The Successful Onset of Sex Offending: Determining the Correlates of Actual and Official Onset of Sex Offending

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ABSTRACT

Purpose: The current study investigates the covariates of age of onset (actual and official) and cost avoidance of sex offending in first-time convicted sex offenders.

Methods: The current study utilized a large sample (n = 332) of federally sentenced first-time convicted adult male sex offenders. Actual onset was measured using self-report, victim statements, and police investigation notes. Official onset was measured using age at first conviction. Cost avoidance was measured as the time gap between actual and official onset.

Results: First, while most offenders initiated their sexual criminal career in their early adult years (25–35 years) they were typically not arrested until middle adulthood. Second, the covariates for official onset are in line with cost avoidance, but not actual onset. Third, offenders best able to avoid costs were early starters with a conventional background (i.e., employed, absence of a conviction for a non-sex crime), targeting prepubescent children within the family context.

Conclusions: While early actual onset offenders were more likely to target stranger victims, early official starters exhibited an unconventional background, prior criminal record, more extensive sexual criminal career, and targeted strangers. Thus, official, but not actual onset revealed a profile in line with prior research.

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Introduction

One of the key components of the unfolding of the criminal career is the age at which the offender initiates his criminal career. Longitudinal studies have repeatedly shown that an early onset is at least moderately predictive of a more chronic, persistent and serious criminal career (Blumstein et al., 1986; DeLisi et al., 2013; Farrington et al., 2003; LeBlanc & Fréchette, 1989; Loeber & LeBlanc, 1990). Empirical evidence also suggests that an early onset of offending is associated with increased crime specialization later in the offending career (e.g., Piquero et al., 2003; Tzoumakis, Lussier, LeBlanc, & Davies, 2012). In other words, age of onset is pivotal because it informs, albeit moderately, about the course of offending over time. Research investigating the age of onset of offending has primarily been based on general samples of offenders, as such the characteristic of the early onset sex offender and the association between age of onset and the unfolding of the criminal sexual career remain open empirical questions. Sex offending is of interest here given that criminologists have vastly neglected it and current knowledge suggests it represents a distinct offending behavior (e.g., Lussier, van den

Berg, Bijleveld, & Hendriks, 2012; Seto & Lalumière, 2010). Furthermore, it is believed that a substantial portion of sex offenders' criminal activity is not detected therefore raising doubts about the criminal career picture provided by official indicators of offending (e.g., Lussier, Bouchard, & Beauregard, 2011). More specifically, official indicators of age of onset do not take into account the offender's ability to avoid detection and are thus bias towards those who are more likely to be caught and convicted. As such, official onset does not provide a pure indicator of the true age of onset of sex offending. Given the heavy reliance on official indicators of onset for sex offending in research, it is unclear whether the current description of the early onset sex offender is describing the actual early onset sex offender, or, more likely, describing the offender less likely to avoid detection. In other words, given that onset marks the activation of the offending trajectory, the understanding of such trajectories might be bias as a result of the offender's differential skills in cost avoidance. The current study seeks to investigate age of onset and cost avoidance within the criminal career of sexual offenders. In particular, who are the early-onset sex offenders and what proportion of them go undetected for long time periods? Are early-onset sex offenders presenting a profile in-line with the early-onset offender that has been studied by criminologists for decades? Is this profile the same whether or not sex offenders were caught and arrested soon after their offence or much later? The current study will first revisit the scientific literature on the age of onset of sex offending as well the criminal career and criminal achievement.

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Literature review

The onset of sex offending

Few studies have investigated the age of onset of the sexual criminal career (for a review, see Lussier & Cale, in press). Of these limited studies, wide variations exist with some beginning in adolescence (e.g., Abel et al., 1987; Prentky & Knight, 1993) and others initiating later in adulthood, between thirty and forty years of age (e.g., Lussier, LeBlanc, & Proulx, 2005; Terry, 2008). Three main factors contribute to this variation: the type of offender (e.g., rapist vs. child molester), the type of sample (e.g., psychiatric hospital, prison, community), and the type of measurement (e.g., self-report vs. official data). For example, research investigating the self-report age of onset of rapists demonstrates initiation between late teens and early adulthood (i.e., 18–22 years of age) (e.g., Groth et al., 1982) and an official onset only moderately following, within early adulthood (i.e., 22–30 years) (e.g., Baxter et al., 1984; Lussier, LeBlanc, et al., 2005). On the other hand, studies on child molesters reveal a self-report age of onset much later, typically in the early 30s (e.g., Smallbone & Wortley, 2004) and in the mid-thirties to early-forties for official onset (e.g., Smallbone & Wortley, 2004; Lussier, LeBlanc, et al., 2005). Overall, the independent influences of the type of sex offender (e.g., rapist vs. child molester), the type of measurement (e.g., self-report vs. official onset), and the type of sample (e.g., clinic, prison, community) on age of onset, and their contribution to its variance, has obfuscated our understanding of the age of onset of sex offending. Of importance, firm conclusions have been limited by the fact that empirical studies are typically based on a single measurement method. Hence, it remains unclear whether differences observed across studies are reflective of sample differences or measurement method used. These methodological considerations aside, given the lack of clarity about the typical onset of sex offending, it becomes even more difficult to determine what constitutes an early-onset and a late-onset of sex offending.

Correlates of age of onset

Few studies have investigated the correlates of the age of onset of sex offending (Cale, in press; Cale & Lussier, 2011; Cale, Lussier, & Proulx, 2009; Lussier, Beauregard, Proulx, & Nicole, 2005; Prentky & Knight, 1993). These empirical studies have examined the correlates of age of onset in three ways. First, researchers conceptualized early-onset as adolescent-onset sex offending and adult-onset as late-onset sex offending. In that regard, the retrospective study by Knight, Ronis, and Zakireh (2009) using data from clinical samples of sex offenders shows that self-reported early-onset sex offenders differed from late-onset offenders on a series of indicators such as having more problems in school, being more aggressive and delinquent during adolescence, and manifesting atypical sexual interests. The picture of the early-onset sex offender as antisocial and sexually deviant was partly replicated in a prospective longitudinal study using data from the Pittsburgh Youth Study with a sample of at-risk children followed until adulthood. Lussier and Blokland, and colleagues (2014), utilizing a combination of self-report and official indicators of onset, compared the developmental correlates of adolescent onset sex offending to those of adult onset sex offending and found that early starters showed greater levels of ADHD symptoms in youth, were involved in more delinquency during childhood (prior age 10), were less likely to be shy and withdrawn, and were more sexually active in pre-adolescence than late onset offenders. Taken together these studies suggest that early-onset sex offending is part of a clinical profile including evidence of general offending and antisociality as well as an atypical sexual development. It should be stated here that not all juvenile sex offenders fit that description as most of them are not likely to persist in their offending in adulthood and the vast majority will desist from sexually offending after reaching adulthood (e.g., Lussier, van den Berg, Bijleveld & Hendriks, 2012). Furthermore, research also shows

that the vast majority of adult sex offenders initiate their sex offending in adulthood (Lussier & Blokland, 2014).

