Patterns of criminal achievement in sexual offending: Unravelling the "successful" sex offender

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Abstract

Purpose: The current study examines significant variations in criminal achievement across sex offenders. To examine the "successful" sex offender, the study proposes a concept of achievement in sexual offending defined as the ability to maximize the payoffs of a crime opportunity while minimizing the costs.
Methods: The study is based on a sample of convicted adult male sex offenders using retrospective longitudinal data.
Results: The study findings show a wide variation in criminal achievement, a variation that is not correlated with the severity of sentences meted out or the actuarial risk scores obtained by these offenders. Those offenders who specialize in sex crimes were shown to be the most productive and least detected offenders. Two types of successful offenders emerge, the first relying on his conventional background in targeting a victim that can be repeatedly abused for a long period without detection. The second is a younger offender that is successful in the sense of being able to complete aggressions on multiple victims.
Conclusions: Results suggest that the successful sex offender is not "detected" once he enters the criminal justice system, nor is he handled in a way that may deter him from sexually reoffending in the future.

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After more than 50 years of research on sexual recidivism, researchers have been unable to provide a formal evidence-based explanation of the criminal activity of sexual offenders. The risk factor approach taken and pursued over the years have restrained possibilities of understanding the criminal career dynamics of individuals committing sex offences and recent empirical studies have emphasized the need to correct this (e.g., Amirault & Lussier, 2011; Lussier & Davies, in press; Lussier, Tzoumakis, Cale, & Amirault, 2010). In that regard, this study is a departure from past research on this issue. The aim is not to identify a predictive model of sexual recidivism but rather to understand what is being predicted and who is being identified in the process. Sexual recidivism or in more technical terms, sexual rearrest and sexual reconviction, have become the gold standard measures to determine risk. While researchers have acknowledged that "official recidivism" carries an important limitation (i.e., it measures official reoffending or the likelihood or being caught, again), it has served to establish the risk of recidivism, the prevalence of dangerous offenders, who the dangerous offenders are and how to identify them using actuarial tools. In the process, these studies have helped condition the criminal justice's responses to sex crimes through strategies assumed to increase community protection (such as civil commitment, public notification, house residency restrictions, and electronic monitoring). Often relying on actuarial tools that identify the medium- and high-risk sex offenders (e.g., Lieb, Kemshall, & Thomas, 2011; Lussier, Deslauriers-Varin, & Ratel, 2010; Lussier & Healey, 2009), these post-release strategies bring significant costs, impact the workload for probation/parole officers, and yet, their ability to reduce the risk of sexual recidivism remains unclear (e.g., Armstrong & Freeman, 2011; Mancini, Shields, Mears, & Beaver, 2010; Payne & DeMichele, 2010). By targeting offenders who are more likely to be rearrested or reconvicted as suggested by empirical studies, research may have systematically overlooked an important subgroup of sex offenders that do not fit the usual patterns. The predictors (i.e., risk factors) and the criterion (i.e., sexual recidivism) used by risk assessors to identify medium-risk and high-risk offenders are all based on official measures of

offending (e.g., prior conviction for a sex crime). By relying on "official" indicators, the criminal justice system has focused on offenders more likely to have come to the attention of the police and the courts. Is it possible that the criminal justice system is not targeting the most prolific and dangerous sex offenders?

To identify the "high-risk" offenders, the criminal justice system has relied on a-theoretical actuarial tools that do not take into account the criminal achievements of these offenders. Is it possible that the criminal achievement of adult sex offenders is telling a different story than the one told by actuarial tools? Drawing from the scientific literature on the criminal achievement, the current study revisits the "sexual recidivist" by examining its criminal career, both in terms of offending productivity and cost avoidance, to determine whether the most successful offenders are what the criminal justice system considers the "high-risk" sex offenders. To do so, an empirical study based on a large sample of convicted sex offenders is conducted to examine the variations in productivity and impunity in sex offenders. While it could be argued that studying inmates for criminal achievement is paradoxical given that they have already been caught, an analysis of both the criminal earnings (Morselli & Tremblay, 2004), and the study of sanction avoidance (Bouchard & Ouellet, 2011; Kazemian & LeBlanc, 2007) of inmates show much variations prior to incarceration. We believe that the same may apply to individuals committing sex crimes. In the next section, we first review the scientific literature on criminal achievement and relevant findings to approach the issue of offending productivity and cost avoidance in sex offenders.

Literature Review

Criminal Achievement

Criminologists typically understand the criminal career to represent the longitudinal sequence of crimes committed by an individual offender. Since the publication of the "Criminal Careers and Career Criminals" (Blumstein, Cohen, Roth, & Visher, 1986), research on this issue has evolved around three main themes: (a) the modeling of offending, the longitudinal sequence of crimes, crime

specialization, and the study of the "chronic offender" (e.g., Farrington & Loeber, 1998); (b) the understanding of criminal persistence by examining the role of formative years, early life stages and the study of the "early onset" offender (e.g., Moffitt, 1993), and; (c) the life events, life transitions, informal controls, and the study of the "desistor" (e.g., Sampson & Laub, 2005). A fourth theme emerged more recently, as research on the sociology of crime and criminal achievement, the role of mentorship, criminal networks, and professionalization has helped garnered information about the "successful criminal" (e.g., Bouchard & Nguyen, 2010; McCarthy & Hagan, 2001; Nguyen & Bouchard, 2011; Tremblay & Morselli, 2000; Morselli & Tremblay, 2004; Tremblay, 2010). The focus of criminal achievement studies is not so much the volume of criminal activity or the individual frequency rate of offending, or lambda (λ), but the examination of whether crime pays, what the payoffs are, and for whom. The study of criminal achievement has its roots mostly in the study of economic and market crimes.

Underlying the concept of criminal achievement is productivity or performance and efficiency in securing something valuable to the perpetrator (i.e., money, goods, status, etc.). Performance and efficiency therefore represent the maximization of gains relative to the number of crime(s) perpetrated which is distinct from λ. Highrate offenders may settle for low payoffs and low rewards opportunities, while others may restrict their volume of offending while seizing more profitable and rewarding ones (Tremblay & Morselli, 2000). Illegal income has often been used as a performance measure of criminal achievement (e.g., McCarthy & Hagan, 2001; Nguyen & Bouchard, 2011; Tremblay & Morselli, 2000; Wilson & Abrahamse, 1992). Illegal success varies across offenders and a few hypotheses have been raised to explain such variations, such as criminal capital (i.e., criminal experience, or skills) (Bouchard & Nguyen, 2010; McCarthy & Hagan, 2001; Nguyen & Bouchard, 2011), especially those learned through offenders' social capital (i.e., resources found in offenders' relationships to others) (Bouchard & Ouellet, 2011; Bouchard & Nguyen, 2010; Morselli & Tremblay, 2004; Morselli, Tremblay, & McCarthy, 2006; McCarthy & Hagan, 2001), and even low self-control

(Morselli & Tremblay, 2004). McCarthy and Hagan (2001), for example, showed that crime specialization, a desire for wealth, and willingness to collaborate with others have all been associated with higher criminal earnings. More specifically, the presence of a criminal network and a mentor can help increase criminal opportunities as well as recognizing the most profitable ones (Nguyen & Bouchard, 2011; Morselli Tremblay & McCarthy, 2006). Mixed evidence has been found regarding the impact of conventional capital (such as educational attainment and involvement in the legitimate labour market) on criminal earnings (e.g., Charest & Tremblay, 2009; McCarthy & Hagan, 2001; Tremblay & Morselli, 2000).

