

# **Toward a Developmental Taxonomy of Adult Sexual Aggressors of Women: Antisocial Trajectories in Youth, Mating Effort, and Sexual Criminal Activity in Adulthood**

**Jesse Cale, PhD**

*Key Centre for Ethics, Law, Justice, and Governance, Griffith University*

**Patrick Lussier, PhD**

*School of Criminology, Simon Fraser University and Centre for Research on Sexual Violence, Simon Fraser University*

Recent studies suggest that sexual aggressors of women are characterized by early- and late-onset antisocial trajectories. However, these studies have not examined the role of mating effort and its role on sexual offending in adulthood. This study examined differences in the level of mating effort of early- and late-onset offenders and the association between mating effort and sexual offending in adulthood. Factor analysis identified two latent constructs of sexuality: mating effort and high sexual drive. Early-onset offenders exhibited significantly higher levels of mating effort and sexual drive. Furthermore, high mating effort and high sexual drive were more strongly associated with an earlier onset and a higher frequency of sexual crimes in adulthood than group membership. This study provided empirical evidence that a developmental taxonomy of early and late onset distinguishes the sexual activity and sexual criminal activity of adult sexual aggressors. The findings are discussed in light of a developmental taxonomy of sexual aggressors of women.

**Keywords:** sexual assault; rape; age of onset; developmental theory; antisocial sexuality

Currently, the effectiveness of treatment programs designed to reduce sexual recidivism remains a contentious point of debate. Several empirical studies have suggested that sex offender treatment programs reduce the rate of sexual recidivism (e.g., Hanson et al., 2002; Lösel & Schmucker, 2005). Others based on random assignment to treatment have shown no impact on sexual recidivism (Marques, Wiederanders, Day, Nelson, & van Ommeren, 2005) and suggested that attention needs to be paid to specific needs of different sexual aggressors to enhance treatment efficacy. In recent years, many programs have targeted deviant sexual arousal/preferences, cognitions supportive of rape, sexual self-regulation, intimacy deficits, lack of empathy, and anger management

issues (Beech & Ward, 2004; Hanson & Harris, 2000; Thakker, Collie, Gannon, & Ward, 2008). Nonetheless, these treatment programs have largely neglected a key aspect related to sexual aggression; the antisocial development of offenders (Lussier & Cortoni, 2008). Recent developmental models of sexual aggression have stressed the role of antisocial behavior in sexual aggressors of women and its importance for treatment (Lalumière, Harris, Quinsey, & Rice, 2005). Furthermore, antisocial development in sexual aggressors involves at least two meta-trajectories, early and late onset, that might have implications for treatment planning and case management (Cale, Lussier, & Proulx, 2009). Therefore, the aim of this study is to examine the sexual lifestyle of adult sexual aggressors of women following different antisocial pathways and their role on sexual criminal activity in adulthood.

## **ANTISOCIAL TRAJECTORIES AND SEXUAL AGGRESSION**

### **The Early-Onset Antisocial Trajectory and Sexual Aggression**

Developmental theories of offending that consider the life course from birth to later ages have identified groups of offenders characterized by different antisocial trajectories (Moffitt, 1993). Trajectories refer to different patterns of onset,<sup>1</sup> course, and desistance of particular behaviors over time. For example, Moffitt originally distinguished early-starters or “life-course-persistent” (LCP) offenders from late-starters or “adolescent-limited” offenders. Early starters are characterized by a childhood onset of antisocial behavior that persists, escalates, and diversifies into adulthood. Furthermore, a small minority of males in the general population (between 5% and 10%) is characterized by this antisocial trajectory (Moffitt, Caspi, Harrington, & Milne, 2002).

Early starters have typically been associated with the presence of individual and familial deficits and environmental adversities. The combination and successive interactions between these risk factors over the life course have been hypothesized to increase the risk of (a) a childhood onset of antisocial behavior and offending, (b) persistence of antisocial and criminal behavior, (c) diversification of antisocial/criminal behavior, and (d) serious and violent offending in the Dunedin birth cohort. In the follow-up of the Dunedin birth cohort at age 26 (Moffitt et al., 2002), early-onset offenders were disproportionately responsible for overall violent offending (i.e., 43% of convictions) and, in particular, violence toward women (i.e., 62% of convictions). Other studies have uncovered similar patterns regarding personal and relationship violence (e.g., Mazerolle & Maahs, 2002). Moffitt (1993) also hypothesized that youth following this trajectory would be at risk for escalating their violence to sexual assault.

This hypothesis was further developed by Seto and Barbaree (1997) and Lalumière et al. (2005), who hypothesized that the accumulation of early deficits makes these individuals unlikely to succeed in competition for desirable partners. Therefore, the likelihood of acquiring intimate relationships through coercive tactics increases, especially because the long-term prospects for these men are poor. To our knowledge, only one empirical study has examined the link between an early-onset antisocial trajectory and sexual aggression in adulthood, finding that between 20% and 50% of convicted rapists were characterized as early starters depending on the criteria selected to determine onset (Cale et al., 2009).

## The Late-Onset Antisocial Trajectory and Sexual Aggression

Late starters are characterized by an adolescent onset of antisocial behavior typically followed by desistence in early adulthood. However, in some cases, the consequences of prior involvement in antisocial behaviors (e.g., early pregnancy, school dropout, criminal record) can also lead to maladaptive outcomes in adulthood (e.g., fighting, financial problems, substance abuse; Nagin, Farrington, & Moffitt, 1995). Compared to early starters, late starters (i.e., adolescent-limited offenders) account for approximately 45% of the general population of males (Le Blanc, 2005).

