

Perceived Parental Deviance, Parent-Child Bonding, Child Abuse, and Child Sexual Aggression

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Structural equation modeling was used to test a theoretical model of the etiology of deviant sexual aggression by adolescents. The subjects were 117 juvenile male sexual offenders who had been referred from either criminal justice or social service agencies to a clinic that treated offenders. The tested theoretical model included several family factors: perceived parental deviance, child physical and sexual abuse history, and children's bonding to their parents. The model as a whole fit the data well. Results indicated that physical abuse by the father and sexual abuse by males increased sexual aggression by adolescents. Also, children's bonding to their mother was found to decrease their sexual aggression. These results are explainable from a social learning perspective and from a parent-child attachment, or social control, perspective, but the alternative perspectives of evolutionary psychology are also considered. Directions for future research are suggested.

KEY WORDS: deviant arousal; parent-child bonding; sexual offenders; adolescent offenders.

INTRODUCTION

Sexual crimes by adolescents represent a serious problem in our society. Roughly 20% of all reported forcible rapes were committed by juveniles, and deviant sexual behaviors of most chronic adult sexual offenders

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have been found to begin in adolescence. Public and academic attention to this problem, however, did not begin until relatively recently, despite its seriousness (Becker, Harris, & Sales, 1993). Therefore, academic research in this field is still in its developmental stage.

In their recent literature review, Becker *et al.* (1993) classified characteristics of juvenile sex offenders and their environments into three areas: individual characteristics (e.g., lack of social and assertive skills, history of nonsexual delinquency, low academic performance, lack of impulse control, depression, lack of proper sex education), family environment (e.g., unstable home environment, unhealthy home situations, juveniles' witness to family violence, history of child abuse), and social environment (e.g., social isolation). At present, however, we do not know whether these characteristics are causes or consequences of juvenile sex offenses. Further, little is known about how the above characteristics interact with one another in the etiology of deviant sexual behaviors by adolescents. Therefore, it may prove helpful to present a causal model of juvenile deviant sexual behavior which integrates the previous empirical findings.

The purpose of the present study is to present a theoretical model of adolescent sexual aggression that focuses on the family environment and to test the validity of the model empirically. The characteristics of the family environment examined include perceived parental deviance (perceived sexual deviance and violent tendencies), child abuse history (physical and sexual abuse), and adolescents' bonding to parents. The outcome variable selected for this study is deviant sexual aggression by adolescents.

This research examines the etiology of sexual aggression of adolescent *males*; females are excluded because most reported sexual offenses are committed by males. In addition, since there might be gender differences in the etiology of sexual deviance, it is appropriate to develop a theoretical model of sexual deviance separately for males and females.

The Theoretical Model

Perceived Parental Deviance. The family environment contains features that are common among young sexual offenders, with an unstable home being one of these (Smith and Israel, 1987). Sibling incest has been reported to occur in "unusual, unhealthy home situations, such as a parent having a sexual pathology, or the child viewing sexual interactions between the parental figures whether they are biological parents or parent surrogates" (Becker *et al.*, 1993, p. 220). In addition, in studies of juvenile delinquency in general, it has been found that delinquents' parents are more likely to be sexually deviant (e.g., promiscuous) (Loeber & Stouthamer-

Loeber, 1986). Thus, it is reasonable to assume that perceived parental sexual deviance contributes to a family environment in which children learn deviant sexual behaviors.

Since sexual aggression can be viewed as one type of violence that is expressed in a sexual manner, it is reasonable to hypothesize that parental violence characteristics are causally related to children's sexual aggression directly or indirectly. A review of empirical research in juvenile delinquency revealed that juvenile delinquents who commit serious crimes are more likely to be raised by parents who also had criminal histories of violent crimes (Loeber & Stouthamer-Loeber, 1986; Widom, 1989). In addition, previous research found that adolescent sexual offenders are more likely to witness family violence between a parent and a child or between two parental figures (Davis & Leitenberg, 1987). Thus, we hypothesize that parental tendencies toward violence affect children's sexual aggression.

Another way of learning sexual deviance and violence may be through physical and sexual abuse by a family member. Although the causal relationships between child abuse history and subsequent sexual aggression are considered in the next section, the relationship between perceived parental deviance and child abuse should be mentioned here. Empirical evidence indicates that people who are violent outside of the home are more likely to be violent toward family members (Hotling & Straus, 1989). Thus it is reasonable to suppose that children whose parents have violent tendencies are more likely to be physically abused by them. Furthermore, it is also reasonable to hypothesize that deviant parents are more likely to expose their children to opportunities for physical abuse by others. If parents condone violence, they may expose their children to other individuals who are also violent and be remiss in the supervision of their children. These hypotheses are consistent with empirical research indicating the coexistence of parental deviance (sexual pathology and/or violent tendencies) and inappropriate parenting practice (Loeber & Stouthamer-Loeber, 1986; Patterson, 1989, 1992).