Criminal Achievement and Sexual Offenders

At first glance, the idea of an offender contemplating the idea of pursuing his criminal career for monetary gains, goods, status, and prestige could not be more remote than the one involving an offender contemplating the idea of committing a sex crime. While the concepts of career and achievement are perhaps more intuitively suited for the study for economic and market-type offences, their application to sexual offending is certainly worth consideration[1]. The criminal sexual behavior, just like consenting sexual behaviors, carry something valuable to the offender, that is, sexual gratification. The inspection of sex offender's criminal behavior has lead researchers to conclude that they make a series of rational decisions to obtain sexual gratifications through illicit means, such as victim selection, determining crime location, planning victim transport to the crime site, and choosing a method of attack (e.g., Beauregard, Proulx, Rossmo, Leclerc, & Allaire, 2007; Beauregard, Rossmo, & Proulx, 2007; Deslauriers-Varin & Beauregard, 2010). The rational and strategic sex offender (Beauregard & Leclerc, 2007) may use deception, manipulation, alcohol/drugs, coercion, threat and/or physical violence to obtain sexual gratifications (e.g., Koss, Gidycz,&Wisniewski, 1987; Leclerc,

[1] Like market offences (e.g., Tremblay & Morselli, 2000), sex crimes provide a variety of benefits to the offender, including psychological benefits such as intimacy, self-esteem, excitement (thrill), power, control, and retribution (Felson, 2002; Groth, 1979; Knight & Prentky, 1990; Lussier, Proulx, & LeBlanc, 2005; Marshall, 1989; Baumeister, Catanese, & Wallace, 2002). However, sex crimes can provide sexual gratifications to the offender, something that feminists (e.g., Brownmiller, 1975) have brushed aside as irrelevant to the understanding of sex offences. We disagree. More recent studies have shown empirical evidence supporting the importance sexual gratifications in sexual offending, without denying the presence of other benefits it can provide the offender (e.g., Bryden & Grier, 2011; Lussier, Proulx, et al., 2005; Mann & Hollin, 2007).

Proulx, Lussier,&Allaire, 2009). In fact, the dichotomy between the thief and the sex offender may be more apparent than real as individuals committing sex offences are criminally versatile – i.e., they steal, rob, burgle, fraud, and deal drugs (e.g., Lussier, LeBlanc, & Proulx, 2005; Miethe, Olson, & Mitchell, 2006; Simon, 2000; Soothill, Francis, Sanderson, & Ackerley, 2000).We further make the argument that a majority of individuals committing a sex crime approach their sex offence in the same way they would approach any other type of crime. In a sense, we echo Tremblay and Morselli's (2000: 645) observation that criminal achievement "does not depend so much on the kind of crime(s) ones commit but how one goes about doing it".

The current study therefore aims to examine whether criminal achievement in sex offending is a viable concept. Until recently (Blokland & Lussier, in press), the examination of the offending behavior of sex offenders had been a circumspect one. Researchers have limited their investigations to the following three criminal activity features: (a) frequency, and to a lesser extent λ; (b) recidivism or the likelihood of being re-arrested again during a determined follow-up period, and; (c) crime specialization (e.g., Hanson & Bussière, 1998; Lussier, 2005; Soothill, 2010). To our knowledge, the concept of criminal achievement in sex offending has never been examined. The predominance of a psychiatric approach to the issue of sexual offending is no stranger to this situation given that, under this perspective, sex offenders are driven by uncontrollable fantasies and urges creating significant amount of distress to the perpetrator (e.g., see Laws & O'Donohue, 2008; Task Force Report of the American Psychiatric Association, 1999). This conception of the "distressed" offenders, therefore, is difficult to reconcile with the vision of a rational individual trying to maximize crime payoffs. Several clinical researchers took a stance against such a generalization, arguing instead that different pathways best described sex offending and re-offending, including one characterizing a group of individuals seeking sexual gratifications through illicit means and feeling no remorse or cognitive dissonance with their offences (e.g., Hudson, Ward, & McCormack, 1999; Ward & Hudson, 1998). This group is of particular interest here. Further, we argue that criminal achievement may be measured just as well with

sex offenders as it is with money oriented offenders. The challenge, however, lies in translating the concept into theoretically meaningful indicators. We draw from past research and define sexual crime achievement as (1) the ability to maximize pay-offs from sexual crimes, and (2) the ability to avoid detection and sanctions.

Sexual Offending and the Maximization of Pay-Offs

The measure of criminal earnings has been at the forefront of past research on criminal achievement. One needs to go no further than Morselli and Royer (2008: 7) who defined the criminal achievement framework as built on three premises: (1) crime is a means to an end; (2) financial outcomes are fitting indicators of such ends; and (3) once we identify the factors that account for variations in financial outcomes from crime we can distinguish the significant minority of serious offenders (in that they take crime seriously) from the majority of opportunistic, sporadic, and lower earning offenders. This framework is limiting for our purposes in that it reduces achievement to earnings indicators, thereby excluding other potential indicators of success such as the ability to avoid detection, or any other non financial benefits from crime. The criminal achievement framework may be extended to accommodate sexual offending by replacing the concern for financial outcomes with the more general notion of "payoff", or "rewards" from crime. Whether such rewards are financial or sexual is a matter of (offending) context. In other words, while the successful thieves will seek opportunities that can generate maximum payoffs (i.e. larger amounts of money per crime committed), we make the argument that sexual offenders, at least some of them, may be looking for vulnerable victims with the maximum payoffs – i.e., a high number of sexual contacts and, by extension, of sexual gratifications. Notice that using money earned as an indicator of achievement is one step beyond a measure of offending frequency. In fact, it explicitly recognizes that large sums of money may be earned in at least three ways: (a) through the commission of a large volume of crimes at smaller pay-offs per crime, or (b) through the commission of a more limited number of high pay-off crimes, or less frequently (c) through the commission of a large number of high pay-off crimes. As such, the

frequency of crime commission becomes a predictor of money earned from crime to the same extent that skills, or social capital may be. Whether the money is earned efficiently or not becomes almost secondary.

We believe that the translation of pay-off issues to sexual offending requires that the frequency of crime commission becomes in itself, part of the indicator of success. For sexual offending, an effectively completed crime contributes literally to make an offender "successful". The more of those effectively completed crimes per unit of time, the more productive and successful the offender is. This form of measurement assumes that each sexual crime brings an equal amount of gratification, an assumption which may be violated in many instances. This is why the number of victims should also be taken into account. For some offenders, success will be measured by the number of different victims they successfully approached/attacked (i.e., "the successful rapist"). For others, success will be measured by their capacity to find an opportunity they can exploit repeatedly (i.e., "the successful child molester"). The current study considers both types of measures as indicators of sexual crime achievement.

Cost Avoidance and Sexual Offending

Criminal achievement as offending productivity would be incomplete without the concept of impunity and cost avoidance. Despite ongoing research on the risk of apprehension (q) in various crime types (e.g. Bouchard, 2007; Collins & Wilson, 1990), it has been a neglected area in sexual offending research (Bouchard & Lussier, 2011), and consequently, the ability to escape detection and avoid sanction has been overlooked. Generally speaking, research in economic and market offences has shown that offenders differ in terms of their ability to avoid detection (e.g., Bouchard & Nguyen, 2010; Bouchard & Ouellet, 2011; Kazemian & LeBlanc, 2007; McCarthy & Hagan, 2001). There is much heterogeneity in cost-avoidance reported for victimless crimes (e.g., drug selling), and there are no a priori reasons to believe that it is not the same for victim-type offences. Some offenders are better than others at avoiding detection, and the same applies to sex offenders (Beauregard & Bouchard,

2010). Yet, it is commonly believed that, most of the time, sex offenders get away with their crime. While it is understood that official data on offending is only capturing a proportion of the total criminal activity of sex offenders, Gene Abel's oft-cited self-report study on men referred to his clinic (Abel et al., 1987; see also Weinrott & Saylor, 1991) suggested that this proportion may be minuscule[2].Two decades earlier, however, Gebhard et al. (1965) conducted a large survey of sex offenders in a prison setting and reported that about 15% of sex crimes committed by sexual aggressors of women were unknown by the authorities. The proportions were 20% for incest offenders and 29% for exhibitionists. Those numbers were less spectacular and might explain the fact that they went almost unnoticed by the scientific community. Yet, these numbers were informative in suggesting that q (the risk of apprehension) may increase when the offender is not a relative of the victim and when violence is used. Gebhard et al.'s (1965) results are in line with those reported with general samples of offenders which showed that violent offenders, as well as frequent drug users with a history of unemployment and job instability are not as successful at avoiding detection (e.g., Kazemian & LeBlanc, 2007). Gebhard et al.'s study was also informative in suggesting that different criminal opportunities could condition the risk of apprehension. Indeed, their findings highlighted the fact that when a child victim was targeted, an adult friend or relative was usually reporting the event to the police. The child tended not to maintain secrecy in situations where physical violence was used. When a female adult was targeted, it is typically the victim herself who reported, which may also explain why these offenders were more likely to be arrested.