The late-onset antisocial trajectory has typically been associated with risk factors that are transitory/contextual such as (a) the importance of peer association, (b) the influence of peer delinquency, (c) strain as a result of adolescent status, and (d) tenuous bonding with adult authority (Thornberry, 2005). Their offending has been described as a result of the gap between their biological maturity and their social status as adolescents, representing their inability to acquire status and resources through conventional means. Prospective longitudinal studies have shown that youth involved in high levels of antisocial behavior during adolescence are also at risk for intimate partner violence in adulthood (Lussier, Farrington, & Moffitt, 2009).

The young male syndrome was used to describe sexual aggression among late starters, where it represents adolescent competition for reproductively relevant goals such as status, resources, and mates (Wilson & Daly, 1985). In this case, coercion, charm, and false promise, for example, are tactics used during adolescence and young adulthood to attract mates and acquire sexual relations. According to this hypothesis, however, as the intensity of competition eventually diminishes and is replaced by more positive future prospects (i.e., jobs, status, and wealth), the use of coercive tactics correspondingly declines. Seto and Barbaree (1997) similarly hypothesized that date rape is more likely characterized by this phenomenon in adolescence/young adulthood. To our knowledge, no prospective studies have examined the link between late-onset antisociality and sexual aggression in adulthood. Using retrospective longitudinal data and a dynamic classification procedure, Cale et al. (2009) found that approximately 40% of convicted adult sexual aggressors of women were characterized by this antisocial trajectory.

***Mating Effort and Sexual Aggression.*** Until recently, sexual development and its role in sexual aggression in early and late starters have been virtually ignored in criminological empirical literature. Evolutionary psychologists, on the other hand, have stressed the importance of the construct of mating effort in this context. Mating effort refers to the energy and time devoted to acquiring sexual interactions with the opposite sex (Lalumière & Quinsey, 1996). For some males, a mating strategy characterized by impersonal sex, and the pursuit of multiple short-term sexual encounters, has been hypothesized to represent a strategy designed to maximize the likelihood of reproductive success (i.e., passing on of genes to subsequent generations; Thornhill & Palmer, 2000). Mating effort, therefore, is different from the concept of a high sexual drive, which represents the strength of the sexual drive or the total sexual outlet (e.g., being overwhelmed by sexual fantasies, compulsive masturbation, frequent use of pornographic material; Kafka, 1997).

Considering the importance of reproduction, high mating effort in antisocial males has been hypothesized to represent either a conditional or an alternative mating strategy (Lalumière & Quinsey, 1996). The former hypothesis suggests that high mating effort in antisocial males is the result of individual differences (e.g., lack of resources) that put some men in a state of competitive disadvantage. Therefore, high mating effort would increase

the likelihood of reproductive success for such individuals. On the one hand, it has been hypothesized that early starters characterized by individual deficits (e.g., neuropsychological deficits) may be less likely to acquire and maintain stable, long-term relationships (Lalumière et al., 2005). On the other hand, these individuals have been observed to exhibit an early onset of sexual intercourse (LeBlanc & Bouthillier, 2003), to have fathered children earlier in life (Stouthamer-Loeber & Wei, 1998), and to have fathered multiple children (Moffitt et al., 2002).

In contrast to competitive disadvantage, high mating effort in antisocial males has also been hypothesized to represent an alternative mating strategy whereby deceit, manipulation, grandiosity, and coercive tactics reflect a preference for partner diversity (Rowe, Vazsonyi, & Figueredo, 1997). Several empirical studies have established a link between delinquency in adolescence/young adulthood and high mating effort. Considering that (a) most of these studies involve samples of college undergraduates, and (b) the fact that such samples are unlikely to include early starters (Moffitt et al., 2002), these results suggest that late starters are characterized by high mating effort as well. For example, empirical studies with college students indicate that sexually coercive males are more likely to report a more extensive sexual history (Byers & Eno, 1991); have more sexual partners and higher self-perceived mating success (Lalumière & Quinsey, 1996); exhibit a preference for partner variety, uncommitted sexual relationships, and fewer intimate relationships (Cornett & Shuntich, 1991); are more likely to view dating in terms of sexual possibilities (Craig, Kalichman, & Follingstad, 1989); and exhibit a preference for a greater amount of sexual activity (Lalumière & Quinsey).

## Aims of the Study

Although a developmental taxonomy of sexual aggressors of women has been hypothesized, few empirical studies have been conducted to examine its relevance for treatment planning and the case management of adult offenders. More specifically, it is unclear how early and late starters differ in terms of mating effort, a key theoretical construct related to sexual coercion and sexual violence. Therefore, the role and importance of mating effort in convicted adult sexual aggressors of women remains unclear. The main goal of this study was to examine the sexual activity of sexual aggressors of women. First, we examined differences between early- and late-onset offenders in terms of their mating effort. Second, the association between mating effort and sexual offending in adulthood was examined. Third, this study examined how mating effort was related to antisocial trajectories and, subsequently, sexual criminal activity in adulthood. To ensure that any effects discovered regarding high mating effort were not the by-product of a generally high sexual drive, all of the empirical analyses in this study were conducted while controlling for measures of the strength of the sexual drive.

## METHODS

### Sample

In this study, all adult males convicted of a sexual offence, who received a prison sentence of at least 2 years, were selected for a survey between April 1994 and June 2000 in the province of Quebec, Canada. Ninety-three percent of the individuals ( $n = 553$ ) agreed to participate with the interview. In total, 209 of these individuals that had committed a

sexual offence against an adult female 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 the completion of correctional assessment procedures prior to the individual's transfer to an institution that is suited to his risk level and treatment needs.