Despite the hypothesized relationship between perceived parental deviance (through physical violence) and child nonsexual abuse, it is inappropriate to hypothesize that deviant parents (through physical violence or sexual deviance) are more likely to sexually abuse their male children. Empirical findings indicate that male children are more likely to be sexually abused by non-family members (although female children are more likely to be sexually abused by a father figure, i.e., the biological father or stepfather) (Beitchman, Zucker, Hood, daCosta, & Akman, 1991; Finkelhor, 1990). Sexually deviant parents may be more likely to expose their children to opportunities to be sexually abused by non-family members due to pa-

rental attitudes condoning sexual deviance and their lack of supervision of their children.

The path from perceived parental deviance to children's lack of bonding to parents (independent of child abuse history) also warrants examination because it may influence the mechanism by which perceived parental deviance leads to sexual aggression in children. (The causal paths from child abuse history to lack of bonding and from adolescents' lack of bonding to parents to sexual aggression are examined below.) Previous empirical research on juvenile sexual offenders has found that distant relationships between parents and children are characteristic in these families. Further, research on delinquency has consistently found that parents of delinquents (who are also more likely to be deviant) are less likely to show affection toward their children, and these children are not likely to feel emotional attachment to their parents (Loeber & Stouthamer-Loeber, 1986; Patterson, DeBaryshe, & Ramsey, 1989; Patterson, Reid, & Dishion, 1992). Therefore, a causal relationship between perceived parental deviance and children's lack of bonding to parents might exist. We recognize, however, that there might be other causal paths between perceived parental deviance and children's sexual aggression that are not examined in this study (e.g., the causal paths mediated by lack of parental supervision of children and children's exposure to deviant peer influences).

Finally, the relationship between parental sexual deviance and parental tendencies toward violence also should be mentioned. After reviewing the empirical criminologic research, Gottfredson and Hirschi (1990) argue that individual propensity to deviant behavior is caused by a single trait: low self-control. According to these authors, people who have low self-control are more likely to engage in every kind of socially deviant behavior (e.g., crime, delinquency, substance abuse, and sexual deviance). Therefore, it is appropriate to hypothesize a single trait of perceived parental deviance which includes both sexual deviance and violent tendencies.

Physical Abuse History. A number of reports indicate that physical abuse causes children to be more aggressive. For example, Johnson (1988) found that 19% of a sample of 47 juvenile sex offenders had been physically abused prior to their first offense. However, the empirical evidence on which these writings depend is fragile. Most of the previous empirical research has been plagued by methodological flaws (see Ammerman, Cassisi, Hersen, & Van Hasselt, 1986; Widom, 1989). Generally, studies in this area are based on small clinical samples, lack control groups, lack controls for the alleged confounding effects of other family factors, and use measures with uncertain reliability and validity. Therefore, it is premature to say that physical abuse causes victim-children to be more aggressive in subsequent life. In addition, there are some studies which have found no relationship

between a history of physical abuse and subsequent child aggression (e.g., Bolton, Reich, & Gutierrez, 1977; Reich & Gutierrez, 1979), while several others reported mixed findings (McCord, McCord, & Howard, 1961; Welsh, 1976). However, since the majority of studies has found a relationship between physical abuse and child deviant behavior, it is worthwhile to examine the hypothesis that physical abuse increases adolescents' sexual aggression.

Another element which has not received full attention in previous research on the effects of physical abuse on child deviance is the relationship between abuser and victim (Koski, 1987). If the effects of physical abuse on child sexual aggression are to be explained in terms of social learning theory (Bandura, 1973), it is necessary to differentiate the effects of physical abuse by the father and by the mother, as physical abuse by the father is considered to have a greater impact on male children because of the like gender-role model. According to Hotling and Straus (1989, p. 366),

Research is needed to specify the effects of [the] particular type of exposure to family assault on outside family violence and crime. For example, the differential influences of experiencing assault from one's mother or father are not well understood. There is some evidence that fathers' behavior in the family exerts a stronger effect than mothers' [sic] on children's antisocial behavior outside the family.

Therefore, in this study, the differential effects of physical abuse by the father and mother on children's sexual aggression are examined. From the standpoint of social learning theory, it is hypothesized that physical abuse by the father has greater effects on children's aggression than physical abuse by the mother. Physical abuse by people other than parents should not have effects as great as those due to the father because people other than parents are not as close to children as parents and, therefore, will not exert as strong an influence on them.

Furthermore, in addition to the direct path from physical abuse history to adolescents' sexual aggression, it is reasonable to suspect that an indirect causal path exists, leading from physical abuse to adolescents' sexual aggression, which is mediated by the decrease in adolescents' bonding to parents.

