back into the living room. The phone rings and I answer it. It's a friend of mine from school. / He tells me he's going to meet me tomorrow morning so I can go to school with him. I tell him I'll see him tomorrow. He says goodbye. I hang up the phone, and I get ready for bed.

Neutral Tape #3

453 words

It's in the afternoon. I'm going to visit my friend. I knock on the door. My friend's little sister answers the door. She's standing there in the doorway. I ask her if my friend is home. / She says that my friend went out to the store, and that he'll be back in a few minutes. She asks me if I want to wait for him. I say yes, and I come into the house. / The girl's mother comes out and asks me how I'm doing. I say I'm doing all right. She asks me about school and my family, and I just tell her that everything is okay. / A few minutes later, my friend walks in. I ask him how he's been doing, because I haven't seen him for about a week. He says he hasn't been up to much, just going to school and working. / He asks me what I want to do today. I tell him we should go to the movies. We sit around the house for another half hour, just talking. My friend's little sister says she wants to come with us. / Her mother says that the movie we are going to see is not for little girls. She gets upset and goes into the bedroom. I ask her mother if we can take her to a cartoon movie. / She says yes. I go over to the little girl and tell her that she can come with us, because we are going to see a cartoon movie. Now

she's very happy, because she's going to the movies with her big brother and me. / We leave the house, and my friend's mother tells us to take care of his little sister while we are out. I tell her not to worry, we'll watch her. We leave my friend's building and we walk down the street. / I see the bus coming and I tell my friend to hurry up so we can catch the bus. We run as fast as we can, and we make it just in time. / The three of us get on the bus, and we sit down. My friend's little sister likes being with her brother and me on the bus. We ride on the bus for about 20 minutes. / Then the three of us get off and start walking toward the movie theater. The theater is about 5 blocks away. As we get near the theater, we see that there is a long line. / My friend says he'll go get the tickets, while we wait on the line. We wait for about 45 minutes, and then finally it is time to go in. We buy some popcorn, and then we go into the theater and sit down.

APPENDIX BThe Adolescent Clinical Interview

Note: Due to copyright considerations, only those parts of the clinical interview that were directly relevant to the current study are presented.

Date of Birth of Subject: _____

Race of Subject: _____

Current living arrangement: 1=With both parents,
2=With Mother only, 3=With Father only, 4= Both
Grandparents, 5=With Grandmother only, 6=With
Grandfather only, 7=With Foster Parent(s), 8=With
Legal Guardian, 9=With Sibling, 10=In Group Home,
11=Detention Center 12=Other family member, 13=With
Friends, 14=Alone 15=Other _____

Number of times you have been hospitalized for a
psychiatric/psychological problem? (0-9)

How many times have your been arrested for a non-sexual

crime? 0=Never, 1= One, 2= Two, 3= Three, 4= Four,

5= Five, 6= five to ten, 7= 10 to 15,

8=more than 15

What types of Crimes were they if any? (5 most serious, Chrono)

0=No crimes, 1=Burglary, 2= truancy,

3=Drug charges (minor), 4=Drug charges (major),

5=Robbery, 6=Car theft, 7=Petty theft, 8= Assault

and Battery, 9= Loitering, 10=possession of stolen

property, 11= Disorderly conduct, 12= Drinking

under age or drunk driving, 13= Driving without a

license, 14= Manslaughter, 15= Trespassing, 16= Other.

How many times have you been arrested for a sexual crime?

0= Never, 1= one, 2=two, 3= three, 4= four, 5= five

6= greater than 5

What were the charges brought against you?

- Do you:
1. Agree totally with the police report of these sexual acts?
 2. Agree with most of the police report of these sexual acts?
 3. Agree with some of the police report of these sexual acts?
 - 4 Disagree with all of the police report about these sexual acts?
 - 9= Does not apply to me

Concerning the alleged sexual crime you were charged with:

1. The alleged victim initiated the involvement.
2. Involvement was by mutual consent.
3. I initiated the involvement but the victim went along with it without resistance.
4. I initiated and the victim resisted.
5. I initiated, the victim resisted and I had to use force to commit the crime.
6. I was not present at the alleged crime.
9. None of these apply to me.

