Recidivism and Age: Follow-Up Data From 4,673 Sexual Offenders

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This study examined the relationship of age to sexual recidivism using data from 10 follow-up studies of adult male sexual offenders (combined sample of 4,673). Rapists were younger than child molesters, and the recidivism risk of rapists steadily decreased with age. In contrast, extrafamilial child molesters showed relatively little reduction in recidivism risk until after the age of 50. The recidivism rate of intrafamilial child molesters was generally low (less than 10%), except for the intrafamilial offenders in the 18- to 24-year-old age group, whose recidivism risk was comparable to that of rapists and extrafamilial child molesters. The results are discussed in terms of developmental changes in sexual drive, self-control, and opportunities to offend.

Recidivism and Age
Follow-Up Data From 4,673 Sexual Offenders

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The public is justifiably concerned about the risk posed by sexual offenders. Although the observed sexual recidivism rates are only 10% to 15% after 5 years (Hanson & Bussière, 1998), the rates continue to increase gradually with extended follow-up periods (Hanson, Steffy, & Gauthier, 1993a). Do sexual offenders remain at risk throughout their lives, or is there some age limit after which their risks for recidivism is substantially reduced? How much of a threat is a 60-year-old child molester or a 60-year-old rapist?

The association between age and general criminal behavior is well established: Most crimes are committed by young people. For crimes reported to the police, the most common age is late adolescence (16 to 18 years), with the age of violent offenders being somewhat older than that of nonviolent offenders (Gottfredson & Hirschi, 1990). Longitudinal studies, however, indicate that the rate of aggressive behavior actually peaks in the preschool years (ages 3-4) and declines steadily thereafter (Tremblay, 2000). The apparent rise in violent crime during adolescence signals a change in community response to persistent aggressive behavior. Nagin and Tremblay (1999) did

not find any persistently violent boys for whom the onset of aggression was later than age 6.

Less is known about the relationship between age and sexual crime. Based on data from 179 Canadian police departments, 81% of accused sexual offenders were 18 years of age or older (Canadian Centre for Justice Statistics, 1999). On average, accused sexual offenders are substantially older than other offenders and are slightly older than the general population. The age distribution for sexual offenders is markedly bimodal, however, with the largest peak at age 13, a dip in the early 20s, and a second peak in the mid- to late 30s (Canadian Centre for Justice Statistics, 1999). The reason for the bimodal distribution is unknown, but it does suggest that there may be a qualitative difference between adolescent and adult sexual offenders. The peak at age 13 may be attributed to generally antisocial, aggressive youth becoming sexually active. The peak in the late 30s may be related to increased opportunities for certain types of sexual offences during these years (e.g., father-daughter incest, child molestation).

Age differences are also noted among adult sexual offenders. It has long been observed that those who victimize adult women (rapists) tend to be younger than are those who target children (child molesters) (Apfelberg, Sugar, & Pfeffer, 1944; West, 1983).

The distribution of the age of accused sexual offenders does not necessarily indicate their relative recidivism risk. Although few sexual offenders are older than the age of 50, the older offenders may be more (or less) persistent than are younger sexual offenders. Hanson and Bussière's (1998) review of 21 follow-up studies ($N = 6,969$) found an overall negative relationship between age and risk for sexual recidivism (average $r = -.13$). The relationship, however, was not large, and there was considerable variability across studies.

It is possible that the relationship between age and sexual recidivism is different for different types of sexual offenders. Of all the sexual offenders, rapists show the greatest similarity to nonsexual criminals (West, 1983). Rapists are likely to have nonsexual criminal histories and are more likely than child molesters to recidivate with nonsexual crime (Hanson & Bussière, 1998). Consequently, it is likely that the recidivism rate of rapists steadily decreases with age.

The extent to which the recidivism rates of child molesters decreases with age is unknown. Given that most antisocial behavior declines with age, it is likely that the sexual recidivism rates of child molesters would similarly decline. It is possible, however, that the decline could be minimal. A strong or exclusive sexual interest in children could contribute to a sustained level of risk until late adulthood.

Child molesters who only target intrafamilial victims (incest offenders) have consistently lower recidivism risk than do other sexual offenders (Hanson & Bussière, 1998). Although incest offenders would be expected to be older than would extrafamilial child molesters (it takes time for one's own children to mature), it is unclear whether recidivism rates of incest offenders should substantially decrease with age. The disclosure process for the index offense may block access to the children in their current family, but the subsequent arrival of grandchildren may provide new opportunities.

To examine the relationship between age and sexual recidivism, secondary analyses were conducted on 10 samples of sexual offenders (total sample of 4,673). These samples were drawn from diverse settings in Canada ($k = 7$), the United States ($k = 2$), and the United Kingdom (one sample).

METHOD

Samples

All the offenders were adult males (18 years old or older). All were released from institutions, with the exception of about half of the offenders from the Washington Special Sex Offender Sentencing Alternative (SSOSA) sample, who received community sentences. Racial ethnicity was not recorded for most samples, but given the demographics of the jurisdictions from which they were selected, the offenders can be expected to be predominantly White. The sample sizes are slightly smaller than the numbers reported in the original studies due to missing age or recidivism data.