Although there has been no previous research directly examining the relationship between physical abuse by parents and subsequent change in children's bonding to the abusive parents, the increased hostility of children toward the abusive parents following victimization may result in the decrease of emotional bonding to the abusive parents. (The causal path between the lack of adolescents' bonding to parents and their sexual aggression is examined later.)

Sexual Abuse History. As in the case of physical abuse, there are a number of authors who argue that sexual abuse experiences may increase the likelihood of sexual deviancy in later life. For example, Johnson (1988) found that 49% of 47 children who molested other children had been sexually abused prior to their first deviant sexual behaviors. However, most empirical research on child sexual abuse has been plagued by the same methodologic problems that have affected research on child physical abuse: small clinical samples, lack of control groups, lack of controls for confounding effects, and reliance on correlational studies (see Beitchman *et al.*, 1991; Widom, 1989).

Further, as in the case of research in child physical abuse, the relationship between the abuser and the victim has not been adequately considered. While there is some research indicating that the symptoms of female victims of child sexual abuse are more severe when their abusers are father figures, there has been no empirical research examining the effects of the relationship between the abuser and male victims of child sexual abuse. Male children are more likely to be sexually abused by non-family members than female victims. Therefore, empirical findings obtained on female victims may not be generalizable to male victims.

There are, however, some clues from prior research that can be used to guide research hypotheses regarding male victims. Rogers and Terry (1984) reported, based on their clinical observations, that male victims sexually abused by male abusers exhibit unique behavioral changes: (1) confusion and anxiety over sexual identity, (2) inappropriate attempts to reassert masculinity, and (3) recapitulation of the victimizing experience. Because of these characteristics, male victims may attempt to deal with their victimization, and to regain a sense of mastery, by overidentifying with an abuser and modeling his deviant behavior. Therefore, it is necessary to examine the differential effects of sexual abuse by males or females on the sexual aggression of male victims. It is hypothesized that male juveniles who have been sexually abused by males are more sexually aggressive than male juveniles who have no history of sexual abuse. In contrast, juveniles who have been sexually abused by females are not hypothesized to be more sexually aggressive than nonabused juveniles because their experiences of sexual victimization may not have caused confusion over their male sexual identity and therefore they do not need to reassert masculinity by becoming sexually aggressive. An alternative, rival hypothesis is that sexual abuse experiences just sexualize victims and therefore there are no differential effects of sexual abuse on male victims depending on the gender of their abuser.

Bonding to Parents. Given the prior hypotheses that perceived parental deviance decreases children's bonding to the abusive parent, this section

explores the causal path from the lack of child-parent bonding to children's aggression. There has been no research directly examining the causal relationship between child-parent bonding and children's sexual aggression. According to social control theory (Hirschi, 1969), juveniles who feel emotional attachment to their parents are less likely to engage in socially deviant behaviors. Therefore, adolescents who have strong bonding to their parents may be less likely to engage in deviant sexual aggression. Furthermore, recent longitudinal research on victims of physical and sexual abuse have found that victims who have strong emotional support from non-abusive family members are less likely to exhibit severe pathology (Peters, 1988). Although most of the subjects in these studies were females, some clinical observations imply that emotional support of parents is important in alleviating the detrimental effects of sexual abuse on male victims as well (Rogers & Terry, 1984).

In addition, the differential effects of children's bonding to their father or mother should be examined because research has shown that maternal warmth is particularly important in preventing severe postabuse symptoms (Peters, 1988). In one longitudinal study on juvenile delinquents, lack of maternal warmth predicted subsequent recidivism of delinquents, while paternal warmth did not. However, other studies found paternal support to be negatively related to delinquency (e.g., Jensen, 1972). Therefore, it might be of importance to examine the differential effects of children's

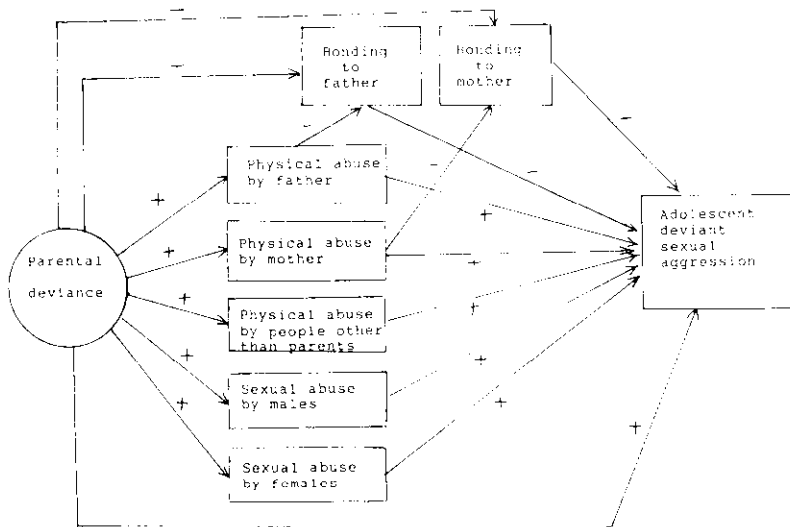


Fig. 1. Theoretical model of the etiology of adolescent sexual aggression.

bonding to father as opposed to mother, although we can make no specific hypotheses in this regard.