The second type of analysis examined age of onset of sex offending as a continuum without categorizing a specific group as "early onset". This line of research has been based on samples of convicted offenders either in prison or in mental health institutions. For example, Prentky and Knight (1993) inspected the developmental correlates of official age of onset for a group of incarcerated rapists and child molesters and a similar picture emerged. An earlier official onset of sex offending was associated with lower educational attainment, poorer working history, a higher likelihood of being single or separated and more limited life management skills. Their study also reported that an earlier onset of sex offending in rapists was associated with higher involvement in delinquency during adolescence, but not for child molesters. Research investigating adult sexual aggressors of women (Cale & Lussier, 2011; Cale, Lussier, & Proulx, 2009) reveals earlier official onset sex offenders showed a childhood-onset antisocial trajectory that persists throughout adolescence and into adulthood. Upon reaching adulthood, these offenders present with an earlier and more frequent onset of general, sexual, and violent offending. This pattern of offending found in early-onset adult sex offenders is in continuation with the presence of a history of chronic juvenile delinquency (Cale, in press). In addition, these early onset offenders present with a higher sexual drive and mating effort suggesting that their sexual behavior characterized by uncommitted sexual relationships is in line with their antisocial lifestyle.[1] In terms of adult sexual aggressors of children, Lussier, LeBlanc, and colleagues (2005) found that official early starters had childhoods marked by family violence, as well as intrafamilial and extrafamilial sexual abuse. In adolescence, these abused children evidenced psychosocial deficits (e.g., low self-esteem, social isolation, nightmares) and impulsivity/ acting out to a greater degree than later onset sexual aggressors of children. Taken together, these studies suggest that early and persistent involvement in crime and delinquency may accelerate the onset of sex offending, particularly with sexual aggressors of women. The concomitance between general offending and the onset of sex offending warrants further examination. It is unclear from these studies whether this profile is more specific to those committing sex crimes earlier or those who are first arrested and convicted for a sex crime earlier or both. In addition, while similar results have been uncovered across self-report (Knight et al., 2009) and official (Prentky & Knight, 1993) indicators, both of these studies utilized a highly selective forensic psychiatric sample containing the most mentally disturbed and dangerous sex offenders, preventing generalizations from being made to other, more representative, populations of sex offenders (e.g., prison populations). Further, the fact that the concomitance between general delinquency and early sex offending appears to be more important for rapists than child molesters may suggest the presence of differential patterns of onset for those two types of sex offenders.

The importance of distinguishing actual and official onset of sex offending is illustrated in a recent empirical study conducted with a sample of convicted adult male sex offenders. The study by Lussier and Mathesius (2012) compared two indicators of onset (i.e., actual and official) across first-time convicted sex offenders. Actual onset was determined by examining correctional files, victim statement, police reports and self-report data on sex offending using interview data with each offender. Official onset was based on the offender's age at first conviction for a sex crime. Results indicated that actual onset of adult sex offending for this sample occurs in the early-to-mid 30s. Actual onset did not vary across the type of sex offender, with the exception of offenders targeting stranger victims who began offending the earliest, at around 28 years of age. Official age of onset occurred nearly 10 years later, on average, in the late 30s and early 40s. Early official onset sex offenders, initiating in the late twenties and early thirties, targeted adult female strangers. Conversely, two groups exhibited the latest official onset, typically around early-to-mid forties. The first group targeted male children within the family and the second exhibited no clear victim preference and instead

were versatile in their victim selection. The fact that actual age of onset did not vary across sex offender types but did in terms of official onset suggest that victim characteristics, who the aggressor offended against, and in what context (intrafamilial, extrafamilial), is pivotal to understand detection and time-to-detection. It is unclear whether the gap between the actual and official onset of sex offending is strictly related to contextual factors regarding the sex crime event or speaks of the individual characteristics of offenders.

Criminal achievement and detection avoidance

While self-report actual onset and official onset of sex offending are informative about the origins of sex offending, the gap between the two also informs about cost avoidance. To criminal achievement researchers (e.g., Bouchard & Ouellet, 2011; Lussier, Bouchard & Beauregard, 2011) cost avoidance refers to the offender's ability to minimize negative consequences or "costs" (e.g., detection, arrest, conviction) associated with illegal activities, but also informal costs such as social exclusion, victimization, labeling, loss of employment, expulsion from residence, and harassment/threats (e.g., Levenson & Cotter, 2005; Zevitz, Crim, & Farkas, 2000). To date, most studies having examined cost avoidance have been based on non-sexual offending in the context of determining the payoffs of economic and market-type offending. Offenders greatly differ in their ability to minimize costs. The most successful in minimizing costs are typically employed in adulthood, have a steady history of employment, have accumulated some debt and have made investments (e.g., pension), they have abstained from drug use, do not use violence during the offence, and do not exhibit excessive levels of impulsivity (Kazemian & LeBlanc, 2007). This conventional background suggests that those with higher investments in conformity have more to lose by being detected and maybe more prone to taking precautions to avoid detection and apprehension. Successful offenders are also likely to be embedded with, and mentored by, more knowledgeable and experienced criminals (Bouchard & Ouellet, 2011; Bouchard & Nguyen, 2010), and to present moderate levels of self-control (Morselli, Tremblay, & McCarthy, 2006). While criminal opportunity plays an important role in detection avoidance, the offender's characteristics and crime related skills and knowledge (e.g., Bouchard & Ouellet, 2011; Bouchard & Nguyen, 2010; Kazemian & LeBlanc, 2007) are also instrumental components. For example, Beauregard and Bouchard (2010) investigated the modus operandi and forensic awareness of 72 serial rapists. Their findings revealed that slightly more than half of the sample (55.9%) exhibited some form of forensic awareness in an attempt to avoid detection. In the majority of these cases, offenders chose to wear a mask to conceal their identity and they had selected specific targets, within specific locations, and attacked when the victim was alone. Many, however, did not exhibit forensic awareness. Of those with no forensic awareness, the main rationale was that the crime was spontaneous, unplanned, and all that mattered was the moment. While this study may be informative of stranger-type sex offending, it does not inform about more common forms of sex offending, such as intrafamilial child sexual abuse, where the offender knows his/her victim, is easily identifiable, and tend to offend at home but typically avoid detection for prolonged time periods (e.g., Lussier & Mathesius, 2012). In other words, detection avoidance considerations and strategies used could be offender-specific or offense-specific.

Detection avoidance in sex offending has received limited attention from the field of sexual violence and abuse (Abel et al., 1987; Gebhard et al., 1965; Groth, Longo & McFadin, 1982; Weinrott & Saylor, 1991). Such studies have been primarily concerned by the percentage of sex crimes committed by sex offenders that comes to the attention of the authorities. These descriptive studies have not examined differential cost avoidance and whether sex offenders differ in terms of their ability to avoid detection. In that regard, Lussier, Bouchard et al. (2011) investigated whether criminal achievement, both in terms of productivity (i.e., number of sex crime events and number of victims) and cost avoidance (i.e., offender's ability to delay sanctioning) varied across victim,

offender, and criminal career characteristic using a sample of incarcerated adult male sex offenders. While the majority of offenders were arrested and convicted within two years of committing the sexual offence others were able to avoid sanction for over four decades. The most successful sex offenders in terms of detection avoidance presented a conventional background in that they were older upon prison admission, they had no prior convictions for a sex crime, they were employed at the time of the offenses, and were also in a relationship with a significant other. While these individual characteristics are somewhat in line with those associated with successful offending in non-sexual offenders (e.g., Bouchard & Nguyen, 2010; Kazemian & LeBlanc, 2007), they depart from those that have been associated with the age of onset of sex offending which suggest that early onset offenders are involved in delinquency and crime, are aggressive, are less educated and have poor working histories. The gap between the image of the successful offender and that of the early-onset offender emerging from criminological research is the focus of the current study.

