# CRIMINAL PROPENSITY, DEVIANT SEXUAL INTERESTS AND CRIMINAL ACTIVITY OF SEXUAL AGGRESSORS AGAINST WOMEN: A COMPARISON OF EXPLANATORY MODELS[*]

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*Three hypotheses have been used to describe the male propensity for sexual aggression towards women: a general propensity to offend, a specific propensity to sexually offend and a combination of both. In this paper, using structural equation modeling, we compared the relative utility of these three hypotheses in explaining criminal activity in adulthood of sexual aggressors of women. In total, 209 adult males who were convicted of at least one sexual offence were included in the study. Results indicate that a propensity model emphasizing the role of an early and persistent general propensity to act in an antisocial manner*

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*during childhood and adolescence is most adequate to explain sexual aggressors' criminal activity. After controlling for the role of this propensity, a specific propensity characterized by high sexualization and deviant sexual interests explained only a modest proportion of variance of the sexual criminal activity.*

For various reasons, many criminologists have been reluctant to discuss sexual aggressors against women. This type of offender is usually studied by psychologists and psychiatrists who have been concerned by the heterogeneity characterizing them. By emphasizing the differences among aggressors of women, the attention of researchers within this field of study was drawn from developing an explanatory model of sexual aggression toward women (Knight and Sims-Knight, 2003). This study focuses on the developmental history of individuals and how it relates to their criminal activity. Two approaches have been pursued to explain the developmental history of sexual aggressors of women. The first approach emphasized excess and deficits in the domain of nonsexual behaviour and the second, excess and deficits in the sexual domain. Hence two pathways leading to sexual criminal activities have been proposed: the general and the specific pathway. A brief overview of both pathways and their related developmental factors follows.

## THE GENERAL PATHWAY

*Behaviour Problems.* Longitudinal studies have shown that early manifestation of behaviour problems during childhood is linked to violent offending in adulthood (LeBlanc and Loeber, 1998). Despite this observation, behaviour problems remain a neglected area of research on sexual offenders. It has been shown that the prevalence of such behaviour problems in samples of juvenile sexual aggressors is important (Kavoussi, Kaplan and Becker, 1988). Retrospective studies with juveniles (Kavoussi, Kaplan and Becker, 1988) and adults (Bard et al., 1987) have shown a higher prevalence of behaviour problems in sexual aggressors of women than in other types of sex-offenders. Moreover, in sexual aggressors of women, characteristics of behaviour problems are linked to an earlier age of onset of sexual assault (Prentky and Knight, 1993) and to a higher level of sexual coercion used during the offence (Knight and Sims-Knight, 2003). In a sample of university students, sexually coercive men reported more behavioural problems during childhood and adolescence than nonsexually coercive men (Lalumière and Quinsey, 1996). Similarly, a recent longitudinal study indicated that those who had shown early and extensive behavioural problems during childhood and adolescence were more often convicted of sexual and physical violence against women later in life (Moffitt, Caspi, Harrington and Milne, 2002). In sum, early

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behavioural problems seemed to be linked to the propensity to use violence in a sexual context.

*Delinquency and Criminal Behaviour*. Many researchers came to the conclusion that sexual aggression was just another expression of general criminality (Tedeschi and Felson, 1994). Undoubtedly, the prevalence of nonsexual criminal behaviour in sex offenders is important. According to a literature review, approximately 50 percent of adult sex offenders had a history of nonsexual delinquent behaviour, mostly for property crimes (Lussier, 2005). This statement has far-reaching implications. Such a conclusion may falsely give the impression that sexual aggression against women occurs in a random fashion. It also overestimates the risk of criminal activity progressing to sexual offending. In the birth cohort of the Copenhagen study, 0.2 percent of their offenders were arrested for rape by age 30 (Guttridge, Gabrielli, Mednick and Van Dusen, 1983). In the Montreal longitudinal study on the criminal activity of the wards of the court, the participation rate in sexual crime in young adulthood was 2 percent (LeBlanc and Fréchette, 1989). Hamparian, Schuster, Dinitz and Conrad (1978) showed that sexual crimes represented 13.5 percent of all violent arrests in their cohort of juvenile violent offenders. Thus, these numbers suggest that sexual offending tends to occur rarely in criminal careers. On the other hand, in two Philadelphia birth cohort studies, chronic offenders (that is, five or more arrests), which constituted about 7 percent of each their sample, accounted for more than 70 percent of all arrests for rape during adolescence (Tracy, Wolfgang and Figlio, 1990). Similar numbers were reported by the longitudinal study of Moffitt, Caspi, Harrington and Milne (2002) indicating that by age 26, 10 percent of their cohort was responsible for 62 percent of convictions of sexual and physical violence against women. It suggests then, that the risk of committing a sexual aggression increases with the frequency of general offending.

*Aggression and Hostility*. Psychodynamic (Groth, 1979), evolutionary psychology (Ellis, 1991) and sociocultural models (Sanday, 1981) have emphasized that sexual aggression is part of a tendency in men to control and dominate women. Quinsey (1984) suggested that sexual aggression was not part of a culture of violence directed specifically toward women, but part of a general culture of violence in which male bonding, toughness and interpersonal violence are reinforced. Quinsey (1984) went on to argue that such a link between aggression and rape should be expected since aggressive and sexual drives both share similar neurological structures. In that respect, Malamuth, Sockloskie, Koss and Tanaka (1991) showed that hostile masculinity was positively linked to sexual and nonsexual coercion of women in their sample of college students. Malamuth's results showed that the construct of hostile masculinity (that is, hostility toward women, adversarial sexual beliefs, attitudes supporting

coercive actions in general) was relatively independent of a general tendency to commit delinquent acts. Yet his measure of general delinquency, based on delinquent peer association and running away, may not have captured sufficient behavioural components of the general deviance spectrum. In an attempt to replicate these results in a sample of juvenile sex offenders, Johnson and Knight (2000) found that a measure of hypermasculinity was indirectly linked to a high level of coercion through the presence of misogynist fantasies. Congruent with Quinsey's hypothesis, peer aggression during adolescence was an important precursor of hypermasculinity. Using retrospective data, Knight and Sims-Knight (2003) showed that a construct including measures of juvenile aggression and antisociality was related to the level of coercion used in a sexual context in a sample of men from the community. Therefore, both theoretical writings and empirical findings suggest that sexual and nonsexual violence tend to be related.