Research Hypotheses

Figure 1 presents the proposed causal model of adolescent sexual aggression that is tested in this study. The specific research hypotheses in the model are summarized as follows.

- (1) Perceived parental deviance causes children's sexual aggression directly (or through factors unspecified in this study).
- (2) Perceived parental deviance leads to a lack of children's bonding to their parents.
- (3) Perceived parental deviance leads to physical abuse of children.
- (4) Perceived parental deviance leads to sexual abuse of children.
- (5) Physical abuse increases children's deviant sexual aggression. Physical abuse by the father is expected to have greater effects on children's sexual aggression than physical abuse by the mother or people other than the parents.
- (6) Physical abuse by the parent decreases bonding between the abusive parent and the child.
- (7) Sexual abuse increases children's deviant sexual aggression. Sexual abuse by a male abuser is expected to have greater effects on children's sexual aggression than sexual abuse by a female abuser.
- (8) Children's bonding to parents decreases children's deviant sexual aggression. Further, there may be differential effects on children's sexual aggression depending on bonding to father or mother.

METHOD

Subjects

One hundred seventeen adolescent males (mean age, 16 years; range, 12–19 years) who had been charged with or convicted of a sexual offense participated in this study. Sixty-four percent were black ($n = 75$), 22% were Hispanic ($n = 26$), and 14% were Caucasian ($n = 16$). All subjects were referred from either criminal justice or social service agencies to the Sexual Behavior Clinic (SBC), an outpatient evaluation and treatment clinic for sexual offenders in New York City. In clinical interviews, all

subjects were diagnosed as nonpsychotic and able to give informed consent.

Procedure

An informed consent form was presented to each subject and his parent(s). No subject was allowed to participate unless both he and his parent(s) signed this form. Following consent, each subject was interviewed by a psychologist using a structured clinical interview. This interview focused on demographic characteristics, sexual offense, and history of abuse. Subjects also completed a battery of paper-and-pencil tests which included the Adolescent Perception Survey (APS), which measures how subjects feel about their family members and other people, and how they feel about sexual and nonsexual deviant behaviors.

Measures

The proposed model included 16 measured variables and one latent factor. Of the 16 manifest variables, 8 were used as indicators of the latent construct.

Perceived Parental Deviance. The APS includes items asking for subjects' perceptions of their parents' attitudes toward sexual and nonsexual deviant behaviors. Seventeen deviant behaviors (11 sexual and 6 nonsexual) were listed in the questionnaire, and for each behavior the subjects were asked, "How wrong or shameful do your parents feel this is?" The subjects answered these questions by checking one of the following choices: 1 = very wrong, 2 = a little wrong, or 3 = not wrong. Of the total 17 deviant behaviors, 5 sexually deviant behaviors and 3 nonsexually violent behaviors were selected to measure perceived parental deviant attitudes toward sexual aggression. The five sexually deviant behaviors were (1) raping or forcing yourself on someone sexually, (2) having a sexual experience with someone at least 5 years younger than you, (3) having a sexual experience with someone 2 to 4 years younger than you, (4) rubbing someone's body in a subway/bus/crowd to get aroused sexually, and (5) getting sexually aroused by hurting or being hurt by someone. The other six sexually deviant behaviors were deleted from this analysis because they were *nonviolent* sexual behaviors such as peeping and fetishes. The three nonsexual violent behaviors selected were murder, robbery or burglary, and battery (beating someone up).

Physical Abuse History. In the clinical interview, the subjects were asked if they recalled being physically abused when they were children. If they answered yes, they were asked who the abuser was and how many

times the abuse happened. The frequency of physical abuse was calculated separately when the abuser was the mother, the father, or an individual other than a parent.

Sexual Abuse History. In the clinical interview, the subjects were asked if they recalled being sexually abused when they were children. If they answered yes, they were asked who the abuser was and what kind of coercion the abuser used. The severity of sexual abuse was rated separately for female abusers and male abusers according to the following scale: 0 = no sexual abuse, 1 = sexually abused without coercion, 2 = sexually abused with verbal coercion, 3 = sexually abused with physical coercion, and 4 = sexually abused with excessive physical force.

Bonding to Parents. The APS includes items asking the subject, "How important are each of the following people to you?" In these items, family members, teachers, friends, and others are listed. Since this study compares the effects of bonding to father and to mother, the following two items were utilized: (1) bonding to mother (stepmother or guardian) and (2) bonding to father (stepfather or guardian). For each of the two items, the bonding was rated according to the following scale: 1 = not important, 2 = slightly important, and 3 = very important.