Aim of the study

The study of onset and cost avoidance in the context of sex offending provides a unique opportunity to examine the complexities of criminal careers and offending trajectories. There has been limited work on the age of onset of sex offending and this line of work provides an image of the early onset sex offender as one similar to the early starter depicted in the criminological literature. It is believed, however, that the image of the early onset offender as an impulsive decision-maker with an antisocial lifestyle and an underlying propensity for general offending might be distorted by the overreliance on official indicators of sex offending. Specifically, and as previously mentioned, official indicators of onset are imperfect measures of the age at which the offender actually initiated their sexual criminal career and may be bias towards those who are less successful in avoiding detection. Indeed, criminal achievement research reveals that the most successful offender in avoiding the costs associated with their crimes is someone who presents a conventional background, is employed, and is married without any drug issues or criminal history. The gap between these two pictures raises issues as to whom the early starter really is. Is he someone more in line with the scientific literature on the study of the correlates of official onset of sex offending or is he more in line with the profile of the successful offender emerging from the criminal achievement literature on differential cost avoidance studies? Therefore, the current study aims to investigate and compare the covariates of actual and official onset of sex offending in order to determine who really is the early onset sex offender and whether this offender profile differs depending on the type of measure utilized. Specifically, we seek to compare socio-demographic characteristics, criminal career history, and victim characteristics across actual age of onset, official age of onset, and the gap between the two.[2]

Methodology

Sample

The present study is based on secondary data that was collected as part of a research project investigating sexual recidivism and offending pathways in convicted adult male sex offenders. All participants were consecutively incarcerated for a sex crime and were sentenced to a Federal penitentiary in the province of Quebec between April 1994 and June 2000. All offenders were serving at least a two-year sentence for their crime. In total, 93% of individuals contacted agreed to participate in the research project. Thus, this original sample represents a quasi-population of all federally sentenced sex offenders incarcerated in Quebec during that time period. Of the 553 participants included in the original study sample, 169 sexual recidivists were removed. Sexual recidivism is defined here as individuals who had a record for a sex crime prior their index offense. The sample was modified in order to

focus on the 384 individuals who were first-time convicted sex offenders. There are several reasons for this: first, the focus of the present study is to describe the career initiation of sex offending; second, the removal of sexual recidivists allows for the examination of the heterogeneity within a group of sex offenders who are all at the same stage of their official criminal career with respect to sexual offending; and third, the data does not contain detailed information on age of onset and detection avoidance for sexual recidivists included in the original study sample. From the remaining 384 participants, 20 were removed due to missing data on their criminal history ($N = 364$), 13 were removed due to missing data on their dates of offending ($N = 351$), and 19 were removed due to missing data on their onset of offending. Descriptive information about the sample is presented in Table 1. Overall, the average age of the offender at prison admission is 39.6 years old ($SD = 12.2$). However, there were great variations across offenders' age at prison admission from 18.7 years of age up to 75.2, a range of 56.5 years. The offenders were predominantly Caucasian (85.5%), in some form of a relationship (40.8%) or had been in a relationship previously (21.4%) and are moderately educated (74.1% completed a minimum of high school education). The majority of the sample was not employed (55.2%) around the time of the offense.

Procedures

All data collected was conducted in line with the ethical guidelines put forth by the University of Montreal where the original study was conducted. Every participant signed a consent form indicating they understood the risks and benefits of the study and agreed to participate. At this point they were also informed that there would be no consequence for refusing to participate in the study or for withdrawing from the study at any point in time.[3] In particular, their (non-) participation would not impact their risk assessment, sentence length, or their likelihood of receiving treatment or parole. Note that at the time of the interview, offenders had already been assigned a classification risk category. Further, no incentives were given to offenders for their participation in this study. All offenders who agreed to participate in the study granted access to their correctional files, which included the offenders' criminal history, details about the police investigation, and victim statements, among other things. These documents were used for the collection of information pertaining to age of onset, detection avoidance, and victim characteristics. Research assistants trained by a licensed forensic psychologist conducted the semi-structured interviews. The data gathered from each interview were entered into a computerized questionnaire.

Measurement

Actual age of onset

Actual age of onset refers to the offender's age at the time of their first sexual offence. This variable was coded using different sources of information: self-report, victim statements, and police investigation. The actual age of the offender is calculated by subtracting his birth date from the date of his first sex offence. In situations where the offender repeatedly targeted the same victim, the date of first offense from this sequence was used (i.e., the first victim). In situations where the offender targeted multiple victims, the date of the first victim in the sequence was used. The mean age of actual onset of sex offending is 32.1 years ($SD = 8.8$) and ranges between 14.2 to 73.1 years of age. As can be seen, while the present sample contains a wide variation in actual onset of sex offending, the mean actual onset age shows that this sample of first-time sex offenders typically started their sex offending well in adulthood.

Official age of onset

The official age of onset refers to the age of the offender when they were convicted and sentenced for their sex crime. This variable was coded using the offenders criminal history based on the Royal Canadian Mounted Police (RCMP) included in the offender's correction files. These correction files contain information regarding the offenders past and current criminal charges and convictions for crimes committed within Canada. The mean age of official onset of sex offending is 39.6 years of age ($SD = 12.2$), ranging between 18.7 and 75.2 years.

Cost avoidance

Cost avoidance refers to the number of years passed between the offenders actual and official age of onset of sex offending. For this study, cost avoidance is specific to sex offending. In order to calculate cost avoidance, the offender's actual age of onset was subtracted from their official age of onset (age at first conviction for a sex crime). Given that the offender's age at first conviction for a sex crime was used in the calculation, cost avoidance refers to the offenders' ability to delay sanctioning. It is possible for detection to be operationalized in other ways (e.g., age at first arrest), which will have their own methodological limitations. The conviction date was used because it was the only variable coded consistently across offenders.[4] Age at first conviction makes sense in the context of the study interest for examining cost avoidance, and therefore, the ability to avoid punishment. Offenders were able to avoid a conviction, on average, for 7.5 years ($SD = 9.3$) after the start of their sex offending.

Non-sex offending

Two indicators were used to determine whether the offender had a criminal record for a non-sex crime. Non-sex crime is used here as all individuals included in the sample were first-time convicted sex

Table 1
Descriptive information for the sample of sex offenders

Variable		Mean (SD)	Me	Range
Age of actual onset		32.1 (8.8)		14.2-73.1
Age of official onset		39.6 (12.2)		18.7-75.2
Cost avoidance		7.5 (9.3)		0.1-41.2
Number of sex crime events		216.9 (513.8)	10.0	1.0-5524.0
Number of victims		2.4 (6.2)		1.0-91.0
Proportion of time free		0.76 (0.28)		0.01-1.0
Lambda		9.76 (27.71)	.64	.03-272.44
				Prevalence %
Charged for a non-sex	No			50.0
crime prior actual onset	Yes			50.0
Charged for a non-sex	No			87.0
crime after actual onset	Yes			13.0
Offenders ethnic	Caucasian			85.5
background	Black			7.2
	Other			7.2
Offenders civil status	Single			37.8
	In a relationship			40.8
	Separated			4.2
	Divorced			16.0
	Widower			1.2
Offenders education level	Elementary			25.9
	High school			62.0
	Cegep/university			11.7
	Other			0.3
Offenders employment	No			55.2
	Yes			44.8
Victim's age	<6			4.5
	6 and <12			23.9
	12 and <18			18.7
	18 and <25			10.6
	25 and over			17.2
	Mixed			25.1
Victim's gender	Female			82.2
	Male			10.8
	Mixed			6.9
Victim-offender	Biological father			14.5
relationship	Pseudo-incest			25.3
	Partner			12.0
	Acquaintance			19.9
	Stranger			12.3
	Mixed			16.0

offenders. Non-sex crime refers to whether or not the offender had been charged at least once for a non-sexual violent or a non-sexual, non-violent offense. This variable was coded using the RCMP rap sheet included in each offender's correctional file. Because two measures of onset of sex offending were used which represent the offender at two points in time, non-sex offending was coded into two indicators. The first indicator refers to whether or not the offender had a criminal record prior the actual onset of sex offending. In total, 50% of the sample had been charged with a non-sex crime prior to their actual onset of sex offending. Also, the study included an indicator to determine whether the offender had a criminal record after the actual onset of sex offending but before official onset of sex offending. The majority of offenders included in the sample (87%) were not charged for a non-sex crime during this period.