## THE SPECIFIC PATHWAY

*Use of Pornography*. A first line of research within the sexual pathway focused on the use of pornographic material and its role in sexual aggression toward women. Social learning models (Laws and Marshall, 1990) stipulate that pornography could be a risk factor leading to sexual coercion due to its depiction of women in a manner which promotes attitudes supporting sexual aggression toward women (Burt, 1980). Reviews of the scientific literature have provided mixed results and much debate as to the interpretation of the relationship between exposure to pornographic material and men's attitudes and behaviour toward women (Fisher and Grenier, 1994; Malamuth, Addison and Koss, 2000). However, results of meta-analyses (Allen, D'Alessio and Brezgel, 1995; Allen, D'Alessio and Emmers-Sommer, 2000) suggest a link between porno-graphic material and men's attitudes toward women. These studies showed that, while nudity alone is inversely related to aggressive behaviour against women in a laboratory setting (that is, delivering electric shock, aversive noise and the like), exposure to nonviolent and violent pornography is positively related (Allen, D'Alessio and Brezgal, 1995). However, the extent of the generalization of this link outside laboratory settings is not straightforward. Yet it has been shown that if sex offenders do not differ from a control group as to the age of onset and frequency of pornography consumption, they do differ as to the manifestation of more sexual acting out (that is, masturbation, consensual sex, coercive sex, criminal sexual behaviour) after using pornographic material (Allen, D'Alessio and Emmers-Somer, 2000). This result might indicate that, as a group, sex offenders could be characterized not so much by their pornography consumption, but by their inability to control their sexual urges.

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*Impersonal Sex and Mating Effort.* A second line of research came mostly from studies investigating the sexual lifestyle of sexually coercive men, usually with samples of college students. Some researchers described sexual coercion as a by-product of the evolution history (Thornhill and Palmer, 2000). According to evolutionary psychologists, men can follow two types of strategy to increase their reproductive success. They either follow a long-term relationship with their partner involving high investment in few offspring, or they pursue a short-term mating effort by maximizing the number of sexual partners, having a high quantity of offspring and investing little in each (Malamuth, 1998). To maximize their reproductive success, men pursuing a short-term mating effort are more likely to revert to coercion following episodic difficulty to find a sexual partner (Quinsey and Lalumière, 1995). Congruent with the hypothesis, Lalumière and Quinsey (1996) observed that sexually coercive university students tended to report higher scores on a mating effort measure, referring to a more precocious sexual history, a high number of sexual partners and a preference for partner variety. They also note that measures of mating effort are positively correlated with measures of antisocial tendency, results that were also observed in a prospective study (LeBlanc and Bouthillier, 2003). Similarly, Malamuth (1998) has shown that men characterized by an attraction to promiscuous and impersonal sexual behaviour were more likely to use coercion in a sexual context, especially if they showed a high level of hostility.

*Sexual Drive, Compulsivity and Preoccupation.* Ellis (1991) argued that sexually coercive men differed as to higher sexual drive due to neuro-hormonal factors. If empirical evidence supporting the link between biological impairment and a proclivity to rape remains unclear (Hucker and Bain, 1990; Prentky, 1997), biological differences certainly do not help the socialisation process to develop adequate personal constraints over the sexual drive (Marshall and Barbaree, 1990). Puberty becomes a critical period since the sex drive surges dramatically, becoming more frequent and intense (Hucker and Bain, 1990). The sexual drive refers to the strength and frequency of sexual behaviour or the total sexual outlet (Kafka, 1997). Knight (1999) found a positive but nonsignificant correlation between sexual drive and measures of juvenile and adult antisocial behaviour. A high sexual drive was related, however, to a higher level of anger and expressive aggression. Furthermore, a high sexual drive tended to be associated with measures of sexual deviance, such as sadism and paraphilias. These results are congruent with reports indicating that sexual aggressors of women tend not to restrict themselves to one type of deviant sexual behaviour (Abel and Rouleau, 1990). More recently, Knight and Sims-Knight (2003) showed the overlapping characteristics of their measure of sexual drive with measures of sexual compulsivity (that is,

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having to combat persistent and intrusive sexual urges) and sexual preoccupation with deviant and nondeviant thoughts and fantasies. These three features, sexual drive, compulsivity, and preoccupation are related to the level of sexual coercion (that is, kissing, petting, oral sex, intercourse and the like) (Knight and Sims-Knight, 2003).

   *Deviant Sexual Interests.* It has been hypothesized that behavioural antecedents of the sexual pathway could lead to a specific motivation to sexually offend against women. Behavioural theorists have described a classical conditioning process in which deviant sexual fantasy and masturbation to those fantasies can lead to deviant sexual preferences (Abel, Barlow, Blanchard and Guild, 1977). In laboratory settings, many empirical investigations have been undertaken to examine the sexual preferences of sexual aggressors by means of a penile plethysmograph, that is, the recording of sexual arousal during the presentation of deviant and nondeviant sexual stimuli (Proulx, 1989). These studies have yielded four main findings. First is that, as a group, sex offenders are more sexually aroused by rape stimuli than nonsex offenders, results which were observed in both clinical (Lalumière and Quinsey, 1994) and nonclinical settings (Lohr, Adams and Davis, 1997). Second is that differences between sex offenders and controls as to their sexual arousal to deviant stimuli are accentuated by using explicit violent rape stimuli (Proulx, Aubut, McKibben, Côté, 1994). Third is that sexual arousal to stimuli depicting consensual sex does not permit the distinction between sex offenders and nonsex offenders (Earls and Proulx, 1987). Fourth is that although the proportion can vary from one study to another due to methodological issues,[1] about 25 percent of convicted sexual aggressors of women are equally or more sexually aroused by rape than by consenting sexual behaviour (Looman, 2000). Therefore, a general model of sexual aggression based on the assumption that all individuals who commit sex offences have a sexual preference for rape cannot be accepted. This observation, nevertheless, does not contradict the fact that sexual offenders' arousal patterns tend to be different from that of nonsexual offenders. The pattern observed is more congruent with a disinhibition model of sexual aggression (Barbaree, 1990). It cannot explain, however, why a restricted number of sexual offenders do have a sexual preference for rape.