Most subjects included in this study were White (82.8%). The average age of individuals in the sample was 33.3 years old ( $SD = 8.8$ ) and most (90.3%) had a less than high school education. Approximately two-thirds of the sample was unemployed (62.4%) and also single (67.2%). Offenders in the sample were serving a mean prison sentence of 4.7 years ( $SD = 3.4$ ); and the offences for which they were incarcerated at the time of assessment included sexual assault (66.0%), armed sexual assault (27.8%), sexual assault causing injuries (9.1%), and aggravated sexual assault (4.3%). On average, these individuals had been previously convicted of offences on 5.4 occasions ( $SD = 4.3$ ; range = 1–22), and most of the sample were recidivists (i.e., 79.9% had received a prior sentence).

## Procedures

Data used in this study were collected in a semistructured interview with each subject who was interviewed only once by a member of the research team and was unaware of the research questions and hypotheses.<sup>2</sup> This information was compared to that in the offender's correctional files and police reports. When disagreements were found between these two sources, official data were used. Interrater reliability was not assessed for the variables used in this study. On the other hand, all the scales used had adequate internal consistency (Cale et al., 2009; Lussier, Le Blanc, & Proulx, 2005; Lussier, Leclerc, Cale, & Proulx, 2007; Lussier, Proulx, & Le Blanc, 2005). Finally, police records were consulted to determine sexual criminal activity in adulthood.

## Measures

**Early-Onset and Late-Onset Antisocial Trajectories.** To identify antisocial trajectories, self-reported retrospective data were used on several indicators of antisocial behavior. These indicators were assessed in two periods: (a) childhood (i.e., 0–12 years old) and (b) adolescence (i.e., 13–17 years old). Three forms of self-reported antisocial behaviors were examined in both periods: (a) behavioral problems, (b) nonviolent delinquency, and (c) violent delinquency. Behavioral problems referred to frequent lying, being rebellious, temper tantrums, running away or being truant, and risky behaviors that endanger others or one's self (e.g., walking on the edge of a bridge). Nonviolent delinquency included different acts of property and nonviolent delinquency such as minor and major theft, robbery without a weapon, break and enter, drug trafficking, fire setting, and property destruction. Finally, violent delinquency included serious and violent behaviors such as homicide, threats and intimidation, armed robbery, use of a weapon, nonsexual assault, and sexual assault. Each indicator was coded as either present (1) or absent (0) for the period. The concurrent and predictive validity of these indicators have been presented elsewhere (Lussier et al., 2005).

Following the work of developmentalists (Ayers et al., 1999), a dynamic classification procedure was used to identify antisocial trajectories of the sample. This involved the cross tabulation of cluster solutions of antisocial behavior in the two periods. Two hierarchical cluster analysis procedures were performed (i.e., childhood and adolescence) using Ward's

method and squared Euclidean distance to identify nested groups of individuals in each time frame. Scree plots and Mojena's (1977) stopping rule were analyzed to determine when an inconsistent increase in the dissimilarity measure was observed. The internal validity of the cluster solutions have been presented elsewhere (Cale et al., 2009).

A dynamic classification procedure was then performed by cross tabulating the cluster solutions for childhood and adolescence. This procedure identified seven antisocial trajectories using this dynamic classification procedure: (1) nondelinquents (i.e., absence of delinquency in childhood and adolescence [7%]); (2) initiators (i.e., onset of delinquency in adolescence [38%]); (3) stable lows (i.e., behavioral problems in childhood and adolescence [15%]); (4) escalators (i.e., childhood-onset of behavioral problems followed by delinquency in adolescence [28%]); (5) stable-moderates (i.e., serious delinquency in childhood and adolescence [5%]); (6) stable-highs (i.e., violent delinquency in childhood and adolescence [4%]); and (7) de-escalators (i.e., childhood onset of violent delinquency followed by nonviolent delinquency in adolescence [2%]). These results have been presented in more detail elsewhere (Cale et al., 2009). For this study, only two meta-trajectories, first identified by Moffitt (1993) and later adapted for sexual aggressors by Lalumière et al., (2005), were retained for statistical analyses.<sup>3</sup> Therefore, the early-onset antisocial trajectory group ( $n = 95$ ) reflected the combination of the stable-low, escalator, stable-moderate, and stable-high trajectory groups. The late-onset antisocial trajectory group consisted of the combination of the nondelinquents and initiators ( $n = 109$ ).<sup>4</sup> Because of the small size of the de-escalator group (less than 5%), they were not included in the study.

**Mating Effort.** Eleven items were selected to measure sexual development in youth and adulthood. To ensure construct validity of our measures, we included indicators that have been typically associated with mating effort in prior studies (e.g., Lalumière, Chalmers, Quinsey, & Seto, 1996) as well as indicators that have been associated with a high sexual drive (Kafka, 1997; Table 1).