One subject answered that he did not have a mother (stepmother or guardian) and seven subjects answered that they did not have a father (stepfather or guardian). In these cases, each was given the average score of the other subjects. This approach was used because not having a father or mother is not the same as not bonding to the existing father or mother.

Deviant Sexual Aggression Score. During the clinical interview, the interviewers probed for details of subjects' past sexual offenses. For each victim, the following information was recorded: sex of victim, type of sexual offense committed, number of acts committed against the victim, and highest aggression rating. For the highest aggression rating, the subject's aggressiveness or coerciveness in committing the sexual offense was measured according to the following scale: 0 = none, 1 = verbal, 2 = threat of physical force, 3 = physical force, 4 = threat of weapon, 5 = use of weapon, and 6 = excessive physical force. Then this score was multiplied by the number of acts against each victim and sums of aggression scores of all victims were calculated for each subject.

Analytic Strategy

It seems likely that age and race of the subjects have confounding effects on the variables in the proposed model. The longitudinal research in criminology has consistently revealed that 15–17 year olds have the high-

est reported offending rate regardless of individual differences in propensity to commit crimes (Gottfredson & Hirschi, 1990, Chap. 6). Further, African Americans have had a higher offending rate than other races in almost all categories of offense (Gottfredson & Hirschi, 1990). Therefore, all the items which comprise the measures used in this analysis were regressed on age and race (a class variable) and the residuals of each item were used in the subsequent analysis. Then, EQS, a structural equation modeling program, was used to test the goodness of fit of the total model and the validity of each of the research hypotheses (Bentler, 1989). In EQS, generalized least squares (GLS), the method of estimation, was used.

RESULTS

Before examining the results of EQS, basic characteristics of the observed variables used in the model should be reviewed. Table I provides the mean, standard deviation, and range for each of the eight variables used as the indicators of perceived parental deviance (V1-V8). Since roughly 60-80% of the subjects answered that their parents felt the listed behavior was very wrong, their mean scores are between 1.38 and 1.62. Table II presents the mean and standard deviation for the frequency of each of the three types of physical abuse (V9-V11). Physical abuse by the mother had the highest mean frequency score (10.36), followed by physical abuse by the father (7.72). It may be more meaningful to calculate the mean frequency of physical abuse by eliminating the subjects who did not experience each type of physical abuse. Table III provides those scores for each type of abuse. Seventeen subjects experienced physical abuse by their mother an average of 71 times, while 18 subjects experienced physical abuse

Table I. Juveniles' Perceptions of Perceived Parental Deviance

Parental attitude	Mean	SD	Range
V1. Raping or forcing yourself on someone sexually	1.39	0.76	1-3
V2. Sexual experience with someone at least 5 years younger	1.38	0.72	1-3
V3. Sexual experience with someone 2 to 4 years younger	1.54	0.81	1-3
V4. Rubbing someone's body in a subway/bus/crowd to get aroused sexually	1.61	0.85	1-3
V5. Getting sexually aroused by hurting or being hurt by someone	1.62	0.87	1-3
V6. Beating someone up	1.60	0.76	1-3
V7. Robbery and burglary	1.46	0.80	1-3
V8. Murder	1.51	0.84	1-3

Table II. Frequency of Physical Abuse of Juveniles

Variable	Mean	SD
V9. Physical abuse by father	7.73	23.62
V10. Physical abuse by mother	10.36	29.20
V11. Physical abuse by others	1.89	10.84

Table III. Frequency of Physical Abuse of Juveniles Based on Subjects Who Experienced Each Type of Abuse

Variable	No. of subjects	Mean	SD
V9. Physical abuse by father	18	50.22	39.33
V10. Physical abuse by mother	17	71.31	39.52
V11. Physical abuse by others	7	31.67	34.26

Table IV. Factor Structure of the Measurement Model of Perceived Parental Deviance

Variable	Standardized factor loading
V1. Raping or forcing yourself on someone sexually	0.82
V2. Sexual experience with someone at least 5 years younger	0.75
V3. Sexual experience with someone 2 to 4 years younger	0.75
V4. Rubbing someone's body in a subway/bus/crowd to get aroused sexually	0.91
V5. Getting sexually aroused by hurting or being hurt by someone	0.90
V6. Beating someone up	0.41
V7. Robbery and burglary	0.87
V8. Murder	0.83

by their father an average of 50 times and 7 subjects experienced physical abuse by people other than parents an average of 32 times (people other than parents included in this sample were one brother, one grandfather, two aunts, two nonrelative adult male, and one nonrelative male child). These differences approached statistical significance [$F(2, 39) = 2.92, p = .066$]. Thus, it appeared that physical abuse tended to take place most repeatedly by the mother, followed by physical abuse by the father.