[2] For example, the 224 heterosexual child molesters interviewed revealed a total of 4,435 victims, the 153 homosexual child molesters were responsible for 22,981 victims while the 126 rapists interviewed reported 882 victims. These numbers not only suggested that all sex offenders were extremely active, but also that q (risk of apprehension) was extremely low. Such numbers, however, have never been replicated and their validity has been questioned (e.g., Marshall, Barbaree, & Eccles, 1991). Furthermore, individual rates of offending (and variation of) were not presented, creating the impression that all sex offenders were chronic sexual deviates, an impression that was well suited to the idea that all sex offenders were in need of a specialized assessment/treatment in a clinical setting.

Methodology

Sample

As part of a research project on recidivism, all individuals consecutively admitted to a Canadian federal penitentiary for a sex crime between April 1994 and June 2000 were recruited. Those individuals have been convicted to a sentence of at least two years. In total, 93% of individuals approached (n=553) agreed to participate in the study. At the time of the study, all participants were incarcerated in a maximum security institution operated by the Correctional Service of Canada. On average participants stayed at the Reception Centre for about six to eight weeks while their level of risk and rehabilitative needs were assessed. After this assessment, participants were transferred to an institution that best suited their risk and needs. The study is based on the first 373 consecutive cases who agreed to participate[3]. Complete and detailed information on the criminal career was made available for the first 373 recruited cases and, as a result, this group was selected for this study. All participants were male, averaged 39.2 years old (SD=12.0), and were mostly Caucasian (87.3 percent). On average, these men have been charged for 3.6 sex offences (SD=2.8). In total, 41.1 percent of this sample offended strictly against children (0–12 years old), with the remaining offended against adolescents (16.2 percent), adults (30.4 percent), or multiple victim categories (12.3 percent). Also, 16.3 percent of this sample offended only against their biological child(ren) (intrafamilial, or incest), while 77.5 percent offended against victims other than their child(ren) (extrafamilial), and 6.2% offended against both intra and extra familial victims.

Procedures

All study participants met individually with a research assistant in the weeks after their admission to the penitentiary. The offenders included in this sample had received their classification

[3] The study was based on the first 373 of the 553 consecutive admissions at the penitentiary, or between 1994 and 1998. We conducted a series of comparative analyses to determine whether the 373 offenders selected were comparable or different to the 160 excluded cases using a series of descriptive indicators. We did not find any differences between the two groups in terms of education, ethnic origin, length of the prison sentence, victim type, and nature of conviction for index offence. However, the selected sample was younger at prison admission. This difference suggests a temporal effect in the offender's age at admission during the study period (1994–2000), where relatively older offenders were incarcerated towards the end of the study period. It is unclear how these differences can be explained. Age at prison admission was added as a covariate for this study.

risk (i.e., low, medium, high) and were awaiting their transfer into another institution when they met with the research assistant. All research assistants were graduate students in criminology or psychology and trained by a licensed psychologist. Participation in this study was strictly voluntary, and all subjects signed a consent form indicating that the information collected would be used for research purposes only. All subjects were explained that their participation would have no consequences on their classification risk (already received) and their prison sentence. Furthermore, subjects did not receive any compensation (e.g., money) for their participation in this study. The participants signed an additional consent form allowing access to their Corrections files. When participants granted their consent, Correctional Service of Canada allowed inspection of the individual's correctional file. Correctional files were used to code information on the criminal history of each individual included in the study. All files included information about the participants' official records based on the Royal Canadian Mounted Police (RCMP) record. RCMP data was then used to establish offenders' criminal histories.

Measures

Actuarial Risk of Sexual Recidivism

For descriptive purposes, the scores on the Static-99 (Hanson & Thornton, 2000) were used to inspect the level of actuarial risk in this sample of adult sex offenders. The instrument is composed of ten risk factors having been shown to be empirically linked to sexual recidivism (i.e., reconviction). The items comprising this actuarial tools refers mainly to official indicators of general (e.g., number of prior sentences), violent (e.g., prior charge/conviction for a violent crime; evidence of violence in the commission of the offence), and sexual offending (e.g., number of prior charges/conviction). The instrument also includes items related to sexual offences (e.g., gender of victim) and socio-demographic indicators (e.g., age; marital status). Scores vary between zero and twelve (a higher score indicative of a higher risk) and are indicative of the risk status of the individual: (a) low; (b) medium-low; (c) medium-high, and; (d) high-risk. Risk scores were compiled at prison admission and the mean

for this sample was 2.69 (SD=1.92; range: 0–9) with 30.1% being low risk, 38.7% being medium-low, 23.4% being medium-high and 7.8% being high risk. Because of the small number of high-risk offenders, this group was collapsed with the medium-high risk group for analyses. The Static-99 was scored based on information available at prison admission.

Measures of sexual crime achievement

Table 1 presents the indicators used and the coding for each of them. The key variables for this study were the number of sexual crime events and the number of victims as they allow the computation of offending productivity. This information was available for 369 of the 373 subjects included in the study. The number of events refers to the total number of separate occasions in which the offenders had sexual interactions with a victim. Productivity was simply computed by dividing the number of crime events by the number of victims. Both the number of crime events and victims refer to the events that lead to the current conviction. Hence, these indicators do not include events or victims of past convictions. To control for this aspect, we included a measure of prior conviction for a sex crime. This indicator also allows examining the link between past conviction and criminal achievement and answer questions such as whether those with a prior sex crime conviction are detected or convicted sooner than others. In total, 33.3% of this sample had a prior sex crime conviction. Two λ measures were created simply by dividing both the number of crime events (λ events) and the number of victims (λ victims) by the time at risk. Time at risk refers to the non incarcerated time spent in the community since turning eighteen years old. For cost avoidance, we included a measure indicating the time (months) that elapsed between the onset of offending (i.e., date of first crime event) and the beginning of sentencing (i.e., date at prison admission). The onset of offending refers to the date of the first crime event that led to the current conviction. Date at prison admission was used because there was no information available on the date of detection[4]. Hence, our

[4] The time gap between detection and prison admission vary across sex offenders. One study conducted on child sexual abuse cases reported that the time between law enforcement report and disposition took less than one year in 12% of the cases analyzed but more than two years in 36% (Walsh, Lippert, Cross, Maurice, & Davison, 2008. Case characteristics were found to be weakly linked to the criminal justice processing time. We hypothesize that this gap may be influenced by whether the offender confessed to the police, whether there was plea bargaining, if there was a trial, and the length of the trial.

measure refers to the ability to delay sanctions (Mean=67.7; SD=95.7). The other measure included to tap into the dimension of cost avoidance is the sentence received for the index crime (years) (Mean=4.0; SD=2.8).

--Insert Table 1--

Measures of Conventional and Criminal Capital

Conventional (human) capital refers to the investments individuals make in education, training, and health (Becker, 1962). There have been mixed results about the role of conventional capital in criminal achievement suggesting that conventional capital might be irrelevant to criminal earnings but important to the ability to avoid detection (see McCarthy & Hagan, 2001; Kazemian & LeBlanc, 2007; Tremblay & Morselli, 2000). It is unclear how it might operate in the context of sex offending. In the current study, four indicators were selected in line with prior research in this field; the level of education (Mean=2.3; SD=1.4), employment (employed=37.8%), in a stable intimate relationship (Yes=39.6%) as well as the absence of drug problems (or absence of regular drug use) (55.2%). McCarthy and Hagan (2001) have proposed instead that criminal human and criminal social capital may be more relevant than conventional capital to the issue criminal achievement. They refer to criminal human capital as specialized skills and knowledge about offending, and to criminal social capital which refers to the resources found in the criminal network. For the current study, we focus on the human aspect of criminal capital often operationalized as crime specialization (e.g., McCarthy& Hagan, 2001; Bouchard & Nguyen, 2010; Nguyen & Bouchard, 2011). Criminal capital was measured by a continuous indicator of crime specialization in sexual offending – the proportion of sex crime charges relative to other charges in adulthood (Mean=45.8; SD=35.6) as well as an indicator measuring the level of physical violence used in the commission of sex crimes (Mean=1.1; SD=0.8). Level of physical violence was added as a proxy for criminal capital as more successful offenders may possess the skills and knowledge to avoid excessive physical violence which may increase the likelihood of victim physical/verbal resistance and of reporting the crime to the police. We also

included a measure representing the percentage of time free or not incarcerated since turning 18 years old (Mean=72.2; SD=28.4). In line with previous research, this indicator was used as a measure of general criminal experience (Bouchard & Nguyen, 2010; McCarthy & Hagan, 2001; Nguyen & Bouchard, 2011). Hence, these two indicators of criminal capital were included on the assumption that the most successful sex offenders are more specialized in sex crimes and are least likely to use physical violence during their offence and have more criminal experience.