Concerning the alleged sexual crime you were charged with:

1. I was involved just the way it was described in court
2. I was involved but wasn't responsible because I was under the influence of alcohol or drugs
3. I was present at the scene but committed no sexual offense
4. I was not present but I knew the victim
5. I was not present and I did not know the victim
9. Does not apply to me

Do you currently have urges to commit sexual offenses?

1=never, 2=rarely, 3=sometimes, 4=frequently,
5=always

Do you think you should be evaluated to see if you need treatment for sexual offenses? 1=no, 2=probably not, 3=don't know, 4=probably yes, 5=yes, 9=Not applicable

Do you need treatment for your sexual offense(s)?

Same scale as above

Have you ever had a venereal disease? 1=yes, 2= no

Do you currently have a venereal disease? 1=yes, 2=no

Have you ever had sexual contact with an AIDS victim?

1=yes, 2=no, 3=not sure

Do you have AIDS? 1=yes, 2=no, 3=don't know

(possible)

Last year, taking into consideration all
sources of income, what was the total gross
income for your household?

1= under 2,000

6= 25,000-39,999

2= 2,000-4,999

7= 40,000-59,999

3= 5,000-9,999

8= over 60,000

4= 10,000-14,999

9= None

5= 15,000-24,999

0= No answer

When you were a child do you recall being

physically abused?

1=yes, 2=no,

3=don't know

If so was the person; 1=stranger, 2=known,
3=NA

If so was the abuser 0=none, 1=mother, 2=father,
3=brother, 4=sister, 5=grandmother, 6=grandfather,
7=aunt, 8=uncle, 9=other male relative, 10=other female
relative, 11=non relative adult male, 12=non relative
adult female, 13=non relative child male, 14=non
relative child female, 15= other

Did the abuser use; 1=hands, 2=belt, 3=stick, 4=other
object, 5= , 9=NA

How old were you when this first occurred? 99=not app.

How many times did it happen? 99=not app.

How many times did you require medical attention
because of the abuse? 99=not applicable

How did you feel when it occurred? 1=yes, 2=no, 3=NA

Angry

Guilty

Depressed

Fearful or Phobic

Anxious/Nervous
Sleep problems
Eating problems
Suicidal thoughts
I ran away

Did you tell anyone what had happened? 1=yes, 2=no,
3=NA

Who did you tell? 0=no one, 1=mother, 2=father,
3=brother, 4=sister, 5=grandmother, 6=grandfather,
7=aunt, 8=uncle, 9=other male relative, 10=other female
relative, 11=non relative adult male, 12=non relative
adult female, 13=girlfriend, 14=boyfriend 15=other

Did they believe you? 1=yes, 2=no, 3=NA

Did they do anything to stop it from happening again?

1=yes, 2=no, 3=not sure, 9=NA

When you were a child do you recall being sexually
abused? 1=yes, 2=no, 3=don't know

If so was the person; 1=stranger, 2=known, 3=NA

If so was the abuser 0=none, 1=mother, 2=father,
3=brother, 4=sister, 5=grandmother, 6=grandfather,
7=aunt, 8=uncle, 9=other male relative, 10=other female
relative, 11=non relative adult male, 12=non relative
adult female, 13=non relative child male, 14=non
relative child female, 15=other

Did the abuser use 1=verbal coercion, 2=physical
coercion, 3=excessive physical, 4=other, 9=not
applicable

Did you ever require medical attention for sexual
abuse?

1=yes, 2=no, 3=not applicable

Current frequency of masturbation to
nondeviant sexual material involving females?
(avg. per week)

Current frequency of masturbation to
nondeviant sexual material involving males?
(avg. per week)

What percentage of your sexual fantasies are
nondeviant and about females?

What percentage of your sexual fantasies are
nondeviant and about males?

How does pornography effect your nondeviant
sexual arousal?

1=don't use

2=increases

3=decreases

4=no effect

What type of pornography do you use most
often?

1=Don't use, 2=Magazines, 3=Video tapes,

4=Television 5=Books, 6=Other

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