As for the items related to the coerciveness of the prior sexual abuse of the juveniles (V12 and V13), the number of subjects who experienced

each type of sexual abuse was small (sexual abuse by males, 13; sexual abuse by females, 10), and therefore their mean coerciveness score based on the total sample was very low: sexual abuse by males, 0.29 (SD = 0.86; range, 0-4); and sexual abuse by females, 0.13 (SD = 0.46; range, 0-3). The 13 male abusers included 3 uncles, 1 other male relative, 4 nonrelative adult males, and 5 nonrelative child males, whereas the 10 female abusers included 1 sister, 1 other female relative, and 8 nonrelative adult females. That is, most of the sexual abuse of these subjects was committed by non-family members. When the mean scores of each of these items were calculated by eliminating the subjects who did not experience each type of sexual abuse, they were as follows: sexual abuse by males, 2.62 (SD = 0.77; range, 0-4); and sexual abuse by females, 1.50 (SD = 0.71; range, 0-3). Sexual abuse committed by males was therefore more coercive than that committed by females [$t(21) = 3.57, p = .002$].

On the two items related to adolescents' bonding to parents (V14 and V15), 93% of the subjects answered that the mother (stepmother or guardian) was "very important" to them and therefore the mean score of the item addressing bonding to the mother was 2.92 (SD = 0.33; range, 1-3). In contrast, since 64% of the subjects answered that the father was "very important," the mean score of the item addressing bonding to the father was 2.57 (SD = 0.66; range, 1-3).

Finally, the scores of deviant sexual aggression by the adolescents (V16) resulted in a mean of 7.69, a SD of 32.32, and a range of 0 to 312. Actually, 48.3% of the subjects had 0 as their sexual aggression score, indicating that their committed sexual offenses did not contain aggressive elements. The sexual aggression scores of the rest of the subjects ranged from 1 to 62 except for two subjects whose scores were 131 and 312.

The GLS results indicate that the proposed model had a good fit with the actual data ($\chi^2 = 109.596, df = 95, p = .145$; normed fit index = .983; nonnormed fit index = .997; comparative fit index = .998). In the model, deviant sexual aggression by adolescents accounted for 30.1% of the variance.

As for perceived parental deviance, the measurement model of the single factor seems appropriate. As indicated in Table IV, all eight items had statistically significant loadings on the latent factor. The measurement model of the two factors comprising sexual deviance (five items) and non-sexual violent tendency (three items) showed that the two factors were highly correlated ($r = .95$), showing no discriminant validity between these constructs. Therefore, a single-factor model is considered to be more appropriate.

Turning our attention to each of the research hypotheses, Fig. 2 presents the results of the path model. In Fig. 2, solid lines indicate statistically

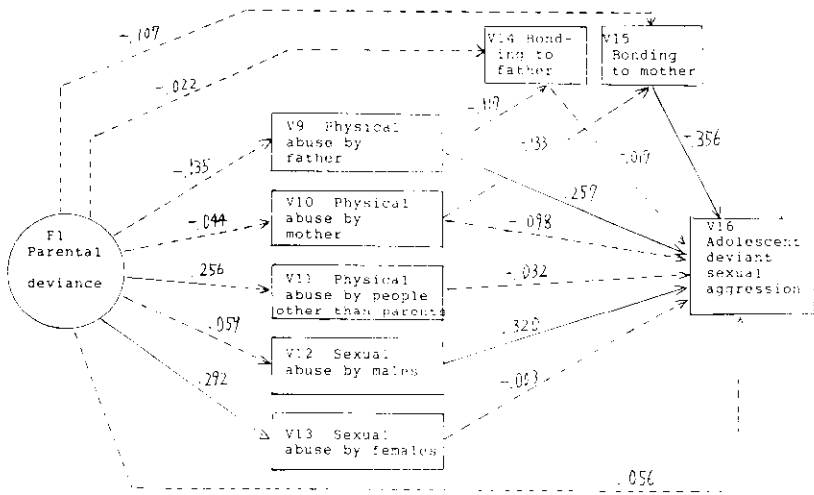


Fig. 2. Results of the path model.

significant paths, while dashed lines indicate nonsignificant paths. On each line, standardized regression scores are listed. Regarding the paths between parental deviance and the other variables, only two were statistically significant: Perceived parental deviance increases the probability of physical abuse of the child by people other than parents ($t = 2.410$, $df = 116$, $p < .05$) and increases the probability of sexual abuse of the child by females ($t = 2.650$, $df = 116$, $p < .01$). In contrast, perceived parental deviance does not increase the probability of physical abuse by the father or mother and sexual abuse by males. Further, perceived parental deviance does not affect adolescents' bonding to parents and their deviant sexual aggression directly. As for the paths between physical abuse and bonding to the parent, neither was statistically significant. Therefore, the hypothesis that physical abuse decreases adolescents' bonding to the perpetrator of abuse was not confirmed. With regard to the paths between physical abuse and deviant sexual aggression, the path from physical abuse by father to sexual aggression was statistically significant ($t = 3.070$, $df = 116$, $p < .01$). The paths from other types of physical abuse to adolescents' sexual aggression were not significant. As for the paths between sexual abuse history and sexual aggression by adolescents, the path from sexual abuse by males to sexual aggression by the adolescents was significant ($t = 3.833$, $df = 116$, $p < .01$). The path from sexual abuse by females to sexual aggression by adolescents was not significant. With regard to the paths between adolescents'