Analytical Strategy

The analyses are divided in three sections. First, we looked at the offending productivity broken down into multiple categories to determine the prevalence of offenders along the continuum of productivity, but also to inspect how heterogeneity in offending productivity varies in terms of nature and rate of sexual offending, cost avoidance, and actuarial risk status. Second, we inspected the covariates of offending productivity to analyze the characteristics of the most successful sex offenders in terms of the nature of their sexual offending, socio-demographics, criminal and conventional capital. The models analyzed were conducted using negative binomial regression with a log link. Negative binominal regression was used over a Poisson regression to address the issue of over dispersion of the variance in offending productivity found in our data. Four measures of offending were necessary for the regression analysis – i.e., number of crime events, number of victims, λ (events), and λ (victims)[5]. Although the four productivity indicators were analyzed, we only report here the covariates of the λ of crime events and the λ of victims due to space limitations. For the number of crime events, the log number of victim was used as an offset variable to determine the covariates of event-to victim ratio. For the λ (events), the number of events was used as the response and the log time-at-risk not incarcerated since turning 18 years old was used as the offset indicator. The same strategy was used for λ (victim). For all covariates examined the odds ratios are presented with a 95% confidence interval

[5] Offending productivity as defined in the current study has a time-component embedded into it which explains our decision to include two λ indicators. It takes time in order to revictimize the same victim more than three hundred times. It also requires a combination of circumstantial and situational factors (e.g., offender's motivation, absence of capable guardian, presence of a vulnerable victim, etc.) that are conducive to a sex crime that may not present itself on a daily basis.

(C.I.). The regression models were conducted to inspect three set of factors: (a)Model 1 is a baseline model that included only offender's age, type of victim targeted, prior conviction for a sex crime; (b) Model 2 introduced measures of conventional and criminal capital specifically, and; (3) Model 3 combined all indicators into a single model. In the third section, the covariates of both detection and sanction avoidance were examined. Cox regression was used for detection avoidance due to the time dependent nature of the dependent variable. Trimmed models were inspected to analyze the contribution of different sets of indicators (i.e., productivity, conventional capital, etc.). Hazard ratios with 95% C.I. were reported. Regression models with a gamma distribution were used to inspect the covariates of sanction avoidance given the asymmetric distribution of the dependent variable. All models were run using PASW statistics 18.0. Due to missing data, the sample size of the multivariate models tested varied between 357 and 363 cases[6].

Results

Descriptive Analyses of Criminal Achievement

Table 2 presents descriptive information on the criminal achievement of the sample of adult sex offenders. More disparity was found between offenders in terms of the number of crime events than the number of victims (the same observation can be made for the two lambda measures). Indeed, a wide gap between the mean (180.7) and the median (5) number of crime events was found, with scores ranging from 1 to 5524 events. The mean number of crime events, therefore, was virtually meaningless. The same could not be said about the number of victims where the mean and median were more in line. In total, 50% of our sample had 5 crime events or less and only 1 victim before getting caught. Hence, it appears that offenders differ more in terms of the number of events they are responsible of than number of victims they offended against. Again, a wide gap between mean and

[6] Hence, of the 373 cases included in this study, a maximum of 16 was lost in multivariate analyses due to missing data (4.3%). Logistic regression models were conducted to identify any pattern in the missing data. Keeping in mind that the missing data was very small, only one trend emerged – i.e., missing data for the number of crime events did not appear to be occurring randomly with respect to age (pb.05) and time-to-sentence (pb.10). The missing cases were older at prison admission (i.e., in their fifties) and delayed detection and sanction (i.e., for about a decade). We suspect that memory recall may have been a factor limiting the estimation of the number of crime events for these cases.

median was found for this indicator directly attributable to the great variance found for number of events. In total 50% or less of our sample had re-offended at least three times against their victim before getting caught. A small group of individuals were much better at delaying detection and sanction as shown by the large standard deviation and the gap between the mean (68 months) and median (24 months) time elapsed between onset of offending and prison admission. Hence, half of this sample survived two years before being sanctioned after committing their crimes. At the end of the spectrum, just over 11 percent of the distribution survived more than 16 years before being sanctioned for their sex crime(s).

--Insert Table 2--

For descriptive purposes, the offending productivity indicator was broken down into multiple categories and crosstabulated with several indicators of productivity, cost-avoidance, sexual offending and actuarial risk (Table 3). Several observations can be made here. First, when looking at the events-to-victim ratio, clearly the norm is to offend only once against the same victim. In total, over 40 percent of this sample was characterized by an offending productivity ratio of 1 or less. In contrast, at the other end of the continuum, just over 11 percent of this sample had a productivity ratio over 300. Second, what appears to have facilitated a high event to victim ratio for the most productive offenders is the ability in delaying detection. Whereas for the less productive offenders the average time between the onset of offending and sanction was just below 16 months, it was close to 20 years for the most productive (>600 and over). Third, offending productivity is clearly unrelated to sentencing. Hence, offending once or 300 times against the same victim leads, more or less, to the same prison sentence. This also speaks about cost-avoidance – i.e., the most productive offenders received the same sentence (more or less) than the less productive offenders even though they were involved in a much higher number of crime events.

--Insert Table 3--

Fourth, as the event-to-victim ratio increases so is the true lambda based on crime events. For example, the offenders having an event-to-victim ratio of 1 or less have a λ of .16 (or .16 event per year at-risk) as opposed to 44.5 for those with a ratio of more than 600. When λ is based on the number of victims, the picture is reversed suggesting that offenders with a low event-to-victim ratio have a victim-rate higher than those with a high event-to-victim ratio. In other words, a substantial group of offenders may choose to offend against multiple victims once as opposed to those who may offend repeatedly against a limited number of victims. The two main strategy scenario is reinforced by the fact that event-to-victim ratio is weakly related ($r=.11$, $p>.05$) to the total number of victims. Fifth, productivity increases when offenders target children (only), and, to a lesser extent, when they target their own. At the same time, the results show that the ability to maximize the number of events per victim is not limited to incestuous fathers. A majority of the most productive offenders were offending against extrafamilial victims. Finally, looking at actuarial scores, the findings show that the high-risk and medium-high risk offenders were mainly amongst the less productive offenders. In fact, 44% of the offenders with an event-to victim ratio of 1 were either medium-high or high risk sex offenders according to the Static-99. At the other end, between 6-7% percent of offenders with a events-to-victim ratio varying between 101 and 600 were medium-high or high-risk sex offenders, while just over 14% of those with a ratio over 600 had the same risk status. Hence, the items of the Static-99 seem to be targeting the less productive sex offenders, who are also the least efficient at avoiding detection. In that regard the correlation between event-to-victim ratio and the Static-99 score is revealing ($r=-.39$, $p>.001$).

Covariates of offending productivity

Lambda (λ) of Sexual Offending

The λ of crime events. In this section, the λ of events and victims were both examined using negative binomial regression analyses[7]. The covariates of the λ of sex crime events were first analyzed (Table 4; Model 1–3). Several key findings were observed. The λ increased with the offender's age (OR=1.05) meaning that the older the offenders were, the higher their rate of offending was. Also, λ increased for those who offended strictly against children (OR=4.01), within the family setting (OR=3.99), and without a prior conviction for a sex crime (OR=.22) (Model 1). Note that these effects remained after holding constant our indicators of conventional and criminal capital (Model 3). The most productive offenders in terms of the λ of crime events were less educated (OR=.76), but employed (OR=2.15), in a relationship (OR=2.45), had no drug problem (OR=1.49) and were more specialized in sex crimes (OR=6.27). Holding constant all other indicators did not significantly impact our measures of conventional and criminal capital. The one exception to this trend is the use of physical violence. In model 3, after controlling for victim characteristics, offender's age and the presence of a prior conviction, the use of violence emerged as a significant predictor of the λ of crime events (OR=.80). Some offenders, therefore, may revert to physical violence to increase their crime payoffs over a shorter period of time.