Next, factor analysis (principal component analysis) with varimax rotation was used to examine the factor structure of the 11 measures of sexual development and maximize between-component variance. Initially, the varimax rotation converged, and the Kaiser-Meyer-Olkin measure (.73) suggested the presence of a factor structure in the data. An examination of Cattell's (1966) scree plot suggested the retention of only two components. The communalities indicated that 48% of the variance in each item was accounted for by the two components. The first factor consisted of five items: the frequency of sexual fantasies, compulsive masturbation, frequency of monthly masturbation, and sexual investment in adolescence, and sexual investment in adulthood. These variables were standardized and summed to create a construct reflecting sexual drive ( $\alpha = .66$ ). The second factor consisted of six items, including the number of sexual partners (divided by age), age at first sexual intercourse, self-perception of sexual competence, age at first heterosexual contact, and average number of sexual episodes per week. Again, these six variables were standardized and then summed to create a construct reflecting mating effort ( $\alpha = .65$ ).

**Criminal Activity of Sexual Aggressors of Women in Adulthood.** Three parameters of sexual offending in adulthood were examined in this study: (1) age of onset of sexual crimes, (2) annual frequency of sexual crimes, and (3) specialization in sexual crimes.<sup>5</sup> The age of onset refers to the offender's age at the time of his or her first sexual offence charge in adulthood.<sup>6</sup> In this study, the average age at first charge for a sexual crime in adulthood was 30.9 years old ( $SD = 9.2$ ; range = 17.5–69.1). The annual frequency of sexual offending was determined by dividing the total number of charges for a sexual crime by the amount of time at risk in adulthood, therefore, controlling for periods of incarceration.

**TABLE 1. Variables Measuring Sexual Development**

Measure of Sexual Development	Original Variables, Measurement, and Coding	Descriptive Sample Statistics (Mean, <i>SD</i> , range)
Overwhelmed by sexual fantasies (lifetime) <sup>b</sup>	Deviant and nondeviant sexual fantasizing (0 = none, 4 = persistent)	$X = 1.33$ , $SD = 0.78$ , range = 0–4
Compulsive masturbation (adolescence and adulthood) ( $\alpha = .71$ ) <sup>b</sup>	Compulsive masturbation in adolescence (0 = no, 1 = yes) Compulsive masturbation in adulthood (0 = no, 1 = yes)	$X = 0.35$ , $SD = 0.67$ , range = 0–2
Average monthly masturbation <sup>b,c</sup>	Average number of times masturbated per month	$X = 9.01$ , $SD = 29.70$ , range = 0–300
Sexual investment in adolescence ( $\alpha = .61$ )	Viewing pornographic films (0 = no, 1 = yes) Viewing pornographic magazines (0 = no, 1 = yes) Frequenting exotic bars (i.e., strip clubs; 0 = no, 1 = yes) The use of erotic toys (0 = no, 1 = yes) Calling erotic phone lines (0 = no, 1 = yes) Rendering the services of a prostitute (0 = no, 1 = yes) Selling sexual services (0 = no, 1 = yes)	$X = 0.87$ , $SD = 1.19$ , range = 0–5
Sexual investment in adulthood ( $\alpha = .62$ )	Viewing pornographic films (0 = no, 1 = yes) Viewing pornographic magazines (0 = no, 1 = yes) Frequenting exotic bars (i.e., strip clubs; 0 = no, 1 = yes) The use of erotic toys (0 = no, 1 = yes) Calling erotic phone lines (0 = no, 1 = yes) Rendering the services of a prostitute (0 = no, 1 = yes) Selling sexual services) (0 = no, 1 = yes)	$X = 2.33$ , $SD = 1.62$ , range = 0–7
Number of sexual partners <sup>a,b,c</sup>	Number of sexual partners prior to assessment	$X = 59.09$ , $SD = 192.33$ , range = 0–2,000
Age at first heterosexual intercourse <sup>b</sup>	Age at the time of first heterosexual intercourse with a consenting partner	$X = 16.37$ , $SD = 3.27$ , range = 7–36

(Continued)

**TABLE 1. Variables Measuring Sexual Development (Continued)**

Measure of Sexual Development	Original Variables, Measurement, and Coding	Descriptive Sample Statistics (Mean, <i>SD</i> , range)
Self-perception of sexual competence	1 = incompetent, 2 = moderately competent, 3 = competent, 4 = extremely competent	$X = 3.01$ , $SD = 0.60$ , range = 1–4
Age at first heterosexual contact <sup>b</sup>	Age at the time of first heterosexual contact with a consenting partner	$X = 14.19$ , $SD = 4.08$ , range = 4–36
Average weekly sex <sup>b,c</sup>	Average number of times per week having sex with a consenting partner prior to incarceration	$X = 4.95$ , $SD = 4.87$ , range = 0–31
Number of stable relationships <sup>a,b</sup>	Number of stable relationships (i.e., >1 year) prior to assessment	$X = 3.25$ , $SD = 2.22$ , range = 0–20

*Note.* Mean, standard deviation, and range are reported based on the original, nontransformed variables. For bivariate and multivariate analyses, log transformed data were used.

<sup>a</sup>For statistical analysis, the number of stable relationships and the number of sexual partners were analyzed controlling for age.

<sup>b</sup>For statistical analysis, log transformations were performed.

<sup>c</sup>For statistical analysis, extreme outliers were measured and replaced with the rank of the data.

The average frequency of charges for sex crimes in the sample was 2.3 ( $SD = 2.3$ ; range = 1–14). When controlling for time at risk in adulthood, the annual frequency of charges for a sex crime was 0.8 ( $SD = 1.0$ ; range = .03–5.95). Finally, specialization refers to the ratio of the number of charges for a sex crime to the total number of charges in adulthood. The level of specialization in sexual crimes was .17 ( $SD = .14$ ; range = .01–.86). Therefore, on average, sexual crimes represented approximately 17% of offenders' total number of charges. Additionally, in the present sample, 12% of the offenders had at least 50% of their charges for sexual crimes, indicating some specialization in sexual criminal activity in the sample.