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1.  One important methodological issue in determining the sexual preferences through a phallometric assessment is the stimuli set used, since the set chosen may be differentially sexually arousing (Lalumiere and Quinsey, 1994). In that regard, Looman (2000), using two stimuli sets found about the same proportion of sexual offenders of women with deviant sexual interests. Therefore, these results tend to refute the hypothesis that large differences observed across studies were attributable to stimuli sets used.

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## SUMMARY

Different behaviours have been described as being linked to the male propensity to sexually offend. There have been few attempts, however, to explain such a link. From the current state of knowledge, three models have been proposed suggesting that these behaviours are manifestations of a propensity to offend. First, it could be argued that a specific propensity explains the male tendency to engage in sexual crimes (Figure 1, Model 1). Early formulations of the sexual specific model of sexual aggression have put emphasis on exposure to deviant sexual models and sexual victimization. By means of classical conditioning and social learning mechanisms, these early experiences have been described as risk factors of deviant sexual fantasies. When paired repeatedly with orgasm through masturbation, these fantasies can lead to the development of deviant sexual preferences (Abel and Blanchard, 1974; Laws and Marshall, 1990). Abel has been a major advocate of this perspective, stating that sexual aggressors of women lack control over their sexuality, committing various sexually deviant acts and thus should be regarded as paraphiliacs (Abel and Rouleau, 1990). From a disinhibition perspective, it could be argued that exposure to deviant sexual models do not help individuals in developing sufficient self-control over their sexual drive. This lack of control over sexual drive presents specific behavioural manifestations characterizing the sexual pathway. Until recently interrelationships between various components within the sexual pathway have been virtually ignored (Knight, 1999). From this standpoint, the behavioural antecedents characterizing the sexual pathway are mere expressions of a specific propensity, that is, sexualization, which does not favor the inhibition of deviant sexual interests and in turn increases the risk of engaging in sexual crimes. According to our review of the literature, there is little evidence supporting such a model since there is considerable overlapping between behavioural manifestations of sexualization and general deviance. However, such a model needs to be empirically verified since numerous claims have been made highlighting the importance of developing a specific model to explain the propensity to commit a sexual crime.

A second model stipulates that various forms of criminal activity share a common cause (Gottfredson and Hirschi, 1990). This model aims to explain not a particular type of crime, but chronic offending. The model of Gottfredson and Hirschi (1990) suggests that one developmental trajectory can account for the various criminal activity patterns observed. They argue that offenders can be distinguished by a latent construct, low self-control, which reflects the propensity to commit a crime given the

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opportunity. Individuals with low self-control can be described as having difficulties resisting the immediate gratification that various criminal opportunities provide. The developmental background of these individuals has been characterized by early exposure to criminogenic models that did not allow them to develop sufficient control over their behaviour. Low self-control is relatively stable from early childhood as a result of an inadequate socialisation where parents did not supervise, recognize and efficiently punish their child's deviant behaviour. The development of internal constraints over one's behaviour is said to be even more difficult for those children not having developed an emotional bond with their parents. Therefore, those children having been exposed and victimized during their childhood are more likely to be characterized by a high propensity to commit a variety of deviant behaviours. Indeed, according to this general model, it could be argued that the same underlying tendency may be responsible for individuals not respecting authority figures, engaging in reckless behaviour, stealing and committing fraud, being hostile and violent toward others, using alcohol and drugs, as well the tendency to use pornography, and engaging in impersonal, compulsive and deviant sex (Figure 1, Model 2). This underlying tendency, general deviance, may also be reflected in the inability to inhibit their sexual arousal when exposed to sexually violent material. Thus, from this standpoint, the male propensity to engage in sexual crime is not part of a specific pathology within the domain of sexuality.

A third approach, combining the general and specific explanation of the male propensity to engage in sexual crimes, was proposed recently (Figure 1, Model 3). Knight and Sims-Knight (2003) suggested a disinhibition explanation of sexual deviance, in which antisocial tendencies and sexual victimization during childhood negatively affect the development of adequate control over sexual urges, thus exhibiting a high sexual outlet (that is, sexualization). Both antisocial tendencies and sexualization favor the emergence of aggressive sexual fantasies toward women, which in turn increase the level of coercion used during the sexual offence. This model is similar to that of Marshall and Barbaree (1990), which states that individuals need to develop sufficient self-control to inhibit inadequate expressions of sexuality and aggression. The socialisation process serves to help the child disentangle them by developing adequate personal constraints over aggression in a sexual context as well as inhibiting sexual arousal in the presence of aggression (Marshall and Barbaree, 1990). According to Barbaree (1990), "sexual aggression is more likely when cues of nonconsent and force fail to inhibit a man's arousal and motor behaviour, either because the man has failed to acquire this inhibitory process or because the inhibitory process has been somehow disrupted" (pp. 126–127). This process may prove even more difficult for children

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coming from criminogenic environment with attachment deficits who might have greater difficulty relating adequately to others. None of these three hypothetical developmental models has been put in relationship with criminal activity parameters. Consequently, in this paper, using structural equation modeling (SEM), we will compare the relative utility of the three propensity models to evaluate, which of the three better explains the criminal activity of sexual aggressors in adulthood.