--Insert Table 4--

The λ of victims. The next set of regression models examined confirms that the covariates of the λ based on the number of victims were operating differently than with the ones based on the λ of the number of crime events. Whereas a positive relationship between age and number of events was found earlier, a negative relationship is now found between age and number of victims (Model 1). In other words, the younger the offender, the higher the lambda of victims (OR=.97). Note that none of the

[7] The volume of offending (number of crime events and number of victims) were also analyzed using the same strategy. The findings were similar to those observed for the λ of crime events and the λ of victims. The findings are available upon request to the first author.

victim characteristics are significant in model 1. These results suggest that, to some extent, both sexual aggressors of children and sexual aggressors of women may be as successful in offending against multiple victims. However, the association with intrafamilial victim became marginally significant ($p>.10$) in model 3, suggesting a separation between incestuous aggressors and others when it comes to offending against multiple victims. The negative OR shows a reverse the one found in the crime event model where non incestuous offenders have a higher likelihood of increasing their lambda of victims. In model 2, it can be observed that conventional and criminal capitals are not significantly associated with λ. In fact, the regression model is not significant. When adjusting for other covariates (model 3), crime specialization becomes significant (OR=1.98), with the most productive offenders being more specialized in sexual offending (Model 3). Taken together, not only sex crime specialists had a higher volume of events and victims, but offended at a higher rate irrespective of the strategy taken (event oriented, victim-oriented)[8].

Additional analyses were performed to determine whether our findings were attributable to extreme cases in the sample or describing a trend in the data. Both indicators of productivity were dichotomized[9]. For event-to-victim ratio, we found much similarity in the findings with respect to the offender's age at prison admission, victim characteristics (targeting children, intrafamilial), prior conviction and crime specialization. Note here that none of our measures of conventional capital were associated (all p values > .10) with the event-to-victim ratio contrary to what had been reported earlier. This suggested to us that a subgroup of offenders might have been responsible for this earlier finding. In other words, conventional capital might operate only for the most successful offenders, or it may be that conventional capital may help offenders beyond a certain threshold of offending productivity[10].

[8] In a series of models (not shown), we analyzed the number of crime events per victim by adding the number of victim as a covariate to the models. Also, when analysing the number of victims, a model was conducted including the number of crime events as a covariate. In both cases, the addition did not change the model and the added covariate was not statistically significant ($p>.10$). This finding is in line with our hypothesis that maximizing the number of victims and maximizing the number of events are two distinct offending strategies.

[9] The covariates of the number of victims [0=one victim (61.4%); 1=at least two victims (38.6%)] and the event-to-victim ratio [0=ratio equal or smaller than one (41.7%); 1=ratio superior to one (58.3%)] were analyzed using a series of logistic regression (not shown).

[10] To further clarify the issue, negative binomial models were performed again, removing the 5%, 10%, 15%, 20%, and bottom 25% of cases (in terms of productivity) in a series of models. The coefficients for the measures of conventional capital become unstable and non significant after removing the bottom 20% of cases which corresponds to an event-to-victim ratio of 100.

Logistic regression models were also performed on the dichotomized indicator representing the number of victim. As observed earlier, crime specialization emerged as a significant covariate of offending productivity. However, the models also showed that targeting intrafamilial victim was inversely (OR=.44, $p > .05$) related to the number of victims. Hence, these findings may suggest that incestuous fathers may be less likely to move on to other victims outside the family settings. Considering that few other covariates helped distinguish sex offenders who successfully offended against different victims, it seems reasonable to conclude that these productive offenders are of a different kind from those who maximized the number of times they offended against the same victim.

Covariates of cost avoidance

Detection Avoidance

Time-to-sentence. Cox proportional hazard models were conducted to examine the covariates of time-to-sentence or the ability to avoid and delay detection. Hazard ratios for each of the covariates tested in the four tested models are presented in Table 5. Older offenders (HR=.94), targeting exclusively children (HR=.52), without a prior conviction for a sex crime (HR=2.08) survived detection and sanction significantly longer (Model 1). The (inverse) association between a prior record and time-to-sentence reinforces this idea that official data on offending captures, at least in part, cost avoidance. These three indicators remained significantly related to time-to-sentence after adjusting for other covariates (Model 4; Model 5). We did find some evidence suggesting that targeting victims within the familial environment delayed sanction longer (HR=.67; Model 2), but that effect disappeared after adjusting for other covariates. Offending productivity measures were both associated with time-to-sentence, indicating that the most productive offenders both in terms of a higher event-to-victim ratio (HR=.99) and number of victims (HR=.73) were able to delay sanction longer (Model 2). The effects were also observed after adjusting for the other covariates (Model 5). Similarly, the λ of sex offending, both in terms of events (HR=.98) and victim(HR=.27) was associated with the ability to delay detection (Model 2), and the effect remained after adjusting for all other covariates (Model 4).

--Insert Table 5--

Sanction Avoidance

Length of prison sentence. The same modeling strategy was used to examine the covariates of sanction avoidance (Table 5). Using the length prison sentence as a dependent variable here was pivotal to determine whether: (1) the most productive offenders were also those receiving the more stringent sentences, and; (2) the offenders who were the most efficient at avoiding and delaying detection also received more lenient sentences. Several findings confirmed the importance of looking at the covariates of sanction avoidance as an indicator of criminal achievement. First, offenders targeting children only (OR=.86; Model 1), and to a lesser extent, those targeting their own children (OR=.87; Model 1), received a shorter prison sentence. The effects disappeared after controlling for criminal capital suggesting that criminal capital may have carried more weight on the judges' decision than the victim characteristics analyzed here. Second, offenders with more victims received longer prison sentence, this finding being observed both in terms of the volume (OR=1.08; Model 2) and the rate (1.62; Model 1) at which victims were offended against. Third, the most productive offenders, in terms of the number of crime events (OR=1.00; Model 2), did not get longer prison sentence. Hence, the criminal justice system was more concerned by the number of victims than the number of events in determining the prison sentence for the offender. Fourth, level of physical violence also appeared to be an aggravating factor with offenders having used physical violence receiving longer prison sentences (OR=.83; Model 3). This result is consistent with the one observed for detection avoidance. Hence, those offenders committing their crime without using excessive force delay detection longer and received shorter prison sentence. Fifth, crime specialization was inversely related to length of the prison sentence (OR=.83, Model 4; OR=.80; Model 5), with the crime specialists receiving shorter prison sentences. Recall that crime specialization is the only indicator consistently associated with our measures of offending productivity. Taken together, the findings suggest that the crime specialist is not

only more productive but also more efficient at delaying detection and avoiding more stringent sanction.

Discussion

Criminal achievement has traditionally been investigated in economic and market crimes in terms of monetary gains (e.g., McCarthy & Hagan, 2001; Morselli & Tremblay, 2004; Nguyen & Bouchard, 2011; Tremblay & Morselli, 2000). The current study extent this concept to sexual offending and sexual gratification. The study findings highlight that focusing solely on a simple count of the number of convictions for sex crimes does not allow capturing sex offender's offending productivity and cost avoidance. In fact, the findings suggest that criminal achievement in sexual offending may be more complex than the number of victims an offender has forced into sex. Indeed, heterogeneity in offending productivity was much more pronounced for crime events than number of victims. The finding may speak to the nature of offending opportunities in sex crimes as it might be easier for the rational and strategic offenders to repeat offending against a vulnerable victim than finding another one. Two out of five sex offenders in this sample offended, on average, only once against the same victim. Hence, a substantial proportion of offenders settle for one event. This might reflect the importance of sex crimes that are more opportunistic in nature. The image of the low productive offenders is congruent with predatory offences that are typically “short-lived, requiring sporadic involvement, low time and money investment, and instant gratification” (Bouchard & Nguyen, 2010: 134). If two out of five offenders settle for one event, three out of five won't and instead opt to revictimize the same victim. Sexual revictimization is a relatively common phenomenon in sexual offending, more common to child sexual abuse, but not limited to it. It has been documented in other contexts where the offender is the current or former partner, a family member (e.g., uncle, cousin), or a friend/acquaintance (e.g., Casey & Nurius, 2005). At the end of this spectrum, we found that about one out of ten offenders in this sample had at least 300 events on average against the same victim. Such an event-to-victim ratio, especially in the context of child sexual abuse, requires some

level of planning, commitment, time, and sometimes money investment to have illicit sexual contact but also avoid suspicion and detection (Leclerc, Proulx, & McKibben, 2005; Leclerc & Tremblay, 2007). As such, low productive offenders may be driven more by immediate sexual gratifications, whereas high productive ones by securing an opportunity providing regular sexual gratifications. Event-to-victim ratio and sexual revictimization are not taken into account by official data on sex offending (e.g., arrest, conviction, incarceration) which in turn minimize the true extent of these offenders' level of offending, but also their tendency to specialize in sex crimes.