bonding to parents and sexual aggression by adolescents, the path from bonding to mother to sexual aggression by juveniles was significant ($t = -4.132$, $df = 116$, $p < .01$). In contrast, the path between adolescents' bonding to father and sexual aggression was not statistically significant.

DISCUSSION

This study sought to present and test a theoretical model of the etiology of deviant sexual aggression by adolescents. The model was not an integrated theoretical model embracing all factors which might be related to deviant sexual aggression by adolescents; rather, it focused on several family factors that previous theoretical and empirical work in related fields suggested might be relevant. At the present stage of scholarly developments in this field, it seemed appropriate to begin with such a middle-range model.

The data in this study were basically cross sectional and retrospective and, as such, were plagued by the same methodologic problems as previous research (Widom, 1989). In this sense, the present study has limitations in establishing the causal relationships among variables. However, this study applied structural equation modeling to test the model and therefore the estimation of causal relationships among variables was theoretically possible.

The results of the structural equation modeling indicated that the proposed model had a good fit with the actual data. However, when looking at the results of the specific research hypotheses in the model, only some of them were confirmed.

Only two paths were found to be statistically significant: Deviant parents were more likely to expose their children to opportunities to be physically abused by people other than themselves and sexually abused by female abusers. Further, neither physical abuse by people other than parents nor sexual abuse by females was significantly related to children's sexual aggression. Thus perceived parental deviance did not make a significant contribution to children's sexual aggression either directly or indirectly. This finding is contrary to conventional beliefs about the intergenerational transmission of violence.

How can this be explained? One possible explanation is that the measure of parental deviance used in this study was not appropriate. This measure was based on the adolescents' perception. Juvenile sex offenders may not be able to judge accurately whether their parents are socially deviant because they themselves are deviant. Also, being charged with sexual offenses might distort their judgment. Furthermore, the measure of parental deviance in this study did not deal with the deviance of the father and

mother separately. It was possible that, in any individual case, only one of the parents was socially deviant. In that case, the subjects' answers to the measure in this study might not have been reliable. Future research should use more sophisticated measures of parental deviance. In addition, in structural equation modeling, it is possible to eliminate more errors by utilizing measures from more than one source (e.g., official record, self-report of parents, perception of adolescents, and direct behavioral observation of parents). Further, the structure of parental deviance should be examined. In this study, neither parental sexual deviance nor violent criminality was differentiated empirically, supporting the thrust of the Gottfredson and Hirschi (1990) theory. Yet the use of different measures may result in the differentiation of sexual deviance and violent criminality.

Another explanation of these results is that parents who were either violent or sexually deviant toward their family members were not necessarily violent or sexually deviant outside the family. Although Hotling and Straus (1989) found a statistically significant relationship between intrafamilial and extrafamilial violence, Emery (1989, p. 322), in summarizing the relevant research, concluded that "the psychopathological model does not apply to the great majority of abusive parents." Rather, as correlates of child abuse, Emery emphasized situational stress and cognitive factors such as limited knowledge of childrearing, lower tolerance for common demands, and misattributions regarding children's motivations for misbehaving. Hence, in future research, the effects of situational and cognitive factors in the family should be explored.

With regard to the hypotheses related to the causal paths beginning with physical abuse history, as expected, physical abuse by the father was more powerful in causing adolescents' sexual aggression than physical abuse by the mother or by people other than parents. Indeed, the paths from physical abuse by the mother or others to children's sexual aggression were not statistically significant. Further, physical abuse by the mother was found to be more repetitious than other types of physical abuse, although the differences did not reach statistical significance. Therefore, the differential effect of physical abuse by the father on children's sexual aggression cannot be explained by its severity. Rather, this result fits best with explanations from a social learning perspective, particularly "gender sex role socialization" (Fagan and Wexler, 1987).

As for the paths from physical abuse to children's bonding to the abusive parent, even though either path (mother or father) reflected negative correlations between physical abuse and bonding, neither was statistically significant. However, the measure of bonding may not have been appropriate since it was based on a single item and hence was more likely to be influenced by errors and result in the attenuation of actual correla-

tions among variables. Therefore, in future research, more than one item, or preferably the latent measurement model, should be used to minimize the effects of errors. Another possibility is that the relationship between physical abuse and parent-child bonding is bidirectional (in other words, reciprocal) and further influenced by factors unspecified in this study. In future studies, more complex interactions within the family should be examined.