## METHOD

### SUBJECTS

For the purpose of this study, all adult males convicted of a sexual offence who received a prison sentence of at least 2 years were recruited for a survey between April 1994 and June 2000 in the province of Quebec. The participation rate was high, 93 percent of the recruited subjects (n = 557) agreed to collaborate with the research team during this period. A total of 209 individuals having committed a sexual offence against an adult female (that is, at least 16 years old) were included in this study. At the time of the survey, all subjects were incarcerated at the Regional Reception Centre of Ste-Anne-des-Plaines, a maximum-security institution run by the Correctional Service of Canada. The average stay in this institution is about 6 weeks, permitting completion of correctional assessment procedures prior to the individual's transfer to an institution suited to his risk level and treatment needs. Subjects included in this study were mostly Caucasian (82.8 percent). On average, they were 33.5 years old (SD = 9.0) and serving a prison sentence of 4.7 years (SD = 3.4). The offences for which they were incarcerated at the time were:[2] sexual assault (66.0 percent), armed sexual assault (27.8 percent), sexual assault causing injuries (9.1 percent) and aggravated sexual assault (4.3 percent). On average, their criminal history revealed that these individuals were convicted on 5.4 occasions (SD = 4.3; range = 1–22). In fact, this sample is composed primarily of recidivists, 79.9 percent having received a prior sentence.

### PROCEDURES

Data used to create scales measuring childhood negative experiences and behavioural antecedents were collected during a semi-structured interview with each subject using the QIDS (St-Yves, Proulx and McKibben, 1994), a computerized questionnaire. Each subject was

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2.  Subjects can be in more than one category.

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interviewed only once by a member of the research team.[3] Police records were consulted to determine the criminal activity in adulthood. Subjects included in this study signed a consent form indicating that the information gathered would be used for research purposes only. Phallometric assessment was conducted as part of the correctional risk level and treatment needs assessment. Prior to conducting the assessment, each subject signed a consent form indicating that the results would also be used for research purposes.

MEASURES

NEGATIVE CHILDHOOD EXPERIENCES

Two constructs assessing negative experiences during childhood and adolescence (0–17 years old) were used in this study: a criminogenic environment and deviant sexual experiences.

*Criminogenic Models.* The criminogenic environment construct was rationally operationalized using two scales: exposure to criminogenic models and nonsexual victimization. The exposure to criminogenic models scale (alpha = .84) included eight items related to the precocity and extent of exposure to criminogenic models: physical violence (that is, having witnessed an act of aggression from one parent toward another); psychological violence (that is, having witnessed acts of denigration from one parent toward another); alcohol abuse (that is, having witnessed a parent intoxicated on several occasions). For each of these items, subjects were asked to provide their age at which the behaviour witnessed started. This scale also includes nonsexual criminality by the father (for example, charged for a violent crime; charged for a nonviolent crime). The nonsexual victimization scale (alpha = .88) included six items related to the precocity and extent of being a victim of psychological and physical violence from a parent. These items referred to the presence of victimization, age of onset and duration for both types of violence.

*Deviant Sexual Models.* In a similar fashion, the deviant sexual experiences construct was rationally operationalized using two scales: exposure to deviant sexual models and sexual victimization. The exposure to deviant sexual models scale (alpha = .74) was composed of seven items reflecting precocity and extent of exposure to: incest and sexual deviance

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3. It was not possible based on the data available to determine the test-retest reliability of our measures. Subjects who participated in the study granted access to their correctional files. It was thus possible to compare items collected during the semi-structured interview to those in the clinical files. In case of disagreement between both sources, data collected for research purposes were prioritized.

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(that is, having witnessed a family or another committing a sexual crime), sexual promiscuity (that is, having witnessed explicit and inappropriate sexual acts by family and nonfamily member), and sexual criminality (that is, a family member charged with a sexual crime). For the incest/sexual deviance and sexual promiscuity items, subjects were also asked about age of onset and duration of exposure. The sexual victimization scale (alpha = .76) included seven items measuring the precocity and extent of the subjects' sexual victimization, both within and outside the family environment. For both types of sexual victimization, subjects were asked age of onset, duration, and frequency of abuse (0 = never; 1 = once; 2 = two to five times; 3 = five to ten times; 4 = more than ten times). For the extrafamilial sexual abuse, subjects were asked about their relationship with the aggressor (0 = known; 1 = stranger).

THEORETICAL CONSTRUCTS

   *General Deviance.* Based on the empirical work of LeBlanc and Bouthillier (2003), we rationally constructed four scales representing the general deviance syndrome. These four scales included items related to childhood (0 to 12) and adolescence (ages 13 to 17) measured using a 3-point scale: 0 = did not commit the behaviour, 1 = committed the behaviour either in childhood or adolescence, 2 = committed the behaviour in both childhood and adolescence. These measures then take into account the precocity and persistence of general deviance. Most of the items are self-explanatory, but for others further details are provided. The authority-conflict scale (alpha = .70) included four items related to authority-defying behaviours at home and in school: being disruptive in class, running away from home, being rebellious against an authority figure, being short-tempered (for example, the tendency to lose temper and become angry easily). The reckless scale (alpha = .60) was composed of three items: alcohol abuse, substance abuse and dangerous behaviours (that is, put someone else's or their own health or security in jeopardy just for the fun of it). To determine alcohol and substance abuse, we used criteria of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994). The covert scale (alpha = .70) was composed of seven items related to concealing acts: repetitive and frequent lying, theft, selling drugs, burglary, plotting a property crime, fraud, and any other property crime. The overt scale (alpha = .74) was composed of seven items related to acts of nonsexual violence: cruelty against an animal, assault, threats against someone, armed robbery, theft using physical violence, using a weapon to deliberately harm someone and any other act of violence. The higher the score on each of the four scales, the more an individual has shown behaviour problems during childhood and adolescence.

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*Sexualization.* Following the work of Knight (1999), sixteen items representing the elements of sexualization were selected and entered into a principal component analysis. Three components were identified and used to create three scales: impersonal sex, sexual compulsivity and pornography. The impersonal sex scale (alpha = .71) consisted of three items: age at first sexual contact, age at first sexual intercourse and number of sexual partners (divided by age). Individuals scoring high on the scale of impersonal sex can be described as exhibiting a precocious sexuality with a high number of sexual partners. The sexual compulsivity scale (alpha = .72) included seven items: compulsive masturbation in adolescence; compulsive masturbation in adulthood; masturbating on a daily basis in adulthood; being overwhelmed by deviant sexual fantasies; being overwhelmed by nondeviant sexual fantasies; having deviant sexual fantasies one year prior to the sexual offence for which they were incarcerated; and paraphilias (for example, bestiality, fetishism and the like). The higher the score on this scale, the more an individual shows signs of sexual compulsivity. The pornography scale (alpha = .69) was composed of six items representing the use of pornographic magazines, pornographic movies, as well as frequenting strip joints for both adolescence and adulthood. An individual scoring high on this scale can be characterized as being a consumer of pornographic material. All the items for the sexual compulsivity and the pornography scales were dichotomized data (0 = absent; 1 = present).