The event-oriented strategy of offending. The study highlighted the fact that the number crime events and the number of victims provide two complementary piece of information helping to understand criminal achievement in the context of sex offending. Indeed, the profile of the productive sex offender based on crime event contrast with the productive sex offender based on the number of victims on a number of features: offender's age at prison admission, victim type, criminal record, conventional background, and the length of the prison sentence received for their crime(s). These findings are in line with the hypothesis of the "successful" child molester[11] who is concerned with finding an opportunity that can be exploited repeatedly. The productive offenders who managed to maximize the number of crime events was found to be older at prison admission, targeting specifically children, including but not limited to those within their family environment[12]. The volume of their offending as well as their lambda was suggesting that not only these men were able to maximise the number of crime events per victim targeted, but they maintain a relatively high yearly rate of crime events. Further, they were more likely to be sex crime specialist, to present a conventional background

[11] The successful child molester found here seems to appear in the clinical literature on adult sex offenders. Several terms have been used to describe an "interpersonal" or "fixated" type (e.g., Knight & Prentky, 1990; Lussier, Beauregard, Proulx, & Nicole, 2005) which refers to an individual having a sexual preference for children, who seeks social activities with them, who perceives sexual contacts as mutually enjoyable for himself and the victim, and who avoids the use of physical/ verbal violence to commit their offence. The description of these offenders has been focused on the offenders' motivation to commit their crime, not on their criminal activity, crime specialization or criminal achievement, making it difficult to draw firm conclusions. While the similarities are worth considering for future empirical studies, we are not suggesting that all "fixated" child molesters are "successful" sex offenders.

[12] These individuals are often categorized as incestuous fathers and treated accordingly by the criminal justice system. It is commonly believed that simply by removing the offender from the family context may prevent future offending. But this strategy may not work for the pseudo-incestuous father as these offenders target single-mothers. This is similar to the "family-infiltrator" track that was identified by Beauregard, Proulx, et al. (2007) which shows that these offenders use their occupation to get access to a victim, and are more likely to infiltrate a family. In these cases, offenders become acquainted with a family member (e.g., the mother) and offer different types of services, especially babysitting. Offenders specifically target women living alone with children, vulnerable victims, not too far from their residence (Beauregard, Rossmo, et al., 2007). They not only use money and gifts but also drugs and alcohol in order to decrease the victim's resistance or inhibitions. These offenders are able to attract potential victims to locations (home or work) familiar only to offenders, which places the victims in more vulnerable situations.

(i.e., employed, in a relationship, no drug issue), combined to the fact that they were less likely to have a prior record for a sex crime. The extent and the rate at which the most productive men offended suggested that they were active for long periods of time, limiting their number of victims in the process. Not only did they avoid detection longer, they received similar prison sentences than other offenders, in spite of sexually reoffending on multiple occasions against the same victim(s). This could be partly explained by the fact that the successful child molester may not "fit" the profile of the dangerous offenders as perceived by the criminal justice system due to their more conventional background. The successful child molester, therefore, was clearly effective both in productivity and cost avoidance.

The victim-oriented strategy of offending. The productive offenders following a strategy of maximizing the number of victims were younger at prison admission, showing a tendency to target victims outside their immediate family environment. We hypothesized that this strategy would characterize the "successful rapists". Although our results were in line with this hypothesis, they were not statistically significant, suggesting that this strategy was chosen by both rapists and child molesters alike. These offenders avoided detection longer than those with fewer victims suggesting that given the opportunity to re-offend against another victim they did. While evidence of detection avoidance was found for this group, the same could not be said about sanction avoidance. Our findings showed that offenders with more victims received longer prison sentences[13], an observation in line with previous studies (Kingsnorth et al., 1998; Levesque, 2000; McCormick et al., 1998). Hence, if the number of crime events does not seem to be an aggravating factor taken into consideration for sentencing purposes, the number of victims is. Our findings also suggest that this group of offenders relied on their crime specialization rather than their conventional background to maximize their offending productivity. Indeed, while sex crime specialization was a predictor of the number of victims, none of

[13] Few studies have examined sentence length in sex crime cases. The most consistent results observed across studies is that longer prison sentences are meted out to offenders with a more extensive criminal history, a higher number of conviction counts, a higher number of victims, those who used physical violence, who inflicted physical injuries, and who are not known to their victim (e.g., Kingsnorth, MacIntosh, & Wentworth, 1998; Levesque, 2000; McCormick, Maric, Seto, & Barbaree, 1998).

the conventional background information emerged as significant, suggesting that it did not play a significant part in their sex offending productivity. In other words, if being employed, in a stable relationship with no drug issue may facilitate the successful child molesters in maximizing the number of crime events, it did not help offenders pursuing a strategy of offending against different victims. These results are in line with those observed for economic and market-type offences where conventional background was found to be relatively independent of the ability to earn money from crime (e.g., Tremblay & Morselli, 2000). This may speak about the importance for child molesters, whose objective is to repeatedly take advantage of the same victim, to gain the trust of the family environment but also the child to facilitate victim participation (e.g., Leclerc & Tremblay, 2007) and this might be more easily done for individuals presenting a more conventional background. Hence, under some circumstances, the offender's conventional background and social class may play in his favour and increase his productivity (see also, Charest & Tremblay, 2009). Offenders focused on offending against different victims, gaining the parents' and the victim's trust are not as pivotal as the skills and knowledge of the sex crime specialist about finding an opportunity to offend while minimizing the risk of detection as well as overcoming the victim's resistance to obtain sexual gratifications. In sum while our findings do support the presence of two distinct offending strategies (i.e., event-oriented, victim-oriented), they both have in common the ability to avoid and delay detection and a tendency to specialize in sex crimes[14].

Two underlying dimensions of achievement. Our study findings presented evidence that productivity and detection avoidance are intricately linked. All offenders included in this sample have been caught, charged and sentenced. In spite of this, much heterogeneity was found in the ability to delay detection. If the median time elapsed between the onset of sex offending and prison admission

[14] The differential findings obtained for productivity based on the number of crime events versus those based on the number of victims may be due in part to the reliability and validity of the data. More specifically, the number of victims may be more reflective of official data than the number of crime events, which may be more reflective of the actual offending behaviors. Divulging more victims might have been seen as more threatening from the convicted offender's standpoint than divulging more events with known victims. This would suggest that the indicator of the number of crime event “carries” some information about actual events that are not entirely grasped by the other indicator. It follows, then, that the findings of the regression models predicting the number of victims would be significantly changed by including the indicator of “total number of crime events” (or lambda of crime events). More specifically, a suppression effect in the parameter estimates would have been observed, something that was not observed in our data (see footnote #8).

was two years, a small group of offenders (about 10%) delayed detection and sanction for more than 16 years, on average, and up to 40 years. Such heterogeneity in cost avoidance was not occurring at random and our findings highlighted several areas of explanation for it[15]. Of importance, the most active offenders both in terms of volume and rate of offending survived detection the longest, a finding in line with earlier reports that q, the risk of apprehension, is inversely linked to lambda (Blumstein, Cohen, Piquero, & Visher, 2010). First, offenders who were more successful at delaying detection may have chosen victims (i.e., children) that may not understand that a crime has been perpetrated against them. As such they were less likely to verbally and physically resist, as well as to disclose the offence to someone. Second, offenders who managed to escape apprehension the longest were the most specialized in sex crimes. Crime specialization may be a proxy for crime-specific skills and knowledge (e.g., Bouchard & Nguyen, 2010; McCarthy & Hagan, 2001; Nguyen & Bouchard, 2011). As such, more successful offenders may have opted against using physical violence to increase victim participation[16], minimize physical resistance, and decrease the risk of the victim reporting the offence (Leclerc et al., 2009). Empirical studies do suggest that violence increases the likelihood of victim reporting (e.g., Gebhard et al., 1965). Instead, these offenders may have opted for manipulation (e.g., gifts, money), deception (e.g., lies, alcohol/drug), persuasion (e.g., convincing the victim that it is okay for children to have sex with an adult) to force a victim into sex and to maintain secrecy about it. Age was also a factor in delaying detection as older sex offenders were caught and sanctioned later. This might reflect that older offenders are more experienced and are more knowledgeable about how to offend while minimizing the risk of apprehension. It could also be that older offenders may have more self-control over the crime opportunities they wish to take advantage of, that is, those with the lowest risk of apprehension. Finally, the "age-delay of detection" link could be the immediate consequence of the longer time it took the victim to report the crime and the criminal justice to locate, apprehend, and

[15] Langevin, Curnoe, and Bain (2000) reported a ten-year gap between offending and detection for cleric sex offenders as opposed to about three years for a comparison group of non-cleric sex offenders. These numbers are in line with those found for the most productive versus the least productive sex offenders included in our study.