Total number of sex crime events

Refers to the total number of different times or occasions the offender sexually abused or sexually assaulted his victim(s) during the period starting from the actual onset of sex offending up to their first conviction for a sex crime. One individual may have offended on multiple occasions against the same victim, therefore increasing the number of sex crime events. Also, one individual may have offended against multiple victims on the same occasion (counted as one crime event). This variable was coded using self-report, victim statements, and police investigation notes. The mean number of crime events is 216.9 ($SD = 513.8$, Median = 10.0) and ranged between 1 and 5524. For all analyses, the total number of sex crime events was adjusted to account for the time the offender spent at-risk in the community and is referred to as lambda.

Victim characteristics

The current study examined several aspects of sex offending in relation to various characteristics of the victims, that is, the number of victims, their age and gender, as well as the victim-offender relationship. The total number of victims refers to the total number of different victims that were sexually abused by the offender during the period starting from the actual onset of sex offending up to their first conviction for a sex crime.[5] Like crime events, this variable was coded using self-report, victim statements, and police reports. The average number of total victims for each offender is 2.4 ($SD = 6.2$) (Table 1). Roughly half of the sample offended against someone less than 18 years of age. Specifically, almost one-third of the sample are child molesters, opting to offend against a victim less than 12 years old while close to 19% targeted a victim between the ages of 12 and 17 years of age. Roughly one-third of the sample offended against an adult. Interestingly, about 25% of the sample offended against multiple age categories suggesting that sexual polymorphism was relatively common. The offenders in the present sample predominantly targeted female victims, with only about 11% targeting males and about 7% switching between male and female victims. The vast majority of offenders knew their victims.

Proportion of time free

Refers to the proportion of time (in months) the offender has spent in the community (i.e., not incarcerated) since turning 18 years old. This variable allows controlling for the offenders opportunity to start his sexual criminal career as a result of being incarcerated for another crime type. The mean proportion of time free for offenders in the current sample is 0.76 ($SD = 0.28$). Phrased differently, the average offender spent three-quarters of their time in the community since turning an adult.

Lambda of sex offending

Refers to the total number of sex crime events relative to the time-at-risk (i.e., not incarcerated). This variable was calculated by dividing the number of sex crime events by the time-at-risk. Time-at-risk refers to the time period (in years) the offender was at risk of committing a sex crime. The mean lambda of sex offending is 9.76 ($SD = 27.71$) with a median of .64 and a range between .03 and 272.44.

Analytic strategy

A series of Cox regression[6] analyses were conducted to investigate (a) time to actual onset of sex offending since birth (actual onset of sex offending); (b) time to conviction since actual onset of sex offending (cost avoidance in sex offending); and, (c) time to first conviction for a sex crime since birth (official onset of sex offending) (Fig. 1). Across all three outcomes, three blocks of variables (i.e., block 1: socio-demographic characteristics, block 2: criminal career history, block 3: victim characteristics) were investigated. Within the first set of analyses, each block was successively nested in a Cox regression to examine who is the early actual onset sex offender. Specifically, model 1, the baseline model, investigated the influence of socio-demographic characteristics on actual age of onset. Model 2 assessed the association of criminal career history (i.e., presence of a charge for a non-sex crime) on the actual age of onset of sex offending while controlling for socio-demographic characteristics. In the full model, model 3, victim characteristics were examined to determine their relative impact over the offender's criminal career history and socio-demographic characteristics. The second set of analyses examined the characteristics of the offender who is the most successful in avoiding costs, while the third set investigated who is the early official onset sex offender. Both the second and third set of analyses followed a similar analytic procedure as the actual age of onset with two exceptions. First, criminal career characteristics were expanded to include the presence of a charge following actual onset, the number of sexual victims, and lambda.[7] Second, the role of actual age of onset was inspected in an additional fourth block. The use of overlapping analytic procedures allows for a comparison of the covariates across each of the outcome variables. All models were run using IBM SPSS statistics 18.0. Hazard ratios and 95% confidence intervals are reported.

Results

First, three Cox regression models were inspected to determine the covariates of the actual age of onset of sex offending (Table 2). Across all models, none of the socio-demographic nor criminal career characteristics emerged as significant indicators of actual age of onset of sex offending. In the final model, only victim characteristics emerged as a significant covariate of actual onset of sex offending. Specifically, offender's targeting stranger victims ($HR = 2.09$) exhibited an earlier actual onset compared to those offending within their biological family.

Next, the covariates of cost avoidance in sex offending were examined (Table 3). For these analyses, however, additional indicators were
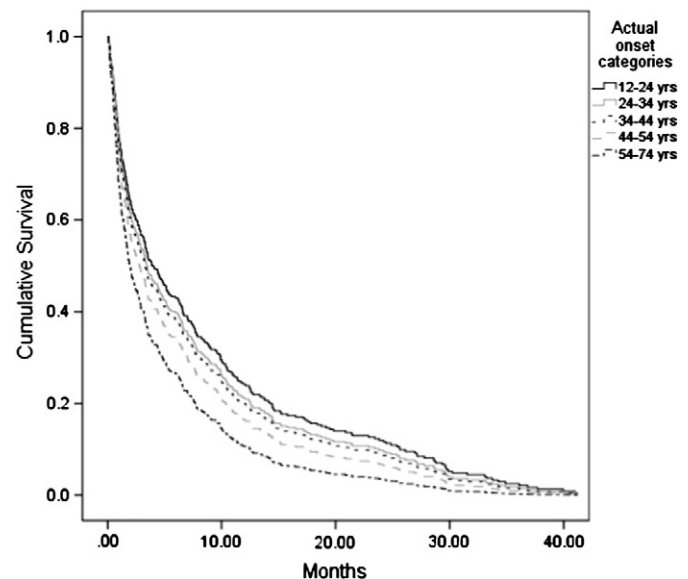

Fig. 1. Time to first conviction following actual onset of sex offending.

Table 2
Covariates of actual age of onset in sex offending

Variable	Model 1 HR (95% C.I)	Model 2 HR (95% C.I)	Model 3 HR (95% C.I)
Offender socio-demographics			
Non-caucasian	1.34 (.98-1.82)	1.34 (.99-1.84)	1.29 (.94-1.78)
In a relationship	1.19 (.95-1.49)	1.18 (.94-1.49)	1.18 (.93-1.50)
Educated	1.03 (.72-1.48)	1.04 (.73-1.50)	1.07 (.74-1.55)
Employed	.91 (.72-1.14)	.91 (.72-1.15)	.92 (.72-1.16)
Criminal career			
Charged for a non-sex crime prior actual onset		1.05 (.84-1.32)	1.06 (.83-1.36)
Victim characteristics			
Age[a]			
<6 years			1.10 (.56-2.15)
6 and <12 years			1.20 (.75-1.90)
12 and <18 years			1.24 (.79-1.96)
18 and <25 years			1.35 (.87-2.09)
Versatile			1.52 (.96-2.41)
Gender[b]			
Female			1.02 (.67-1.55)
Versatile			1.01 (.54-1.88)
Victim-offender relationship[c]			
Stranger			**2.09** (1.26-3.49)
Partner			1.26 (.72-2.19)
Pseudoincest			1.07 (.73-1.57)
Acquaintance			.97 (.63-1.50)
Versatile			.93 (.58-1.50)
−2 Log likelihood	3075.74	3075.55	3057.55
p-value	.131	.200	.042