## Analytic Strategy

**OLS Hierarchical Regression Modeling.** A series of hierarchical regression analyses determined the predictive validity of the dual taxonomy associated with mating effort. First, three regression models were analyzed using the mating effort scale as the dependent variable. The first model consisted of control variables, including ethnicity, education, marital status, and employment status. In the second model, the variable reflecting early- and late-onset antisocial trajectories was added to the control variables. Finally, to control for associations between mating effort and sexual drive, the sexual drive scale was added to the third model. This process was then repeated substituting the mating effort scale with the sexual drive scale for six regression models.



Another series of hierarchical regressions were performed to predict parameters of sexual offending in adulthood, including the age at the first charge for a sexual crime, the annual frequency of sexual criminal charges, and the degree of specialization in sexual offending. For each of these three criminal career parameters, hierarchical models consisting of three blocks of predictors were used: (1) control variables, (2) the dual taxonomy, and (3) sexual drive and mating effort scales. This procedure allowed for the examination of the relative contribution of the dual taxonomy to parameters of sexual offending in adulthood and whether mating effort added to the prediction of these dependent variables.

## RESULTS

### Mating Effort

*T* tests were performed on the 11 measures of sexual development between the early- and late-onset antisocial trajectory groups.<sup>7</sup> Of the 11 measures of sexual development, all but two were found to be statistically significant. Early starters, compared to late starters, reported a higher number of female sexual partners ( $X = 60.17, SD = 178.76$  vs.  $X = 57.84, SD = 210.84$ ;  $t = -2.04, p < .05, d = .11$ ), an earlier age of onset of sexual contact ( $X = 13.77, SD = 4.44$  vs.  $X = 14.68, SD = 3.58$ ;  $t = 2.01, p < .05, d = -.23$ ) and intercourse ( $X = 15.91, SD = 3.14$  vs.  $X = 16.90, SD = 3.36$ ;  $t = 2.29, p < .05, d = -.30$ ), and a higher average number of sexual episodes per week ( $X = 5.20, SD = 5.44$  vs.  $X = 4.10, SD = 4.48$ ;  $t = -2.21, p < .05, d = .22$ ). In contrast, there were no differences between early and late starters regarding their self-perception of sexual competence or the number of stable intimate relationships in their histories. When compared in terms of the mating effort scale, early starters exhibited significantly higher mating effort than late starters ( $X = .59, SD = 3.40$  vs.  $X = -.68, SD = 2.91$ ;  $t = -5.00, p < .01, d = .40$ ).

Significant differences were also observed between early and late starters on all five measures of sexual drive. Early starters, compared to late starters, exhibited higher average monthly masturbation ( $X = 4.11, SD = 5.50$  vs.  $X = 2.08, SD = 3.55$ ;  $t = -2.98, p < .01, d = .44$ ), higher levels of compulsive masturbation ( $X = .49, SD = .76$  vs.  $X = .20, SD = .52$ ;  $t = -3.27, p < .01, d = .47$ ), more persistent sexual fantasies ( $X = 1.49, SD = .81$  vs.  $X = 1.14, SD = .70$ ;  $t = -3.23, p < .01, d = .46$ ), and higher sexual investment (i.e., viewing pornographic films and magazines, frequenting exotic bars, use of erotic toys, phoning erotic phone lines, rendering the services of a prostitute, selling sexual services) in both adolescence ( $X = 1.17, SD = .12$  vs.  $X = .52, SD = .97$ ;  $t = -4.12, p < .001, d = .94$ ) and adulthood ( $X = 2.55, SD = 1.69$  vs.  $X = 2.08, SD = 1.52$ ;  $t = -2.09, p < .05, d = .29$ ). Overall, early starters scored significantly higher on the sexual drive scale than late starters ( $X = 1.13, SD = 3.61$  vs.  $X = -1.30, SD = 3.29$ ;  $t = -2.83, p < .001, d = .70$ ). Next, hierarchical regressions controlling for ethnicity, level of education, marital status, employment status, and sexual drive of the offender were conducted to assess the impact of the early- and late-onset antisocial trajectories on mating effort.

**Early- and Late-Onset Antisocial Trajectories and Mating Effort.** Three models examined the validity of the early- and late-starter framework in predicting levels of mating effort and sexual drive. The first consisted of the control variables; the second consisted of the control variables and the early- and late-onset antisocial trajectory variable; and the third consisted of the control variables, the early- and late-onset antisocial trajectory variable, and the sexual drive scale.

**TABLE 2. Hierarchical Regression Analyses for Variables Predicting Mating Effort and Sexual Drive**

	Mating Effort ( <i>n</i> = 204)			Sexual Drive ( <i>n</i> = 204)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Ethnicity	.50 (.06)	.36 (.04)	.02 (.00)	1.97** (.21)	1.73** (.18)	1.64** (.17)
Level of education	1.55* (.14)	1.79* (.16)	1.99* (.18)	-1.44 (-.11)	-1.04 (.08)	-1.45+ (-.12)
Marital status	.34 (.05)	.35 (.05)	.34 (.05)	.04 (.00)	.05 (.01)	-.03 (-.00)
Employment status	-.15 (-.02)	-.11 (-.02)	-.16 (-.02)	.21 (.03)	.28 (.04)	.30 (.04)
Early-onset antisocial trajectory		1.35** (.21)	.91+ (.14)		2.27*** (.31)	1.96** (.27)
Sexual drive			.20** (.22)			
Mating effort						.23*** (.20)
Constant	-.27	-.91	-.40	-1.54*	-2.60***	-2.40**
<i>F</i>	1.17	2.79*	3.97**	3.05*	7.07***	7.69
<i>R</i> <sup>2</sup>	.02	.07	.11	.06	.15	.19