[16] The correlation between sex crime specialization and physical violence is substantial and significant (r=.42, pb.001). More specialized offenders were less likely to use excessive physical force to commit their offence.

convict more successful offenders. Finally, offenders who managed to delay detection longer were less likely to be known by the authorities. They spent less time in prison and are less likely to have a prior record for a sex crime. Furthermore, while they may not present the typical "criminal" profile, their background does suggest a conventional picture as shown by the absence of drug problem, being employed and in a stable relationship with an adult partner.

The successful" offender and the "high-risk" offender. Based on the study findings, it is possible to conclude that the "successful" sex offenders and the actuarially defined "high-risk" offenders are two distinct entities. In fact, the covariates of offending productivity and cost avoidance presented an image of an offender at odds with the one produced by actuarial risk assessment tools to identify the sexual recidivist. This is especially the case when defining offending productivity in terms of the number of crime events. Actuarial tools and clinical assessment protocols used to assess the risk of reoffending have described the "high-risk" sex offenders as being young, single or never been married, having alcohol and/or drug-related problems, showing a lengthy criminal record, criminally versatile, using violence in the commission of sex crime, while targeting extrafamilial or stranger victims (e.g., Epperson et al., 2003; Hanson & Thornton, 2000; Hanson & Harris, 2000; Quinsey et al., 1998). Hence, actuarial tools present the high-risk sex offenders as someone with low conventional capital and a tendency to get caught for various criminal behaviors, including sex offending[17]. One has to wonder whether being a young single male, drug user, unemployed with a criminal record including violent offences can access sexual criminal opportunities that may be conducive to a high event-to-victim ratio and to go undetected for over a decade. We argue that these individual characteristics may be barriers to the crime opportunities with highest payoffs in terms of number of crime events, that is, those in which the offender may secure the confidence of the employers, parents, friends, neighbours

[17] Recall that our sample is a quasi-population of all individuals convicted and federally sentenced. Given the gap in detection avoidance between the most productive and the least productive offenders, it is most likely that prison will be predominantly composed of least productive offenders. Without taking parole into account, if the typical prison sentence is about 4 years, then the low productive offenders are released into community about 5 years and a half after committing their offences. This is about 10 to 15 years before the most successful offenders are detected. At the same pace, the least productive sex offenders may go to prison for a sex crime 2 to 3 times before the most productive offender is caught, convicted and incarcerated once. Sexual recidivism studies suggest that the risk of reconviction within that time period of about 10 years is averaging 20% (Hanson, Morton, & Harris, 2003). Based on these numbers, it appears that the capture-recapture process at play might be skewed toward the least productive offenders. In fact, recidivism studies may include few successful offenders as the follow-up period is typically very short (around 5 years) (Hanson & Bussière, 1998).

to secure a regular access to a vulnerable child – e.g., members of the clergy (e.g., Langevin, Curnoe & Bain, 2000; Tallon & Terry, 2008), school teachers, sport coaches, or volunteers (e.g., Leclerc et al., 2005), and the mother's "new boyfriend" (Beauregard, Proulx, et al., 2007). Not surprisingly, our study showed that the most successful offenders at maximizing the number of crime events were older, in a relationship, employed, did not show drug related problems, had spent the least amount of time incarcerated in adulthood, and were not violent. Our findings are somewhat reminiscent of the Langevin et al. (2000) findings regarding cleric sex offenders.

Clearly, the successful sex offender is not the "high-risk" sex offenders as defined by actuarial instruments or recognized by the criminal justice system. Actuarial tools, such as the Static-99, may be designed in such a way that it inadvertently selects individuals who are the least skilled at avoiding and delaying detection due, perhaps, to the more opportunistic nature of their offending. In line with that hypothesis, our study showed that sexual recidivists, or sex offenders with a prior charge for a sex crime were the least productive (event to- victim ratio) and were detected sooner than non-recidivists. This may be due, at least in part, to the reliance on official indicators of offending as "risk factors" to measure the level of risk, such as "the number of prior sentencing dates", "number of prior convictions for sex crimes", etc. Actuarial tools such as the Static-99 are developed to capture the risk factors associated with official recidivism or being caught again for another sex crime. In doing so, actuarial tools may be "capturing" the ability to avoid detection, or offenders who are more likely to get caught again. These offenders are less productive, both in terms of volume and rate of offending and less specialized in sex offending. As a result, the successful offender – i.e., the sex crime specialist - who is more skilled at offending and avoiding detection, is unlikely to be detected by actuarial tools once he enters the criminal justice system.

Conclusion

The study relied on two dimensions of criminal achievement, productivity and cost avoidance, and showed their relevance beyond the study of economic and market offences, more specifically for

the study of sexual offending. Indeed, using concepts from the criminal achievement literature, the current study examined and found much discrepancy between sex offenders in terms of their offending productivity and cost avoidance. The findings also stressed the importance of looking beyond conviction counts to measure sex offending, as the variety in sex offender strategies may be missed entirely. In fact, the study showed evidence of a distinction between offenders who are successful in terms of, maximising crime events by repeatedly offending the same victim (i.e., event-oriented), and those focused on offending against different victims (i.e., victim-oriented). This revealed two profiles of sex offending productivity, one being atypical to what the criminal justice system and actuarial risk assessment tools consider to be high-risk offenders. Is it possible that judges are simply not taking into account the number of crime events, focusing instead on the number of victims, something suggested by our findings? Is it possible that the criminal justice system took into account their conventional background in determining sentence length? The study does show that judges took the criminal capital of the offender's into consideration, but not in a manner necessarily congruent with our findings. Indeed, sex crime specialists, our most productive offenders, received more lenient prison sentences, perhaps because these men did not carry an extensive criminal record nor did they project the image of the typical “criminal”. The study raises several issues with respect to the criminal career of sex offenders, criminal achievement, and how the criminal justice system responds to the most successful offenders. The simple fact is that the criminal justice system may not respond to these individuals in away that may deter them from reoffending once released from prison.

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Table 1. Measures, coding and descriptive statistics efficient

Indicators	Coding
Criminal achievement (productivity)	
True lambda λ (event)	Total number of crime events relative to the time-at-risk (i.e. not incarcerated).
True lambda λ (victim)	Total number of victims relative to the time-at-risk (i.e. not incarcerated).
Number of victims	Total number of different victims of the index crime(s).
Crime events ratio	Total number of crime events relative to the number of official victim (index crime).
Criminal achievement (cost avoidance)	
Time to sentence (detection avoidance)	Time (months) elapsed between commission of the sex crime and beginning of prison sentence. If multiple crimes were committed first crime was coded. If crime lasted multiple days, date of first event was coded.
Length of index sentence (sanction avoidance)	Length of the prison sentence in years for the index crime.
Conventional capital	
Education	Scale measuring the highest level of education attained: (0) elementary school - (6) university.
Employment	Whether the offender had either a part-time or full-time job at the time the offence(s): (0) did not have a job; (1) have a job.
Civil status	Whether the offender was in a stable relationship at the time of the offence: (0) single, widow, separated, divorced; (1) common-law; married.
Absence of drug problems	Whether the offender has been a regular drug user since turning 18: (0) presence of regular drug use; (1) absence of regular drug use.
Criminal capital	
Proportion time free	Proportion of months not spent in prison since turning 18 years old.
Sex crime specialization	Proportion of sex crimes (charges) relative to the total number of charges in adulthood.
Minimal violence (index)	Scale measuring the offender's level of physical violence during sex crime perpetration (index crimes): (0) excessive violence (i.e., more than necessary to obtain compliance); (1) minimal violence (i.e., no more than necessary to obtain victim compliance); (2) absence of violence.