The results regarding the relationship between sexual abuse and children's sexual aggression favor the social learning explanation rather than the sexualizing effects of sexual abuse explanation. Only the effect of sexual abuse by males significantly aggravated the level of sexual aggression in adolescents. Indeed, the differences in the coerciveness between sexual abuse by males and sexual abuse by females was statistically significant, meaning that sexual abuse by males was more coercive than sexual abuse by females. However, the differences in coerciveness do not account for the total lack of effect of physical abuse by females on adolescents' sexual aggression. Rather, as suggested by Rogers and Terry (1984), the social learning process initiated by confusion over sexual identity is a more reasonable explanation for the differential effect of sexual abuse by males. However, more research is necessary on this issue. For instance, the mediating role of sexual identity should be confirmed by including items directly measuring sexual identity.

These results tend to confirm the differential effects of children's bonding to their mother on their sexual aggression. This result has valuable practical implications. It implies that maternal support is definitely important in deterring the adverse effects of sexual victimization (Peters, 1988). Further, this result has theoretical implications as well, since it implies the existence of a causal mechanism which cannot be explained through a social learning perspective. The effects of the maternal role could be accounted for by attachment theory (Ainsworth, 1989) or social control theory (Hirschi, 1969), however. At any rate, the mother's emotional support may moderate the adverse effects of sexual abuse on a victim and may deter adolescents from engaging in deviant sexual aggression, whether or not they have a history of abuse.

Two final considerations are warranted. First, as Howling, Wodarski, Kurtz, Gaudin, and Herbst (1990) suggest, the causal relationship between child abuse and violent forms of delinquency may be a bidirectional, not a unidirectional one. In addition, the child-parent interaction may be a reciprocal causal process producing the child's deviant behaviors (Patterson *et al.*, 1989, 1992). Therefore, longitudinal research is necessary to explore the reciprocal effects of factors involved in the etiology of adolescents' sex-

ual aggression. A cross-sectional design is limited in its capacity to detect such a reciprocal process, even if the structural equation modeling is used.

Second, recent theoretical work on sexual aggression has suggested that sexual offenders are a heterogeneous group (e.g., Hall & Hirschman, 1991; Prentky & Knight, 1991; Simon, Sales, Kaszniak, & Kahn, 1992). Thus, there may be different paths leading to adolescents' sexual aggression. The results of the present study generally support two causal processes: a social learning process and a child-parent attachment, or social bonding, process. Further effort should be expended to integrate the different causal mechanisms to create a comprehensive theory of sexual aggression.

An Alternative Interpretation

A structural equation model is, by nature, a confirmatory model. A complementary approach to theory testing, however, is to review the results actually obtained and see whether they suggest any pattern other than that originally hypothesized. The post hoc generation of alternative hypotheses that were not explicitly tested in the model can contribute to further theory construction and refinement.

An alternative interpretation of these data is to view the behavioral development of juvenile sex offenders as a process of social modeling. From this perspective, it is reasonable to expect two things: (1) that male-typical sexual and aggressive behavior will be modeled primarily after that of any available male relatives, such as the father, and (2) that male-female affiliative behavior will be modeled primarily after close social relationships with female relatives, such as the mother. The ethological literature on sexual imprinting in animals generally supports this basic distinction. Furthermore, one would expect natural selection to shape the behavioral development of adaptive social and sexual strategies in this fashion. Agonistic sexual strategies used in intrasexual competition are best learned through interactions with other males; affiliative sexual strategies subject to intersexual (epigamic) selection are best learned through social interactions with females. The reverse would be clearly maladaptive. Sexual abuse by females, for example, would not be relevant for social modeling, as those behaviors would not be sexually appropriate to a developing male. Similarly, bonding to the father would not be relevant as a model for future heterosexual relationships.

This ethological perspective is consistent with the results obtained in the present study. Deviant patterns of sexual aggression were apparently modeled on those experienced during either physical abuse by the father

or sexual abuse by other males. Such patterns were nonetheless inhibited and partially suppressed by bonding to the mother. Presumably, normal bonding to the mother and other females served as a model for prosocial and affiliative sexual relationships subserving noncoercive sexual strategies. These alternative explanations are compelling in their simplicity. Furthermore, they suggest some positive reasons why developing children might be sensitive to some experiences and impervious to others. The literature on child resiliency offers ample evidence that children are often able to develop normally in spite of massive physical and psychological insult. It is equally clear, however, that certain critical experiences can be disproportionately influential in behavioral development. The only reasonable resolution of this paradox is that the developing child is not merely a passive receptacle of experience, but an active and selective processor of strategic information, possessing a certain degree of biologically prepared ability to sort adaptively relevant from nonrelevant stimuli. We believe that the theoretical insights provided by this alternative perspective will be valuable in future studies of child abuse.

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