Table 3
Covariates of cost avoidance in sex offending

Variable	Model 1 HR (95% C.I)	Model 2 HR (95% C.I)	Model 3 HR (95% C.I)	Model 4 HR (95% C.I)
Offender socio-demographics				
Non-caucasian	**1.46*** (1.07-2.00)	1.14 (.83-1.58)	.84 (.59-1.19)	.86 (.61-1.23)
In a relationship	**.76*** (.60-.96)	**.77*** (.61-.98)	.86 (.67-1.11)	.91 (.70-1.17)
Educated	.97 (.67-1.39)	.91 (.63-1.31)	.76 (.52-1.11)	.78 (.53-1.13)
Employed	**.56****** (.44-.70)	**.65**** (.51-.83)	**.61****** (.48-.78)	**.60****** (.47-.77)
Criminal career				
Charged for a non-sex crime prior actual onset		**1.83****** (1.40-2.40)	**1.71****** (1.27-2.30)	**1.73****** (1.29-2.33)
Charged for a non-sex crime after actual onset		**.41****** (.29-.58)	**.49****** (.34-.71)	**.52**** (.36-.76)
Number of victims		**.53****** (.43-.65)	**.56**** (.41-.78)	**.55****** (.40-.76)
Lambda		**.68****** (.61-.76)	**.78****** (.69-.88)	**.79****** (.70-.89)
Victim characteristics				
Age[a]				
<6 years			**.30**** (.14-.62)	**.32**** (.15-.67)
6 and <12 years			**.42**** (.25-.72)	**.45**** (.26-.76)
12 and <18 years			.77 (.50-1.19)	.81 (.52-1.27)
18 and <25 years			1.23 (.79-1.92)	1.32 (.84-2.07)
Versatile			**.57+** (.32-1.02)	.63 (.35-1.15)
Gender[b]				
Female			1.13 (.73-1.75)	1.23 (.73-1.74)
Versatile			.99 (.55-1.79)	.96 (.53-1.74)
Victim-offender relationship[c]				
Stranger			**1.84*** (1.04-3.25)	**2.10*** (1.16-3.79)
Partner			1.49 (.85-2.61)	1.65 (.93-2.94)
Pseudoincest			.82 (.55-1.22)	.84 (.56-1.25)
Acquaintance			1.28 (.79-2.06)	1.34 (.83-2.16)
Versatile			.76 (.45-1.26)	.76 (.46-1.26)
Age of actual onset				1.01 (.99-1.03)
−2 Log likelihood	2997.03	2811.39	2741.84	2739.33
p-value	.000	.000	.000	.000

included to adjust the prediction model by taking into account events that took place following the initial onset of sex offending. Hence, criminal career indicators were expanded to include the presence of a criminal record for a non-sex crime after the actual onset but prior the official onset, as well as two measures of sex offending frequency (i.e., number of victims and lambda of sex offending). Several important findings emerged. First, the offender's age of actual onset was not significantly associated with cost avoidance after adjusting for victim characteristics, criminal career indicators, and socio-demographic factors. Second, findings illustrate that offenders employed at time of the offense (HR = .60) delay detection longer than those who are not. None of the other socio-demographic variables were significant covariates of cost avoidance when all other characteristics were taken into consideration. Third, all four criminal career indicators were significantly associated with cost avoidance. Specifically, offenders charged before their actual onset (HR = 1.73), but not after (HR = .52) exhibited poor cost avoidance. On the other hand, the more victims (HR = .55) and the greater the lambda of sex crime events (HR = .79) the longer the offender was able to avoid costs. Fourth, the findings indicate that victim characteristics are associated with cost avoidance after adjusting for socio-demographic factors, criminal career characteristics, and actual age of onset. Sex offenders targeting victims under the age of 6 (HR = .32) and between 6 and 12 years (HR = .45), are more likely to delay detection longer. In addition, offenders targeting their (ex-)

partner (HR = 2.10) are less successful in avoiding costs. Overall, those who are best able to avoid the costs of sex offending are employed, do not have a criminal record prior their sex crime initiation and offend against prepubescent children within the family context.

Finally, the covariates of the official age of onset of sex offending are reported in Table 4. Socio-demographic indicators emerged as significant covariates of the official age of onset. Specifically, offenders who were non-caucasian (HR = 1.48) exhibited an earlier official onset, while those who were in a relationship (HR = .69) and employed (HR = .65) officially initiated their sexual criminal career later. Phrased differently, those with the earliest official age of onset of sex offending were non-caucasian, single, and unemployed. The findings demonstrate that offenders with a charge for a non-sex crime prior their actual sex crime initiation (HR = 1.82), but not after (HR = .34) have an earlier official age of onset. Additionally, offenders with more victims (HR =.50) and

Table 4
Covariates of official onset in sex offending

Variable	Model 1	Model 2	Model 3	Model 4
	HR (95% C.I)	HR (95% C.I)	HR (95% C.I)	HR (95% C.I)
Offender socio-demographics				
Non-caucasian	**1.77*** (1.29-2.42)**	**1.57** (1.14-2.17)**	**1.53* (1.10-2.13)**	**1.48* (1.06-2.06)**
In a relationship	.94 (.75-1.18)	.98 (.78-1.23)	1.04 (.82-1.32)	**.69** (.53-.88)**
Educated	1.04 (.72-1.50)	1.17 (.81-1.69)	1.10 (.75-1.61)	.77 (.52-1.14)
Employed	**.64*** (.51-.81)**	**.76* (.60-.97)**	**.73* (.57-.93)**	**.65** (.50-.85)**
Criminal career				
Charged for a non-sex crime prior actual onset		**1.61*** (1.24-2.10)**	**1.64** (1.24-2.16)**	**1.82*** (1.34-2.49)**
Charged for a non-sex crime after actual onset		1.04 (.74-1.45)	1.22 (.85-1.73)	**.34*** (.22-.51)**
Number of victims		**.72** (.59-.87)**	**.70* (.52-.92)**	**.50*** (.35-.72)**
Lambda		**.87** (.79-.97)**	1.01 (.90-1.14)	**.79*** (.70-.89)**
Victim characteristics				
Age[a]				
<6 years			.74 (.37-1.48)	**.34** (.16-.71)**
6 and <12 years			.68 (.42-1.12)	**.54* (.32-.91)**
12 and <18 years			1.19 (.76-1.88)	1.09 (.70-1.70)
18 and <25 years			1.41 (.91-2.19)	1.41 (.90-2.20)
Versatile			1.14 (.67-1.92)	.64 (.35-1.18)
Gender[b]				
Female			.93 (.60-1.44)	1.30 (.83-2.04)
Versatile			.84 (.46-1.54)	1.16 (.64-2.11)
Victim-offender relationship[c]				
Stranger			**3.03*** (1.75-5.23)**	1.61 (.91-2.86)
Partner			1.45 (.82-2.56)	1.24 (.70-2.20)
Pseudoincest			1.06 (.72-1.57)	.92 (.61-1.39)
Acquaintance			1.24 (.78-1.98)	1.12 (.69-1.82)
Versatile			.82 (.50-1.36)	.93 (.55-1.56)
Age of actual onset				**.86*** (.84-.87)**
−2 Log likelihood	3009.30	2950.22	2900.53	2620.54
p-value	.000	.000	.000	.000

more sex crime events (HR = .79) have a later official age of onset. After inclusion of socio-demographics, criminal career, and actual age of onset, offenders targeting children under the age of 6 years (HR = .34) and between 6 and 12 years (HR = .53) had a later official age of onset. While controlling for socio-demographic and criminal career characteristics, offenders targeting strangers (HR = 3.03) presented an earlier official onset, but this relationship disappeared once actual age of onset was introduced into the analysis. Expectedly, offenders with a later actual age of onset (HR = .86) had a later official age of onset while controlling for socio-demographic, criminal career, and victim characteristics. In other words, the later the offender actually initiated their sex offending, the later they were officially sanctioned for their sex crimes. In general, offenders with the earliest official age of onset are non-caucasian, single, unemployed, have a criminal record prior their sex crime initiation, have a limited sexual criminal career, and target adult strangers.