Table 2. Descriptive information on productivity and cost avoidance (n=369)

Indicators	Mean (SD)	Median	Range
Productivity (volume)			
Number of events	180.73 (483.63)	5	1-5524
Number of victims	1.83 (1.54)	1	1-13
Events-to-victim ratio	98.50 (236.88)	3	.50-2080
Productivity (λ)			
True lambda (event)	7.10 (18.71)	.37	.03-162.23
True lambda (victim)	.14 (.20)	.08	.02-1.71
Cost avoidance			
Time-to-sentence (months)	68.64 (96.06)	24	.56-491
Sentence (years)	4.04 (2.81)	3.33	2-26.67

Table 3. Productivity, cost avoidance, victim-type and risk status (n=369)

			Productivity			Cost avoidance		Victim-type		Actuarial risk (Static-99)	
Events-to-victim ratio	N	% of offenders	True lambda (event)	True lambda (victim)	Number of victims	Sentence length (years)	Time-to-sentence (months)	Child-victim only (%)	Intrafamilial victim only (%)	Medium-high or high risk (%)	Total score
≤1	154	41.7	.16 (.21)	.17 (.24)	1.43 (1.14)	4.33(3.01)	15.95 (21.04)	12.6	3.2	44.2	3.36 (1.68)
>1 & ≤10	81	22.0	.58 (.86)	.16 (.25)	2.20 (2.20)	3.80(2.81)	55.72 (75.87)	48.8	12.3	30.9	2.85 (1.99)
>10 & ≤50	38	10.3	2.63 (1.93)	.11 (.08)	2.26 (1.41)	4.02(4.00)	85.13 (91.97)	60.5	31.6	29.0	2.44 (2.15)
>50 & ≤100	22	6.0	7.94 (6.20)	.10 (.06)	2.27 (1.55)	3.74(1.45)	88.29 (116.19)	50.0	40.9	31.8	2.32 (2.10)
>100 & ≤300	32	8.7	14.75 (11.98)	.08 (.07)	1.78 (1.04)	3.66(1.55)	144.09 (107.56)	78.1	31.3	6.2	1.22 (1.68)
>300 & ≤600	28	7.6	42.38 (37.31)	.09 (.07)	2.29 (1.58)	4.08(2.15)	178.96 (111.78)	67.9	35.7	7.1	1.54 (1.23)
>600 and over	14	3.8	44.49 (37.31)	.04 (.02)	1.43 (.85)	3.61(1.40)	237.14 (118.56)	100.0	28.6	14.3	2.00 (1.36)

Otherwise specified, the mean (standard deviation) are presented.

Table 4. Covariates of offending productivity [λ of sex offending] using negative binomial regression (with a log link)

	λ of the number of sex crime events			λ of the number of victims		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Covariates	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
Offender's age	1.05*** (1.04-1.06)	-	1.02* (1.01-1.03)	.97*** (.96-.98)	-	.96*** (.95-.97)
Child victim	4.01*** (3.23-4.99)	-	3.19*** (2.52-4.05)	.94 (.71-1.26)	-	.86 (.63-1.18)
Intrafamilial victim	3.99*** (2.97-5.36)	-	3.12*** (2.25-4.31)	.76 (.52-1.11)	-	.70† (.48-1.02)
Prior conviction for a sex crime	.22*** (.17-.27)	-	.44*** (.34-.56)	.88 (.67-1.16)	-	.92 (.69-1.23)
Conventional capital						
Education level	-	.76*** (.70-.83)	.86* (.79-.94)	-	1.03 (.94-1.14)	1.01 (.92-1.11)
Employed	-	2.15*** (1.71-2.69)	1.31* (1.03-1.67)	-	.95 (.70-1.28)	1.05 (.79-1.41)
Common-law/Married	-	2.45*** (1.98-3.04)	2.11*** (1.68-2.64)	-	.85 (.64-1.13)	.91 (.69-.1.19)
Absence of drug issue	-	1.49** (1.14-1.95)	1.50** (.98-1.65)	-	.73† (.54-1.00)	.93 (.68-1.28)
Criminal capital						
Proportion free	-	1.23 (.83-1.83)	1.07 (.72-1.58)	-	.88 (.54-1.42)	.91 (.57-1.66)
Crime specialization	-	6.27*** (4.16-9.45)	3.96*** (2.52-6.22)	-	1.38 (.85-2.23)	1.98** (1.23-3.19)
Minimal violence	-	.95 (.80-1.14)	.80* (.67-.95)	-	.87 (.71-1.05)	1.03 (.84-1.26)
Likelihood Ratio	456.5	304.7	498.4	45.2	8.5	58.6
df	4	7	11	4	7	11
p value	.000	.000	.000	.000	.288	.000

Note. Negative binomial with a log link. The number of either the number of crime events or the number of victim is used as the response (or dependent) variable and the log number of time-at-risk in adulthood is used as the offset variable. Sample size varies between 357 and 363 across models due to missing data. †p<.10 *p<.05 **p<.01 ***p<.001.

Table 5. Covariates of cost avoidance in sexual offending

	Detection avoidance (Time-to-sentence)					Sanction avoidance (Sentence length)				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Covariates	HR (95% C.I.)	HR (95% C.I.)	HR (95% C.I.)	HR (95% C.I.)	HR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
Offender's age	.94*** (.93-.96)	.96*** (.95-.97)	-	.95*** (.94-.96)	.96*** (.95-.98)	1.00 (1.00-1.01)	1.00 (.99-1.00)	-	1.01* (1.00-1.01)	1.00 (1.00-1.01)
Child victim only	.52*** (.40-.66)	.48*** (.37-.61)	-	.51*** (.39-.66)	.47*** (.36-.62)	.86** (.76-.96)	.85** (.76-.96)	-	1.00 (.89-1.13)	1.02 (.90-1.15)
Intrafamilial victim only	.79 (.59-1.06)	.67** (.50-.89)	-	.93 (.69-1.27)	.77+ (.57-1.05)	.87+ (.76-1.01)	.91 (.79-1.05)	-	.91 (.79-1.04)	.97 (.85-1.11)
Prior conviction for a sex crime	2.08*** (1.65-2.62)	2.00*** (1.58-2.52)	-	1.84*** (1.46-2.33)	1.83*** (1.45-2.32)	1.05 (.94-1.16)	1.07 (.96-1.19)	-	1.07 (.96-1.19)	1.09 (.98-1.21)
Criminal achievement (productivity, λ)										
True lambda (events)	.98*** (.98-.99)	-	-	.98*** (.97-.99)	-	1.00 (1.00-1.01)	-	-	1.00+ (1.00-1.01)	-
True lambda (victims)	.27** (.12-.63)	-	-	.29*** (.13-.66)	-	1.62** (1.17-2.23)	-	-	1.62** (1.19-2.21)	-
Criminal achievement (productivity, volume)										
Event-to-victim ratio		.99*** (.99-.99)	-	-	.99*** (.99-.99)	-	1.00 (1.00-1.00)	-		1.00 (1.00-1.00)
Number of victims	-	.75*** (.69-.81)	-	-	.76*** (.70-.83)	-	1.08*** (1.04-1.11)	-		1.09*** (1.06-1.13)
Conventional capital										
Education	-	-	1.06 (.99-1.15)	.97 (.89-1.06)	1.01 (.93-1.10)	-	-	1.01 (.97-1.04)	1.02 (.98-1.05)	1.01 (.97-1.04)
Employed	-	-	.69** (.99-1.15)	.78* (.61-.99)	.83 (.66-1.05)	-	-	1.12* (1.00-1.24)	1.11+ (1.00-1.24)	1.08 (.97-1.20)
Common-law/Married			.66*** (.53-.82)	.75* (.59-.94)	.74** (.59-.93)	-	-	.92 (.84-1.02)	.93 (.85-1.03)	.94 (.85-1.04)
Absence of drug problem	-	-	.65** (.51-.83)	.87 (.68-1.10)	.82 (.65-1.04)	-	-	1.08 (.96-1.20)	1.06 (.95-1.18)	1.08 (.97-1.21)
Criminal capital										
Proportion time free	-	-	.77 (.52-1.12)	.74 (.50-1.08)	.71+ (.48-1.03)	-	-	.88 (.74-1.05)	.91 (.76-1.09)	.92 (.78-1.10)
Sex crime specialization	-	-	.41** (.28-.60)	.63* (.42-.95)	.80 (.53-1.21)	-	-	.91 (.76-1.07)	.83* (.70-1.00)	.80* (.67-.95)
Minimal violence	-	-	.85* (.73-.99)	.95 (.81-1.11)	.97 (.83-1.13)	-	-	.83*** (.77-.89)	.83*** (.77-.89)	.82*** (.76-.88)
Likelihood Ratio	3288.8	3256.4	3458.8	3225.8	3206.3	26.2	36.2	50.0	68.9	87.2
df	6	6	7	13	13	6	6	7	13	13
p value	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Note. Cox proportional hazards modeling was used to analyze detection avoidance and Gamma regression for sanction avoidance. +p<.10 *p<.05 **p<.01 ***p<.001.