*Confirmatory Factors Analyses of Behavioural Antecedents.* Before conducting SEM, we verified whether the behavioural antecedents referred to two distinct constructs: general deviance syndrome and sexualization. In the first analysis, the four scales of general deviance and the three scales of sexualization were forced into one latent variable (that is, general deviance). Results indicated a poor fit of the data $[X^2(14) = 52.09, p < .001, CFI = .84, RMSEA = .13]$. In other words, one single factor could not account for all the sexual and antisocial behaviours. Next, we investigated whether the antisocial and sexual behavioural antecedents could be better explained by two distinct latent constructs (General deviance, Sexualization). Results showed a good fit of the data $[X^2(13) = 26.43, p < .01, CFI = .95, RMSEA = .08]$. Comparatively speaking, the second model presented a better fit of the data $[X^2(1) = 25.67; p < .001]$. In other words, two clusters of variables best represent behavioural antecedents: general deviance (that is, authority-conflict, reckless, overt and covert) and sexualization (that is, pornography, impersonal sex and sexual compulsivity). To present a potentially more parsimonious model, post hoc modifications (LaGrange Multiplier Test) were undertaken that suggested the addition of a path between the sexualization factor and the

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scale of reckless behaviour. After such modifications, results showed a good fit of the data [$X^2(12) = 19.97$, $p < .07$, CFI = .97, RMSEA = .05], proving to be a better solution than the second model [$X^2(1) = 5.70$; $p < .05$].

*Deviant Sexual Interests.* For each subject, sexual interests were evaluated using phallometric assessment. The stimuli used were French translations of the Abel, Barlow, Blanchard and Guild (1977) audiotaped recordings and can be categorized five ways: sexual intercourse with a consenting adult female; sexual aggression with physical violence against an adult female (rape); sexual aggression with humiliation against an adult female (rape-humiliation) (Proulx, Aubut, McKibbon and Côté, 1994); violence against an adult female in a nonsexual context (nonsexual violence); and nonsexual, nonviolent control stimuli. Two stimuli for each category were presented. The discriminant validity of the French translations was shown (Proulx, Aubut, McKibben and Côté, 1994). Moreover, a semantic tracking task[4] was used to prevent voluntary control of penile responses (Proulx, Côté and Achille, 1993). Phallometric assessment was introduced after the study began. For this reason, phallometric data were available for only 142 of the 209 subjects (68 percent) included in this study. There were no statistical differences as to variables studied between subjects for whom we had phallometric data and those for whom we did not. During the presentation of each stimulus, changes in the penile circumference were recorded in millimeters using Preftest (Limestone Technologies) for each subject. Of the 142 subjects who completed the assessment, twenty-three (23 percent) were excluded because they did not show a minimum of at least one penile increase of more than 3 mm of circumference, which corresponds to about 10 percent of a full erection. These exclusions[5] were necessary because these penile responses were considered too low to be valid measures of sexual interests (Kuban, Barbaree and Blanchard, 1999). For the remaining 109 subjects, the results were used to calculate three indexes of deviant sexual interests:

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4.  The semantic tracking task consists of pushing a button with the right hand when the content of the stimulus is sexual, another button with the left hand when the content is violent and both buttons when the content is sexual and violent. These tasks force men being assessed to pay attention to the sexual and violent content of the stimuli.
5.  It has been observed previously that older individuals are less sexually aroused during the assessment (Castonguay, Proulx, Aubut, McKibben and Campbell, 1993). Our study was no exception to this trend: low responders tend to be older than those who showed at least one sexual arousal superior to 3mm [$t(140) = 2.22$, $p = .027$]. After controlling for the age factor, no other statistical differences were observed between subjects included and those excluded as to the other variables under study.

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rape, rape-humiliation and nonsexual violence. Each index was calculated by taking the highest arousal for each of the three deviant stimuli and dividing it by the highest arousal to the consenting adult female stimuli.[6] Consequently, the higher the score on each index, the more an individual is sexually aroused by different deviant stimuli as opposed to nondeviant stimuli.[7]

CRIMINAL ACTIVITY IN ADULTHOOD

*Sexual Criminal Activity.* Two parameters were used to measure the sexual criminal activity of sexual aggressors of women in adulthood: age of onset and frequency. Age of onset and frequency of sexual crimes have both been associated with sexual recidivism (Hanson and Bussière, 1998). For sexual aggressors of women, these two criminal activity parameters are inversely related, indicating that individuals starting earlier tend to commit more sexual crimes (Lussier, LeBlanc and Proulx, 2005). In this study, age of onset refers to the first charge laid in adulthood (that is, age 18 and over). In this sample, the mean age of onset for a sexual crime in adulthood was 30.03 (SD = 8.12). Frequency refers to the number of charges for a sexual crime. On average, subjects were charged for 2.58 sexual crimes (SD = 2.48). The frequency of sexual charges was divided by the length of the criminal career in adulthood (Mean = 13.58; SD = 8.17) for which we subtracted the time spent incarcerated. Considering that the frequency of sexual crime was skewed, we performed a log transformation.

*Nonsexual Criminal Activity.* To measure the nonsexual criminal activity in adulthood, we used two parameters: age of onset and frequency. In this sample, the mean age of onset for a nonsexual crime was 23.64 (SD = 7.17). Among our sample of 209 subjects, only nineteen had never been charged for a nonsexual crime. Consequently, we replaced the truncated data by the actual age to which we added 1 year for these subjects. The mean frequency of nonsexual crime was 17.13 (SD = 21.66). The frequency of nonsexual charges was divided by the length of the criminal career, from which we subtracted the time spent incarcerated and proceeded to a log transformation.

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6.  To calculate our three scales of deviant sexual interests, we used raw data of sexual arousal from which we calculated ratio scores which were highly related to standardized scores. Considering this and the fact that ratios are easier to interpret than standardized data, we decided to report ratio scores.