Discussion

The onset construct is important in criminological theory generally because it marks the beginning of the criminal career. Yet despite the obvious importance both for theory and policy of sex offending, there has been very limited research on the age of onset of serious forms of offending, such as sex offending. Though empirical studies have highlighted its heterogeneity (e.g., Lussier & Mathesius, 2012), relatively few studies have examined the correlates of the age of onset of sex offending (e.g., Cale & Lussier, 2011; Prentky & Knight, 1993). The current study departs from prior research in its simultaneous examination of both the actual and the official onset of sex offending and the time gap between. The measure of actual onset indicates that, on average, sex offenders in this study, initiate their sexual criminal career in their early thirties. Official data, however, reveals that their first sex crime conviction typically occur in the late thirties, a 7.5 year gap. This gap is significant for several reasons: (a) it allows these offenders to remain at-risk of offending including sexual offenses; (b) it increases the difficulty in obtaining forensic evidence for the initial conviction(s), and; (c) it may contribute to offenders' lowering their perception about the risk of sex offending. After all, while all offenders in the current study were arrested, charged and convicted for their sex crimes, this occurred, on average, close to a decade after their sex offending was initiated. In the context of the onset of offending, it is important to explore how these factors explain the unfolding of sex offending careers.

The first-time convicted sex offender

Considering that this sample of adult males consists of first-time convicted sex offenders sentenced to a federal prison, the typical adult first-time convicted sex offender is in his late thirties at the start of his sentence, has limited education, is married or in a common-law relationship, and may or may not have a criminal record for a non-sex offence. These men typically initiate their sex crimes in adulthood, are often unemployed at the time of their sex offence, and have an average of two victims of who they offended against approximately ten times. This sample of men is more likely to have offended against female victims, especially those within their familial environment (i.e., their child, the daughter of their partner, their partner). Further, this sample includes a sub-group of individuals who initiated their sex offending early and who were arrested and convicted for their crimes soon after.

The early-onset sex offender

For this study, early onset of sex offending refers to the actual age at which the offended committed his first sex offense. Earlier studies reported that most adult sex offender initiated their sex offending in youth (Abel et al., 1987), although subsequent research refuted this finding (e.g., Marshall, Barbaree, & Eccles, 1991). The current study supports Marshall et al. (1991) since most adult sex offenders in the present sample initiate their sex offending in adulthood. For the most part, these sex offenders typically initiate in their early thirties. The discrepancy observed between Abel et al. (1987) from Marshall and colleagues (1991) and the present study likely stems, in part, from differences in operational definitions. Specifically, Abel et al. (1987) investigated the onset of deviant sexual fantasies, while Marshall et al. (1991) and the current study examined the onset of sex offending.

Within the current sample of sex offenders, the early starter differs from the late starter only in their increased likelihood of having committed their sex crimes against stranger victims. Early starters did not differ from late starters regarding ethnicity, relationship status, education, employment, criminal history, and victim characteristics. The current findings challenge the portrayal of the early onset sex offender as uneducated, unemployed, single, with tendency towards antisocial behavior (e.g., Knight et al., 2009; Prentky & Knight, 1993). The discrepancies observed between the current study and those of previous studies may arise from sampling differences. The early-onset sex offenders relied

upon by Knight and colleagues (i.e., Knight et al., 2009; Prentky & Knight, 1993) consisted of juvenile-onset sex offenders who persisted into adulthood, a relatively rare pattern among sex offenders (Lussier & Blokland, 2014). In contrast, early-onset sex offenders in the current study are typically young adults at the start of their official sexual criminal career. As such, the findings observed by Knight and colleagues (i.e., Knight et al., 2009; Prentky & Knight, 1993) may be describing the persistent sex offender. Another possibility is the sample obtained by Knight et al. (i.e., Knight et al., 2009; Prentky & Knight, 1993) is considered to be the most sexually dangerous and mentally disturbed while the current sample consists of a range of risk levels and limited mental instability. Accordingly, in addition to describing the rare persistent juvenile sex offender, these findings may also be describing the high-risk and mentally disturbed sex offender, not the actual onset adult sex offender.

Collectively, the absence of an association between the covariates of actual onset of sex offending observed in the present study, with the minor exception of those targeting strangers, is suggestive of the possible importance of the situational contexts of these men in young adulthood. These contexts can include significant negative life events and life stressors such as marital discord or job loss (e.g., Proulx et al., 1999), among others, that may have important implications in the actual onset of sexual offending. In this context, the finding that offenders targeting strangers have an earlier actual age of onset may stem from variations in time-dependent situational contexts. While it is possible for a sex offender to meet a stranger at any given time, an incestuous offender must first establish a relationship, father the child, and then sexually victimize the child. The findings also show that early official onset of sex offending is inversely related to sex offending frequency in that serial sex offenders tend to be caught, charged and convicted earlier than non-serial offenders. Taken together, it could be that serial sex offenders exploit different offending opportunities (e.g., neighbors, acquaintances, strangers, family setting) to sustain their offending rate. This general absence of significant covariates of early actual onset of sex offending contrasts with the importance of the covariates associated with the early official onset sex offender.

The early-convicted sex offender

Consistent with the literature on the early onset offender, the current study reveals that the early-convicted sex offender is more likely to be non-Caucasian, single, unemployed, to have a prior criminal record, and an earlier actual onset of sexual offending (e.g., Cale et al., 2009; Cale & Lussier, 2011; Knight et al., 2009; Prentky & Knight, 1993). The association between a prior criminal history for a non-sexual offense and an early-official onset of sexual offending is of particular importance because previous research suggested a tentative role for antisociality in the official initiation of the sexual criminal career. In this context, the factors correlated with the official initiation of sexual offending may be the same motivating the perpetration of non-sexual crimes. Using a retrospective study of adult sexual aggressors of women and children, Cale (in press) observed that early official onset sexual aggressors exhibited an early onset antisocial trajectory marked by behavioral problems and juvenile delinquency. Consistent with developmental theorizing (Loeber & Hay, 1994), this early onset antisocial trajectory typically begins in childhood with behavioral problems (e.g., lying, running away) and escalates in seriousness throughout adolescence with the perpetration of nonviolent (e.g., drug dealing) and violent (e.g., assault) delinquency, culminating in adulthood with sexual aggression (Cale et al., 2009). This developmental progression indicates that non-sexual criminal behavior may be part of a stepping stone process (see also Elliott, 1994) that is situated within, and thus reflective of, an overarching antisocial lifestyle.