*Note.* The first line of data represent unstandardized beta coefficients, the second line represents standardized coefficients. Ethnicity was coded as White = 1, non-White = 0. Level of education was coded as high school or above = 1, less than high school = 0. Marital status was coded as not single = 1, single = 0. Employment status was coded as employed = 1, not employed = 0. On each of the latter variables, less than 5% of cases were missing data. Missing data were replaced with the mode of the data. An early-onset antisocial trajectory was coded as early onset = 1, late onset = 0.  
 +  $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

The first model consisting of the control variables was not statistically significant. However, the addition of the variable reflecting onset of antisocial behavior made the second model statistically significant ( $R^2 = .07, p < .05$ ). An early-onset antisocial trajectory ( $p < .01$ ) predicted higher mating effort, and, to a lesser extent, higher level of education ( $p < .05$ ) was also predictive of higher mating effort. The addition of sexual drive to the third regression model enhanced the prediction of mating effort ( $p < .01$ ) to a greater extent than the variable reflecting onset of antisocial behavior ( $p < .10$ ).

These analyses were then repeated substituting the mating effort scale with the sexual drive scale (Table 2). The first model consisting of the control variables was statistically significant ( $R^2 = .06, p < .05$ ); being non-White was related to a higher sexual drive. In the second block of the model, an early-onset antisocial trajectory ( $p < .001$ ) contributed 31% to the overall variance in sexual drive explained by the model. Finally, mating effort

also predicted high sexual drive ( $p < .01$ ) in the third model, in addition to an early-onset of antisocial behavior ( $p < .01$ ) and ethnicity ( $p < .01$ ).

**The Role of Mating Effort.** In the final stage of analysis, hierarchical regressions were conducted to examine the link between antisocial trajectories and the three parameters of sexual criminal activity in adulthood while controlling for the role of mating effort and sexual drive.

The first series of hierarchical regression models examined the age at first charges for a sexual crime in adulthood (Table 3). The first model consisting of demographic control variables was not statistically significant. In the second model, an early-onset antisocial trajectory predicted a significantly younger age in adulthood at the first charge for a sexual crime. In the third model, high mating effort ( $p < .01$ ) and high sexual drive ( $p < .05$ ) predicted a significantly younger age at first charges for a sexual crime in adulthood.

The second series of hierarchical regression models examined the annual frequency of sexual crimes (controlling for time spent at risk in adulthood). The first block of the model that included control variables was not statistically significant. In the second block, an early-onset antisocial trajectory predicted a higher annual frequency of sex crimes ( $p < .05$ ), as did being unemployed ( $p < .05$ ). Although being unemployed remained a significant predictor of the annual frequency of sexual crimes in the third block, when the sexual drive ( $p < .01$ ) and mating effort ( $p < .01$ ) scales were added, the predictive effect of an early-onset antisocial trajectory disappeared.

The third series of models examined the level of specialization in sexual crimes in adulthood. In the first model consisting of control variables ( $R^2 = .08, p < .01$ ), education ( $p < .01$ ), employment ( $p < .05$ ), and being non-White, respectively, predicted a higher level of specialization in sexual crimes. In the second model ( $R^2 = .11, p < .001$ ), an early onset of antisocial behavior predicted lower specialization in sexual crimes ( $p < .01$ ), whereas education ( $p < .05$ ) and employment ( $p < .05$ ) continued to predict higher specialization ( $p < .05$ ). Finally, in the third model ( $R^2 = .13, p < .001$ ), an early onset of antisocial behavior ( $p < .05$ ) predicted less specialization, as did high mating effort ( $p < .10$ ), which was marginally significant.

## DISCUSSION

The findings from this study identified three important aspects of the relationship between antisocial development, mating effort, and sexual aggression in adulthood. First, as a group, sexual aggressors of women were characterized by high mating effort. Second, the differences observed in the sexual behaviors of early and late starters were not limited to mating effort. Early starters compared to late starters displayed a higher sexual drive. These findings suggest that early starters had more difficulties controlling their sexual thoughts, urges, and behaviors compared to late starters. In addition, these difficulties experienced by the early starters might explain, at least in part, their higher level of mating effort. Third, mating effort and sexual drive are associated with different dimensions of sexual criminal activity in adulthood. More specifically, high mating effort and a high sexual drive were associated with an earlier age of onset and a higher annual frequency of sexual offending in adulthood. These three key findings can be interpreted as evidence of an alternative approach to procuring and acquiring sexual opportunities and conquests. We refer to this pattern of behavior as antisocial sexuality.