7.  Note that in this study, measures of deviant sexual interests will be used only as independent variables since there is no basis to determine the point during life-course in which sexual preferences establish themselves. In other words, if one could argue that sexual interests cause sexual crime in adulthood, it may also be said that sexual interests are consequences of committing sexual crimes.

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STATISTICAL ANALYSIS

To assess relationships between the different constructs used in this study, we conducted SEM analyses using EQS (Bentler, 1995). Such analyses allowed us to evaluate the explanatory power of different propensity models using various goodness-of-fit measures: the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Scores superior to .95 for the CFI and inferior or equal to .06 for the RMSEA are usually indications of a very good model (Ullman, 2001). To compare different SEM models that were not nested, we used the Akaike information criterion (AIC). AIC penalizes models for additional parameter estimates, smaller values indicating a better model (Loehlin, 1998). In other words, a good model with few parameters (paths) is a more desirable solution. Since we did not have phallometric data for all subjects included in this study, we first examined the relative utility of the three propensity models in a reduced version, that is, without phallometric data. These models were tested on all 209 subjects. Then we compared the three propensity models in their full version (as shown in Figure 1), including measures of deviant sexual interests. This comparison could be tested only on the 109 subjects for whom we had valid phallometric data. In each model, we controlled for possible covariance between sexual and nonsexual criminal activity (Lussier, LeBlanc and Proulx, 2005).

# RESULTS

## COMPARISON OF THREE PROPENSITY MODELS

REDUCED-FORM MODELS

First, we examined the relative adequacy of the specific developmental model of the criminal activity of sexual aggressors of women (Figure 1, Model 1). Since phallometric data were not included in this model, we hypothesized a direct link between constructs of sexualization and sexual criminal activity. Results of SEM indicated that the specific propensity model represented a poor fit of the data [$X^2(83) = 175.30$, $p < .001$; CFI = .89; RMSEA = .077; AIC = 268.82]. In other words, important associations among constructs of the model were left unaccounted for. Results indicated that directions of the hypothesized relationships between constructs went in the expected direction. Deviant sexual models were significantly related to sexualization ($b = .49$, $p < .05$), while sexualization was significantly related to sexual criminal activity ($b = .38$, $p < .05$). On the other hand, criminogenic models were significantly related to general

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deviance (b = .65, p < .05), while general deviance was significantly related to nonsexual criminal activity (b = .52, p < .05). This specific model explained 43 percent, 24 percent, 15 percent and 27 percent of general deviance, sexualization, sexual criminal activity and nonsexual criminal activity respectively. Note that the correlation between nonsexual and sexual criminal activity was very high (r = .59, p < .05).

Next, we examined the general model (Figure 1, Model 2). This model yielded a good fit of the data [X²(83) = 137.92, p < .001; CFI = .93; RMSEA = .061; AIC = 225.40], which proved to be a better solution than Model 1 as shown by a lower AIC coefficient. Results of the SEM showed that the criminogenic models construct was significantly related to general deviance (b = .62, p < .05), while general deviance was significantly related to sexualization (b = .49, p < .05), sexual criminal activity (b = .61, p < .05) and nonsexual criminal activity (b = .65, p < .05). Thus, individuals with high scores on the general deviance construct also scored highly on constructs of sexualization, sexual and nonsexual criminal activity. This model helped explain 38 percent, 24 percent, 39 percent, 42 percent of general deviance, sexualization, sexual criminal activity and nonsexual criminal activity respectively. Furthermore, the correlation between non-sexual and sexual criminal activity was high (r = .52, p < .05). Finally, we estimated the general-specific model (Figure 1, Model 3). This model was a good fit of the data [X²(81) = 131.64, p < .001; CFI = .94; RMSEA = .059; AIC = 223.44]. Results indicated that this model was a statistically significantly better representation of the covariance among the constructs data than Model 2 [X²(2) = 6.28, p < .05]. Since the general-specific model was the best fitting model among the three models being compared, it is presented in Figure 3. It indicates that criminogenic models were significantly related to general deviance, which was significantly related to sexualization, sexual criminal activity and nonsexual criminal activity. On the other hand, deviant sexual models were related to sexualization, which was related to sexual criminal activity. Results showed that general deviance was more strongly related to sexual criminal activity than sexualization.

FULL-FORM MODELS

SEM analyses showed that the specific model (Figure 1, Model 1) showed only a modest fit of the data [X²(127) = 184.11, p < .001; CFI = .91; RMSEA = .066; AIC = 277.41]. In other words, important relationships among constructs were not accounted for in this hypothetical model. Examination of the results indicated that the relationships between constructs were in the hypothesized direction. The construct of deviant sexual models was positively and significantly related to the construct of sexualization (b = .49, p < .05), explaining 24 percent of the variance. Sexualization was positively and significantly related to the presence of

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deviant sexual interests (b = .27, p < .05), explaining 7 percent of the variance of sexual interests. The construct of deviant sexual interests was positively and significantly related to the construct of sexual criminal activity in adulthood (b = .20, p < .05), explaining 4 percent of the variance. However, the correlation between nonsexual and sexual criminal activity was very high (r = .62, p < .05).

The general model (Figure 1, Model 2) presented a good fit of the data [$X^2(127)$ = 158.30, p < .05; CFI = .95; RMSEA = .050; AIC = 251.82]. Compared to the previous model, it yielded a more adequate representation of the pattern of covariance among latent constructs. Results showed that criminogenic models were positively and significantly related to the construct of general deviance (b = .62, p < .05), explaining 39 percent of the variance. In turn, the construct of general deviance was positively and significantly related to sexualization (b = .42, p < .05), deviant sexual interests (b = .32, p < .05), sexual criminal activity (b = .54, p < .05) and nonsexual criminal activity (b = .66, p < .05) explaining 18 percent, 11 percent, 29 percent and 43 percent of the variance respectively. Hence, the construct of general deviance was strongly related to each element of the sexual pathway. Moreover, the correlation between nonsexual and sexual criminal activity was very high (r = .58, p < .05).