There are at least two ways in which antisocial propensity may be related to an earlier official onset of sexual offending. First, antisocial propensity is typically associated with greater levels of impulsivity (e.g., Gottfredson & Hirschi, 1990; Moffitt, 1993). When a situational opportunity presents itself, these offenders possibly are more likely to capitalize

on the opportunity to sexually offend. Second, an earlier official onset of sex offending is related to increased sexual drive and mating effort (Cale & Lussier, 2011). Relatedly, as the offender's antisocial potential increases, so to does their likelihood of utilizing antisocial strategies to obtain sexual gratification (Lussier, Blokland, Mathesius, Pardini, & Loeber, in press). The pattern in which these offenders seek gratification, particularly if they do not have a stable intimate partner, can include covert strategies (e.g., manipulation), overt strategies (e.g., coercion), or both (see Loeber & Hay, 1994). This antisocial potential may also explain why early official onset sex offenders were more likely to be single and unemployed. Specifically, they may have been more likely to be incarcerated, thus foreclosing both employment and any intimate relationships; or, alternatively, their antisocial potential and the associated impulsivity may make it difficult to maintain a lasting stable relationship and hold a steady job.

The current study also sought to investigate the association between the offender's sexual criminal career and the official age of onset of sexual offending. Previous research has demonstrated that an early onset antisocial trajectory in rapists was weakly correlated with a greater number of convictions for sex crimes in adulthood (Cale & Lussier, 2011; Lussier, LeBlanc, & Proulx, 2005), while the opposite was evident for child molesters (Lussier et al., in press; Proulx, Lussier, Ouimet & Boutin, 2008). This difference suggests that the factors associated with persistence may differ for rapists and child molesters. The current findings, however, demonstrate that early-convicted sex offenders offend against fewer victims and perpetrate fewer sex crime events. Importantly, though, the current sample consists entirely of first-time convicted sex offenders, therefore, these findings may indicate that offenders who are able to delay the costs of their sex crimes (i.e., late-convicted sex offenders) have more time to sexually offend. Thus, while the factors influencing persistence in sex offending may differ between rapists and child molesters, persistence for both groups is aided by their ability to delay costs.

Utilizing a comprehensive measure of victim characteristics, the current study reveals that early-convicted sex offenders are more likely to target adult, and to a lesser extent, stranger victims. These results are consistent with the literature that indicated rapists as opposed to child molesters have an earlier age of onset (e.g., Baxter et al., 1984; Lussier & Mathesius, 2012). As well, this literature, consistent with the current findings, demonstrated that offenders targeting stranger victims, compared to those targeting known victims (i.e., incestual offenders), have an earlier age of onset of sex offending (e.g., Lussier & Mathesius, 2012; Marshall et al., 1991; Smallbone & Wortley, 2004). No association was observed between early and late convicted sex offenders in terms of victim gender. Lussier and Mathesius (2012), however, demonstrated that offenders targeting females exhibited an earlier official age of onset. Thus, while an association does exist between victim gender and official onset of sex offending, the offender's socio-demographic and criminal career histories were more strongly related to this official initiation.

To summarize, the early-convicted sex offender typically is: unemployed, non-Caucasian, and single; exhibits a prior criminal record with early actual onset of sex offending; is less prolific in their sexual criminal career; and is more likely to target adult victims, and to a lesser extent strangers. This profile is consistent with the classical description of the early onset non-sex offender observed in the criminological literature, as someone who has low IQ, abuses drugs and alcohol, has low impulse control, exhibits criminal versatility, and an earlier age of onset of criminal behavior (e.g., Gottfredson & Hirschi, 1990; Wilson & Herrstein, 1985). However, given the positive association between actual and official age of onset, as well as a lack of overlap between the covariates of actual and official age of onset, the current description suggests the early-convicted sex offender may be the type who, in fact, is least able to avoid detection and thus the most likely to be caught.

The successful onset of sex offending

The successful onset of sex offending refers to the offenders ability to avoid costs and delay the age at which they are first convicted for their sex crimes. The most successful offenders, then, are those who are the best

able to delay the costs associated with their sex crimes. The current findings reveal that the covariates of the successful sex offender are inconsistent with the covariates for the early-convicted sex offender. In general, the study findings reveal that the successful offenders were employed, did not have a criminal record, and, to a lesser extent, were in a relationship with an intimate partner. This more conventional socio-demographic and criminal record background has been positively associated with cost avoidance generally (e.g., Kazemian & LeBlanc, 2007), as well as with sexual offenders specifically (e.g., Lussier et al., 2011). Further, the most successful offenders perpetrate the greatest number of sex crime events against the most victims. Cost avoidance, then, plays a critical role in the persistence of sex offending. The absence of punishment for the successful sex offender may reduce their perceptions of the risks associated with sexual offending and, in turn, increase the likelihood they will persist.

Despite their more conventional background, these successful sexual offenders typically targeted their own prepubescent children and were more prolific in their sexual careers.[8] The association between victim characteristics and cost avoidance suggested that the type of crime, at least for sexual offending, has a differential risk of apprehension (e.g., Gebhard et al., 1965). Accordingly, successful cost avoidance depends not only on offender characteristics, but also the type of crime the offender choses to perpetrate. Thus, both the offender and the offence characteristics are important mediating factors in successful sex offending. However, actual age of onset was not associated with cost avoidance. In other words, the timing of the onset of sex offending, whether it occurred while the offender was in his 20s or in his forties, is not related to the offender's ability to delay the costs of offending for longer periods. This insignificant association is inconsistent with the typical depiction of the early onset offender reported by propensity theorists who describe the early starter as short-sighted, impulsive, and reckless (e.g., Gottfredson & Hirschi, 1990). Based on this description, early starters should be less apt at detection avoidance. As mentioned previously, it remains possible that an early actual age of onset of sex offending is not reflective of the actual onset offender, and thus, the insignificant relationship may stem from this.

While it is difficult to draw firm conclusions given the limited theorizing on these associations, two general factors (i.e., conventional background and victim vulnerability) may explain this relationship in the context of delaying age at first conviction for a sex crime. An offender with a more conventional background may have a higher investment and attachment to conformity and thus may be more selective of the criminal opportunities they take advantage of and devote more energy to detection avoidance strategies (Beauregard & Bouchard, 2010). Also, individuals with a more conventional background may be less likely to gain the attention of authorities. In fact, it may even raise doubts about the veracity of the victim's account of the abuse. Furthermore, victims may be more likely to remain silent about the abuse given that the victim is physically and emotionally close to the perpetrator. The offender's behaviour, given his conventional background, may be interpreted by the victim and, in some instances, the victim's mother, as a mistake that will not be repeated. The more successful offenders are also targeting the most vulnerable victims – children within the family context. Children are almost entirely reliant on their family members to report the abuse. Given that this abuse is typically taking place within the family context, there may be factors motivating family members to remain silent. In instances where the victim did report the abuse, reporting typically does not occur until the victim is in their late teens and early adulthood, resulting in substantial time between the initial victimization and reporting (Lamb & Edgar-Smith, 1994).

Implications

To date, few criminal activity parameters have received as much empirical attention as the age of onset of offending. Age of onset is critical to understanding the etiology of offending and the unfolding of the criminal career. Specifically, early onset offenders are more likely to persist in their criminal career, exhibit a more frequent and versatile offending

repertoire, and are less likely to desist (e.g., Blumstein et al., 1986; DeLisi et al., 2013; Farrington et al., 2003). The current findings reveal a profile of the early official onset offender that is in line with the typical negative profile description of the early onset general (e.g., Farrington et al., 2003; Gottfredson & Hirschi, 1990; Moffitt, 1993) and sexual (e.g., Cale et al., 2009; Cale & Lussier, 2011; Knight et al., 2009; Prentky & Knight, 1993) offender. The early official onset offender, in comparison to the late onset successful offender, exhibited an unconventional background (i.e., non-Caucasian, single, unemployed), was more likely to have a prior criminal record, a limited sexual criminal career, and typically targeted adult stranger victims. Thus, the early official onset sex offender is the least successful sex offender in terms of their ability to avoid costs. Further, the profile associated with an early official onset sex offender was not in line with that observed for the early actual onset offender. Collectively, these findings indicate that actual and official onset are two separate constructs, with official onset being a better indicator of cost avoidance than actual onset. Such findings demonstrate a need to use multiple sources of information to accurately understand the criminal activity of offenders. The current study also revealed the importance of incorporating related research domains, such as criminal achievement, to understand the criminal activity of sex offenders. This was most clearly evidenced by the finding that offenders who are the best able to avoid detection were also the most prolific in their sexual criminal career. These results raise a number of questions as to the accuracy of contemporary risk assessment tools that rely heavily on official indicators of onset. Indeed, according to the findings of the current study, these tools are describing the least successful and least productive sex offenders who are the most likely to come to the attention of the authorities. Accordingly, the most dangerous and high-risk offenders may, in fact, be the least likely to be predicted as high risk, and, in turn, not be appropriately dealt with by the criminal justice system.