**TABLE 3. Hierarchical Regression Analyses for Variables Predicting Parameters of Sexual Offending in Adulthood**

	Age at First Charges for a Sexual Crime <sup>a</sup> ( <i>n</i> = 203)			Annual Frequency of Sex Crime <sup>a,b</sup> ( <i>n</i> = 204)			Level of Specialization in Sex Crimes ( <i>n</i> = 204)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Ethnicity	4.03 (.03)	6.83 (.04)	12.27 (.08)	-1.29 (-.01)	-3.19 (-.02)	-11.28 (-.07)	-.10* (-.14)	-.09+ (-.13)	-.09 (-.12)
Level of education	5.33 (.03)	.99 (.01)	4.58 (.02)	-.59 (-.00)	2.49 (.01)	-.85 (-.00)	.17** (.19)	.16* (.17)	.18** (.19)
Marital status	-5.36 (-.04)	-5.29 (-.04)	-4.03 (-.03)	-4.06 (-.03)	-3.95 (.031)	-5.56 (-.04)	.01 (.02)	.01 (.02)	.01 (.02)
Employment status	18.56* (.15)	17.68* (.15)	18.02* (.15)	-18.29* (-.15)	-17.75* (-.15)	-18.38* (-.15)	.08* (.14)	.08* (.14)	.07* (.14)
Early-onset antisocial trajectory		-24.75** (-.21)	-14.48+ (-.12)		17.63* (.15)	3.37 (.03)		-10** (-.18)	-.08* (-.16)
Sexual drive			-2.47* (-.15)			3.85** (.24)			.00 (.01)
Mating effort			-3.44** (-.19)			4.11** (.23)			-.01+ (-.12)
Constant	87.60***	99.36***	89.77***	107.68***	99.42***	113.16***	.31***	.35***	.34***
<i>F</i>	1.46	3.06*	4.43***	1.21	1.90+	5.40***	4.44**	5.10***	4.10***
<i>R</i> <sup>2</sup>	.03	.07	.14	.02	.05	.16	.08	.11	.13

*Note.* The first line of data represent unstandardized beta coefficients, the second line represents standardized coefficients. Ethnicity was coded as White = 1, non-White = 0. Level of education was coded as high school or above = 1, less than high school = 0. Marital status was coded as not single = 1, single = 0. Employment status was coded as employed = 1, not employed = 0. On each of the latter variables, less than 5% of cases were missing data. Missing data were replaced with the mode of the data. An early-onset antisocial trajectory was coded as early onset = 1, late onset = 0.

<sup>a</sup>*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

<sup>b</sup>The rank-ordered distribution of the dependent variable was analyzed (Conover & Iman, 1982).

<sup>c</sup>Controlled for time spent in custody.

## **Antisocial Sexuality**

Antisocial sexuality may involve the use of overt and covert antisocial behaviors (Loeber & Hay, 1994) to acquire sexual opportunities. It involves a pattern of sexual behavior that is characterized by a preference for easy, short-term, and immediate sexual gratification compared to investment in and commitment to a stable long-term intimate relationship. Based on the findings from this study, this pattern of sexual behavior involves at least two key dimensions of sexuality: (1) preference for partner diversity (i.e., high mating effort); and (2) a general lack of control over sexual urges, thoughts, and behaviors (i.e., high sexual drive). These two dimensions of sexuality were evident to different degrees in the present sample of sexual aggressors: They were sexually active during childhood and adolescence, were successful in terms of their sexual endeavors, and, overall, had an above average self-evaluation of their sexual competence. In contrast to their preference for partner diversity, they exhibited a lesser degree of sexual fantasizing and invested less time in sexual endeavors (e.g., viewing pornography, frequenting strip bars) and self-directed sexual release behaviors (e.g., frequency of sexual fantasizing, compulsive masturbation). Therefore, as a group, these sexual aggressors of women were not sexually deprived, repressed, or lacking confidence in their sexual abilities. In addition, we did not find evidence supporting the notion that they lacked skills to acquire heterosexual contacts. Importantly, this pattern of antisocial sexuality was even more pronounced in early starters compared to late starters.

## **Antisocial Trajectories and Antisocial Sexuality**

Differential patterns observed in the trajectories for nonsexual antisocial behaviors (i.e., behavioral problems, nonviolent and violent delinquency) paralleled differences with measures of mating effort and sexual drive. These findings were consistent with empirical studies that demonstrated significant relationships between antisociality and sexual promiscuous behaviors in community and correctional samples (Lussier et al., 2007; Malamuth, 1998). Early starters reported an earlier onset of sexual contacts and intercourse, more sexual partners, and a higher frequency of sexual interactions compared to late starters. These results appear to reflect a stronger preference for partner diversity among early starters, given that the two groups did not differ regarding their self-perceptions of sexual competence. One explanation for these findings is that early starters exhibited a higher sexual drive than late starters. Importantly, the impact of an early-onset antisocial trajectory on mating effort disappeared after controlling for a high sexual drive. Hence, a high sexual drive might explain the link between early-onset antisociality and mating effort. Although both early- and late starters exhibited high mating effort, the lack of control over the sexual drive might explain a stronger inclination for partner diversity in early starters, as well as differential patterns in sexual criminal activity between early and late starters.

## **Sexual Aggression in Adulthood**

Our findings are consistent with developmental literature (Le Blanc & Bouthillier, 2003; Moffitt et al., 2002) that stipulates an early onset of antisocial behavior indicates the antisocial potential of offenders. More specifically, as the antisocial potential of offenders increases, the more likely it is that these individuals will revert to antisocial strategies to obtain immediate sexual gratification (Lussier et al., 2005). For example, several covert strategies (i.e., deceit, manipulation, false charm) and overt strategies (i.e., coercion and violence) increase the likelihood of acquiring sexual opportunities while minimizing the

necessity to commit to a stable intimate relationship (Lalumière et al., 2005). Sexual aggressors of women might revert to overt strategies (i.e., aggression) when a consenting partner is temporarily not available, when noncoercive strategies were unsuccessful, or when they experienced rejection by a potential sexual partner.