SEM analysis showed that the adequacy of the general-specific model (Figure 1, Model 3) had a good fit of the data [$X^2(124)$ = 153.85, p < .05; CFI = .95; RMSEA = .049; AIC = 253.02]. Compared to the second model, however, this model did not show a significant improvement as to the overall fit of the data [$X^2(3)$ = 4.45, p>.10]. In other words, the general-specific model of sexual criminal activity was as good, but no better than the general model. Due to space limitation, only the general-specific model is presented in Figure 4.[8] An examination of the relationships among constructs showed that results observed in Model 2 remained relatively unchanged in Model 3. That is, the construct of criminogenic model was positively and significantly related to the construct of general deviance, explaining 38 percent of the variance. General deviance was positively and significantly related to the construct of sexualization ($R^2$ = .16), deviant sexual interest ($R^2$ = .12), sexual criminal activity ($R^2$ = .32) and nonsexual criminal activity ($R^2$ = .43). The model showed that the link between the construct of deviant sexual models and sexualization was

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8. We chose to report Model 3 instead of Model 2 because of two reasons. First, Model 3 is empirically as good as Model 2, even after analyzing various goodness-of-fit parameters. Second, we reported Model 3 to highlight the relationship of general deviance with sexual criminal activity over and against the construct of deviant sexual preferences.

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positive and significant. However, the link between sexualization and deviant sexual interests, although positive, was not significant. Similarly, deviant sexual interests were not significantly related to sexual criminal activity. Adding a path between sexualization and sexual criminal activity would have not significantly increased the fit of our model [$X^2(1) = 2.03$, p>.10]. Thus, after controlling for the construct of general deviance, links between elements of the sexual pathway became mostly nonsignificant. Comparing the parameter estimates obtained from the reduced-model to those of the full model version resulted in a very high correlation [r = .94, p < .001], thus showing the stability of our results despite the loss of 100 subjects.

# DISCUSSION

In this study, we compared three propensity models, using SEM, to explain the criminal activity of sexual aggressors of women. Our results indicate that, compared to a specific model, a general and a general-specific model were more adequate representations of the developmental background of sexual aggressors of women. Congruent with the explanatory model of chronic offending (Farrington, 1992; Moffitt, 1993), this study provides significant evidence of how important a role early and persistent antisocial behaviour plays in explaining the male propensity to sexually offend. Yet studies have shown that violent and chronic offenders could not be differentiated based on family background and personal characteristics (Capaldi and Patterson, 1996). Our results suggest that chronic offending and sexual aggression against women may be explained by similar factors. Previous observations have shown that the criminal activity of sexual aggressors of women is diverse (Lussier, 2005). In their review of the scientific literature, Hudson and Ward (1997) noted that research has not uncovered conclusive evidence that sexual aggressors of women differ from the general prison population. Paradoxically, they underlined the need for developing theoretical models specifically explaining sexual aggression towards women. If the importance of explaining sexual aggression towards women is not questioned, the pertinence of developing a model to explain specifically the sexual criminal activity of aggressors of women will be challenged. The state of empirical knowledge provides little support for the specialization in sexual crime for sexual aggressors of women (Lussier, 2005). Furthermore, one of the major findings of this study was the predominant role of general deviance over and against sexualization and deviant sexual interests in explaining sexual criminal activity. In the reduced version of our model, adding a path from sexualization to sexual criminal activity helped raise the explained variance from 38 percent to 39 percent, which was already explained by general deviance. Similarly, in the full version, adding a path

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from deviant sexual interests to sexual criminal activity raised the explained variance from 29 percent to 32 percent. It would appear that specificity in developmental antecedents is modest at best.

Our results suggest that developmental factors associated with chronic offending tend to overlap with those associated with the male propensity to commit sexual crimes against women. They also suggest that two constructs were important precursors of the male propensity to commit sexual crimes: criminogenic models and general deviance. Our construct of criminogenic models was indirectly related to sexual criminal activity parameters through its relationship to general deviance. A criminogenic family environment may not provide sufficient constraint over a child's behaviour by not supervising, recognizing and adequately punishing inappropriate behaviour (Gottfredson and Hirschi, 1990). Exposure to coercive and violent models may in fact reinforce the child's use of such inappropriate behaviours (Patterson and Yoerger, 1993). Attachment theorists would argue that a criminogenic environment might not provide adequate skills for the child to relate and interact with others in a pro-social way (Marshall and Barbaree, 1990). This lack of constraint and warmth on behalf of the parents toward their child constitutes risk factors leading to an antisocial lifestyle, since it does not favor the development of self-control and empathy toward others (Farrington, 1992). Control theorists have underlined the role of low self-control over one's behaviour as having a central role in the development of deviance over time (Gottfredson and Hirschi, 1990). Individuals lacking self-control have been described as impulsive, insensitive, physical, risk-taking, shortsighted and nonverbal. This approach has been extended by including elements of a lack of allocentrism, or egocentric personality traits (LeBlanc, 1997). These traits refer to the inability to cope with life's demands, being hostile towards others, feeling insecure and prioritizing personal needs. Taken together, individuals who lack personal constraint over their behaviour and who are not concerned for others may be at a higher risk of engaging in sexual crimes especially when faced with adversities.

Many studies have shown the presence of an antisocial pathway leading to sexual criminal activity in aggressors of women. Our results showed that early (that is, childhood), persistent (that is, through adolescence), and diversified (that is, four behavioural domains) deviant behaviour is associated with an earlier onset and more frequent sexual crimes in adulthood. The prevalence of conduct-disorder, juvenile delinquency and criminal activity of a nonsexual nature in adulthood have been shown to be important amongst adult sexual aggressors of women. A retrospective study of a community sample of men (Lalumière and Quinsey, 1996), as well as a prospective study using a longitudinal framework (Moffitt, Caspi, Harrington and Milne, 2002) indicated that early behavioural problems

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are related to the presence of physical and sexual coercion against women. Furthermore, aggressors of women who reported more frequent antisocial behaviour during childhood and adolescence also reported an earlier onset of their sexual criminal activity (Prentky and Knight, 1993). Individuals characterized by an antisocial tendency, that is, lacking personal constraint and concern for others, will show a higher propensity to engage in such behaviour given the opportunity. Thus, it is reasonable to think that the tendency to defy authority figures in school and at home, to steal, commit fraud, to be hostile and violent toward others, as well as to sexually offend are all different manifestations of the general deviance syndrome that can manifest itself differently across time and situations (Patterson, 1993). It is congruent with observations from cohort studies showing that chronic offenders commit more than their share of sexual aggression (Tracy, Wolfgang and Figlio, 1990; Moffitt, Caspi, Harrington and Milne, 2002).