Limitations

While informative, the findings should be interpreted within the context of its limitations. First, we did not investigate age of onset for general offending. Thus, it is possible that the early onset offenders found in the present study were not early onset offenders for general crime. As such, the present conclusions do not represent a direct test of previous theories concerning the role of age of onset. Second, all sex offenders in the current study were caught for a sex crime or sex crimes. Accordingly, the findings are informative in terms of the offenders' ability to delay detection, but not necessarily their ability to escape detection. In other words, certain offenders may be more likely to delay detection, but consistently be caught, while other offenders may be less likely to get caught. It is possible that the offender who escapes detection may be qualitatively or quantitatively different (e.g., level of forensic awareness) from those who have not escaped detection, differences which our study could not capture. Accordingly, the present results may not generalize to those who have never been caught for their sex crime. Future research using a prospective longitudinal design with community samples may be informative in shedding light on this matter. Third, our marker of cost avoidance (i.e., age at first conviction) may have been influenced by factors outside the scope of the present study. Specifically, given that conviction comes at the end of the judicial process, factors related to judicial processing time may have influenced the age at conviction (e.g., plea bargaining, case characteristics, presence of a trial). Little is known, however, about judicial processing time. Of the limited research conducted on this topic, Walsh and colleagues (2008) demonstrated that the time between law enforcement report and disposition was less than 1 year in 12% of cases, but over 2 years in 36% of cases. It should be noted that while cost avoidance can be operationalized in other ways (e.g., age at first arrest, age at first charge), which may have reduced this potential bias, the date the offender was convicted was the only indicator that was consistently coded across all offenders.

Appendix A. Correlation matrix with variables included in the study in a sample of sexual offenders.

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
1. Offenders ethnicity (Caucasian)											
2. Offenders civil status (In a relationship)	-.042										
3. Offenders education (Educated)	-.010	-.067									
4. Offenders employment (Employed)	.081	.035	.169**								
5. Charged for a non-sex crime prior actual onset	.069	.028	-.130*	-.266***							
6. Charged for a non-sex crime after actual onset	-.020	.082	-.026	.064	-.152**						
7. Time at risk	-.074	.013	.076	.193**	-.258***	-.467***					
8. Number of victims	.057	-.050	.139*	.062	-.145**	-.017	.063				
9. Lambda	.020	.064	-.077	.080	-.213***	.198***	.005	.044			
10. Actual age of onset	.112*	-.073	.025	.077	-.003	-.188**	.090	-.017	.126*		
11. Official age of onset	.194***	.050	.055	.281***	-.328***	.066	.164*	.231***	.078	.652***	
12. Cost avoidance	.149**	.137*	.049	.296***	-.427***	.266***	.136*	.320***	.223***	-.096	.692***

Notes

1. Mating effort refers to the energy invested in obtaining sexual gratification with the opposite sex (Lalumière & Quinsey, 1996) and can be differentiated from sexual drive which refers to the strength, or level, of sexual arousal (Kafka, 1997).

2. The current study expands on the earlier work of Lussier and Mathesius (2012) and Lussier et al. (2011) in a number of ways. First, while Lussier and Mathesius (2012) described the gap between the actual onset and official age of onset the current study examines the correlates of actual and official onset and the gap between the two. Second, while the Lussier et al. (2011) study aimed to investigate the correlates of cost avoidance, it was not focused specifically on the onset of sex offending and included first-time offenders, recidivists and multi-recidivists. As such, it is unclear to the extent to which these findings can be generalized to first-time convicted sex offenders given, typically, the more severe and extensive criminal career history associated with sexual recidivists (Prentky & Knight, 1993). The current study includes first-time convicted sex offenders and examines specifically their pattern of onset.

3. All interviews were conducted in the Regional Reception Centre, a maximum-security institution run by Correction Services of Canada, in the province of Quebec. Federally sentenced offenders are sent to this institution for a needs assessment and risk classification. On average, offenders stay about six to eight weeks at this institution. Upon completion of the offenders' needs and risk assessment they are transferred to another penitentiary that has the appropriate services and risk needs (e.g., low, medium, or high-security). Importantly, all interviews were conducted after the offenders risk and needs classification were established but before being sent to the institution where they would serve out the remaining portion of their sentence.

4. Little is known about the gap between detection and conviction. The time gap is likely affected by whether the offender confessed, plea-bargained, or whether there was a trial, etc. One study (Walsh et al., 2008) has investigated this gap in a group of child molesters, reporting the time between police report and disposition was less than 1 year in 12% of cases, but more than 2 years in 36% of cases. Importantly, case characteristics were found to be only weakly related to processing time.

5. The choice of utilizing lambda based on the number of sex crime events, but not for the total number of victims can be explained by the following: (a) there is a wide range of numbers of sex crime events across sex offenders while there is a very limited range regarding the number of victims (see also, Lussier et al., 2011); (b) a lambda based on the number of victims per year at-risk simply reflect the duration of years at-risk rather than an actual offending rate; (c) multivariate models do include the absolute number of victims as a covariate. Taken together, these points suggest that a lambda based on the number of victims has limited empirical value as opposed to one based on the number of sex crime events.

6. Cox regression is a semi-parametric regression procedure that allows researchers to determine if the survival time is influenced by one or more covariates (Cox, 1972). This procedure is highly flexible as it allows for both continuous and categorical data to be used as covariates (i.e., predictor variables) and improves upon the other survival analyses (e.g., Life-tables, Kaplan-Meier) by allowing for multiple covariates in the equation, thus increasing explained variance.

7. The criminological literature indicates that chronic offending (e.g., the number of crimes committed) is inversely related to the age of onset of offending (e.g., DeLisi et al., 2013). Further, the age of onset research previously reviewed indicates that an early and persistent involvement in delinquency and antisociality may accelerate the official onset of sexual offending. Thus, prior research suggests a link between age of onset and criminality. It remains unclear, however, the extent to which criminal history does accelerate the actual age of onset of sexual offending. Further, it is uncertain if the typical association between an early age of onset and chronic offending that is observed with non-sexual offenders will unfold within a sex offender's sexual criminal career. Thus, the incorporation of non-sexual and sexual criminal career indicators will allow for the examination of a) the extent to which general offending contributes to the initiation of sexual offending; and, b) whether the age at which an offender initiates their sexual criminal career is associated with the unfolding of their sexual criminal career.

8. It could be argued that the extent of sexual offending is associated more with the nature of the victim-offender relationship (i.e., incestuous) because the father has consistent access to a vulnerable victim or victims rather than cost avoidance per se. While this relationship certainly enables sexual offending, previous research (i.e., Lussier et al., 2011) has also demonstrated that cost avoidance increases the total number of victims targeted by rapists. Thus, the facilitating influence of cost avoidance on the extent of a sex offender's sexual criminal career is witnessed both inside and outside of the family context.

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