Our findings supported such a pattern of behavior considering that sexual aggression did not appear to be the preferred mode of sexual expression. For example, the offenders in our sample reported a substantially higher number of female sexual partners and frequency of sexual activities with a partner than they did with acts of sexual aggression. Furthermore, a preference for partner diversity and lack of control over the sexual drive were unrelated to specialization in sexual criminal activity in adulthood. Rather, the finding that late starters were more likely to specialize in sexual crimes might be more reflective of the overall limited criminal involvement that characterizes individuals in this trajectory (Cale et al., 2009). On the other hand, the use of aggressive strategies was more likely to occur earlier and more frequently among individuals characterized by a preference for partner diversity and lack of control over sexual urges, thoughts, and behaviors.

Early- versus late-starters differed in terms of the onset and repetition of sexual criminal activity in adulthood. More specifically, early starters began sexually offending in adulthood earlier and repeated sexual crimes more frequently than late starters. However, a preference for partner diversity and a high sexual drive was related to the link between antisocial potential (i.e., an early-onset antisocial trajectory) and sexual criminal activity. With regard to this, the sexuality and offending pattern of early starters may reflect an alternative lifestyle characterized by diversity in sexual experiences rather than self-perceptions of inadequacy and frustration. Furthermore, a more pronounced pattern of antisocial sexuality in early starters might explain why they were more likely to revert to sexual aggression compared to late starters. In effect, for early starters, sexual aggression may be more likely to occur when less aggressive tactics (i.e., coercion, manipulation, deceit) fail to procure sexual opportunities.

Nonetheless, there was evidence of a lesser pattern of antisocial sexuality in late starters as well. One explanation for this may be that the impact of adolescent delinquency had negative implications for future stable and long-term prosocial relationships. For example, the negative consequences of certain adolescent and young adulthood sexual activity (e.g., contracting sexually transmitted diseases, fathering multiple children) may have contributed to problems finding and maintaining stable and long-term relationships later in life. In turn, this may have resulted in the longevity of a mating strategy characterized by the pursuit of multiple and diverse sexual opportunities. Similar to their zigzag criminal involvement (i.e., unstable and episodic patterns of criminal activity; Laub & Sampson, 2003), life events (i.e., divorce, separation) may have had more of an impact on the development of antisocial sexuality.

## **CONCLUSION**

The findings from this study hold important implications for the treatment of sexual aggressors. Considering that antisocial trajectories carry implications in the sexual lifestyle of these individuals, attention should be focused on the overlap of behaviors in antisocial and sexual domains such as sensation-seeking, manipulative, authority defiant, and aggressive attitudes. In this regard, a pattern of antisocial sexuality characterized by the lack of control of sexual urges, thoughts, and behaviors and a preference for

multiple- and short-term sexual conquests and sexual aggression need to be addressed by treatment modalities.

The findings from this study should be interpreted as exploratory. Furthermore, this study suffered from numerous methodological limitations. First, because the sample consisted of federal inmates at a regional treatment facility in the province of Quebec, Canada, the results may only generalize to federal inmates. Another key limitation is that this study was based on retrospective data. Therefore, the identification of early- and late-onset antisocial trajectories and the sexual histories of the individuals in the sample may have been biased by poor memory recall in addition to minimization or exaggeration of particular responses. In this regard, another key limitation was that it was not possible to assess the effects of social desirability of the responses. Finally, sexual criminal activity in adulthood was based on official data, and it is therefore possible that the results may have differed if self-reported data were used. Nonetheless, the exploratory results, garnered by the study, warrant further examination into the relationship between antisocial and sexual development in sexual aggressors of women.

## NOTES

1. Generally, developmental criminologists have been concerned with the age of onset of offending, whereas developmental psychologists have been concerned with the age of onset of antisocial behaviors.

2. Subjects included in this study signed a consent form indicating that the information gathered was to be used for research purposes only. Interviewers were all graduate students in criminology and psychology, trained by a licensed forensic psychologist to conduct semi-structured interviews using a computerized questionnaire.

3. The basis for this decision was primarily theoretical. The goal of retaining this distinction was to remain consistent with current literature to empirically assess developmental theory (more specifically, the early onset [i.e., life-course persistent] and late onset [i.e., adolescent-limited distinctions]). In the context, it has been applied to sexual aggressors of women (e.g., in the context of mating effort and early starters; Lalumière et al., 2005; Seto & Barbaree, 1997). The data pertaining to within-group trajectories is to be presented in a follow-up study.

4. The current article was primarily concerned with testing differences that distinguished early-onset offenders in terms of mating effort, sexual drive, and sexual criminal behavior in adulthood. In effect, the combination of the initiator and nondelinquent groups provided a reference group for this analysis. The purpose of combining initiators and nondelinquents was the common ground that they did not exhibit a childhood-onset of antisocial behavior.

5. These three parameters were measured using CPIC (Canadian Police Information Centre) data collected by the RCMP (Royal Canadian Mounted Police).

6. The CPIC database does not include data on youth offending, but there are some exceptions. Youth offences carry an expiry date and once they have expired, charges are removed from the criminal record. When an individual has been found guilty of a subsequent crime as an adult, before the end of the expiry date, the youth offences are treated as adult charges.

7. For bivariate comparisons, the means of the original nontransformed variable are reported.

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Correspondence regarding this article should be directed to Jesse Cale, PhD, Griffith University, Key Centre for Ethics, Law, Justice, and Governance, Mt. Gravatt Campus, 176 Messines Ridge Road, Brisbane, QLD, Australia, 4122. E-mail: jcale@griffith.edu.au