Sexual offending could thus be seen as being part of a chronic antisocial lifestyle. This hypothesis is further reinforced by the high covariance observed between sexual and nonsexual criminal activity in adulthood. In their theoretical model, Gottfredson and Hirschi (1990) stated that low self-control is not the sole factor explaining criminal activity, acknowledging the contributing role of opportunities. This hypothesis has received empirical support (Grasmick,Tittle, Bursik and Arneklev, 1993). In that regard, Warr (1988) has shown that opportunity patterns of burglary and rape were quite similar. Sexual aggression can occur during a burglary in which theft was the initial motive. Opportunities leading to sexual violence may also arise as part of the routine activities of individuals pursuing an antisocial lifestyle. This lifestyle is characterized by the need for immediate gratification and sensation-seeking behaviours, such as frequenting bars and nightclubs with delinquent peers (Cusson, 1998). This antisocial lifestyle can favor opportunities for sexual violence in many ways: as a form of "payment" for drug debt, as an initiation ritual to become a gang member, to force someone into prostitution, following episodic difficulties to find a sexual partner, against a reluctant partner who may want to end the relationship, after a night of consuming drugs and alcohol in bars, and the like. Opportunities, routine activities and antisocial lifestyle of sexual offenders remain areas of investigation.

Our results underline the considerable continuity between early, persistent and diversified deviant behaviour and developmental elements characterizing the sexual pathway.[9] In our study, individuals scoring high

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9. Evidence from recent studies supports the presence of a second behavioural pathway characterized by sexualization and deviant sexual interests (Knight and Sims-Knight 2003). In our study, SEM analyses provided only weak evidence of a second behavioural pathway leading to early and frequent sexual criminal activity.

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on the general deviance construct were more likely to show high
sexualization and deviant sexual interests. The continuity between general
deviance and behavioural manifestations of sexualization may be
attributable to personality characteristics. Knight and Sims-Knight (2003)
observed that callous personality traits were related to high sexualization.
Callous personality traits are congruent with LeBlanc's egocentric
personality style characterizing the individuals' hostility toward others and
the inability to cope with life's demands. Individuals with these personality
traits might use sexuality as a way to cope with interpersonal conflicts and
negative emotional states, such as anger and humiliation (Proulx,
McKibben and Lusignan, 1996). As shown in our study, being exposed to
deviant sexual models might exacerbate such a process. These results were
also observed previously using a sample of adult sexual aggressors of
women (Beauregard, Lussier and Proulx, 2004; Knight and Sims-Knight,
2003). Similar processes might explain our results, indicating a relationship
between general deviance and deviant sexual interests. Indeed, the
presence of deviant sexual interests is not so much associated with a high
sexual drive, but with general deviance. One hypothesis to explain these
results is that individuals with a high antisocial tendency may not have
developed sufficient empathy toward others.[10] This lack of empathy may
not favor the development of controls necessary to inhibit sexual arousal
to sexually violent stimuli (Barbaree, 1990). Callous and psychopathic
personality traits have been shown to be related to having deviant sexual

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The explained variance of sexual criminal activity beyond what was already
explained by antisocial tendency was weak. In the full version, when including
phallometric data, the link was marginal and nonsignificant. It is possible that our
SEM analyses for the full-version model lack sufficient statistical power, allowing
the finding of more important statistical effects. It is thus possible that the subgroup
of sadistic sexual aggressors in our sample was too marginal to highlight further
proof of a second behavioural pathway.

10. Our results contrast then with those showing that phallometric measures can help
discriminate sexual aggressors of women from nonsex offenders. Many of the
studies conducted comparing sexual interests of sexual aggressors of women with a
control group have not provided much detail of the sampling procedures used as
well as characteristics of these control subjects beyond the fact that they were not
previously convicted for a sexual offence (Marshall and Fernandez, 2000). It could
be argued that the general criminal propensity of aggressors of women used in the
sample was higher than those of the control group. Thus, it might have nothing to
do with the fact that those (for example, sexual aggressors of women) having
showed more deviant sexual interests had committed a sexual offence. In that
regard, the meta-analysis of Hall, Shandrick and Hirschman (1993) showed that the
effect size of group membership (for example, rapists versus nonrapists) based on
phallometric data was much higher in studies having a control group of community
men than using a control group of other offenders (mostly sex offenders other than
rapists).

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fantasies and sexual arousal to sexually violent stimuli (Serin, Malcolm, Khanna and Barbaree, 1994; Knight and Sims-Knight, 2003). Further study is needed to shed more light on to the possible role of personality traits and deviant sexual interests.

## CONCLUSION

This study is one of the first investigations of the link between developmental factors and criminal activity of sexual aggressors of women in adulthood. Its results should therefore be regarded as exploratory. Furthermore, it suffers from a number of methodological limitations. It is based on retrospective data, which might have been biased by poor memory recall. Developmental factors were assessed using self-reported information collected only through interviews Even in a context of anonymity, it is possible that some participants minimized or exaggerated certain features of their developmental history. One way to control for this aspect would have been to include a measure of socially desirable responses in our statistical analyses. However, such a measure was not available when this study was completed. Criminal activity data were based on official data. We might have observed different results if we had used self-reported data. We are in the process of validating the results obtained with self-reported data of the criminal activity in adulthood. Our sample is composed of subjects having received a federal prison sentence of a minimum of 2 years. Our results may therefore not be representative of all sexual aggressors of women. Finally, we did not have phallometric data for all subjects included in this study. The study is based on a small sample and results should be interpreted accordingly. More studies are needed to investigate the role of general deviance and sexualization in the development of criminal activity before firm conclusions can be drawn.

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