Canadian federal recidivism study—1983 to 1984 releases (Bonta & Hanson, 1995a; Bonta & Hanson, 1995b). This study examined all offenders with an index sex offense ($n = 316$) included in the complete sample of 3,180 offenders released by the Correctional Service of Canada in the fiscal year 1983-1984. Recidivism information was collected in 1994 using national criminal history records maintained by the Royal Canadian Mounted Police (RCMP).

Canadian federal 1991 to 1994 releases (Motiuk, 1995; Motiuk & Brown, 1993, 1996). This study followed a group of sexual offenders released by the Correctional Service of Canada between 1991 and 1994. The offenders in this group were those who were reviewed in 1991 (Motiuk & Porporino, 1993) while they were still incarcerated. Follow-up information was coded from 1994 RCMP records.

Canadian federal—Pacific Region (CS/RESORS Consulting, 1991; Hanson, Broom, & Stephenson, 2001). This study followed sexual offenders released in British Columbia between 1976 and 1992. The original study compared offenders who received mandatory community counseling (n = 401) with those released in earlier years without the benefit of this postrelease program (n = 288). Offenders released in the 1983-1984 fiscal year (n = 38) were removed from this sample to avoid overlap with the other Correctional Service of Canada cohort previously described. Recidivism information was coded in 2000 from RCMP records.

Alberta Hospital Edmonton—Phoenix program (Reddon, 1996; see also Studer, Reddon, Roper, & Estrada, 1996). These sexual offenders were treated at the Phoenix (Alberta Hospital Edmonton) program between 1987 and 1994. The Phoenix program is an eclectic inpatient treatment program that receives many of its referrals from federal correctional facilities. Recidivism information was collected in 1995 using RCMP records.

California's Sex Offender Treatment and Evaluation Project (Marques & Day, 1996; see also Marques, Day, Nelson, & West, 1993; Marques, Nelson, West, & Day, 1994). The primary aim of this ongoing study is to examine the efficacy of treatment. The sample included sexual offenders randomly assigned to treatment (n = 172), matched volunteer controls, treatment refusers, and a general sample of sexual offenders from the California correctional system (total sample of 1,137). Men who had offended only against their biological children were not included. Participants were admitted to this study between 1985 and 1995; follow-up information was collected in 1995 based on local and national criminal records as well as on local police and probation reports.

Institut Philippe Pinel (Montreal) (Proulx, Pellerin, McKibben, Aubut, & Ouimet, 1995; see also Pellerin et al., 1996; Proulx, Pellerin, McKibben, Aubut, & Ouimet, 1997). These sexual offenders were treated at a maximum-security psychiatric facility between 1978 and 1993. The Institut Philippe Pinel in Montreal provides long-term (1 to 3 years) treatment for sexual offenders referred from both the mental health and correctional systems. Recidivism information was collected in 1994 from RCMP records.

Millbrook recidivism study (Hanson, Steffy, & Gauthier, 1993b; see also Hanson, Scott, & Steffy, 1995; Hanson et al., 1993a). This study collected long-term recidivism information (15 to 30 years) for child molesters released between 1958 and 1974 from Millbrook Correctional Centre, a maximum-

security provincial correctional facility located in Ontario, Canada. About half of the sample went through a brief treatment program. Recidivism information was coded from RCMP records in 1989 and 1991.

Oak Ridge Division of the Penetanguishene Mental Health Centre (Rice & Harris, 1996; see also Quinsey, Rice, & Harris, 1995; Rice & Harris, 1997; Rice, Harris, & Quinsey, 1990; Rice, Quinsey, & Harris, 1991). The Oak Ridge study followed sexual offenders referred between 1972 and 1993 for treatment and/or assessment to a maximum-security mental health center located in Ontario, Canada. The majority of the referrals came from the mental health systems or the courts (e.g., pretrial fitness examinations), with a minority of cases coming from provincial or federal corrections. Follow-up information was based on RCMP records as well as mental health records (i.e., new admissions for sexual offenses, regardless of whether new charges were laid).

Her Majesty's Prison Service (United Kingdom) (Thornton, 1997). The study provided a 16-year follow-up of all sexual offenders released from Her Majesty's Prison Service (in England and Wales) in 1979 ($N = 573$). Recidivism information was based on home office records collected in 1995. Very few of the offenders in this sample would have received specialized sexual offender treatment.

Washington SSOSA (Berliner, Schram, Miller, & Milloy, 1995; Song & Lieb, 1995). This data set was created to evaluate Washington State's SSOSA, which allows judges to sentence sex offenders to community treatment. To be eligible for SSOSA, offenders must be facing their first felony conviction for sexual crimes other than first- or second-degree rape. The sample consisted of 287 offenders who received SSOSA and 300 who were statutorily eligible for SSOSA but did not receive it. The majority of the sample was White (85%). Offenders were convicted between January 1985 and June 1986, with follow-up data collected in December 1990.

Analyses

The analyses were conducted on a data set that combined the previous samples. Age was measured at the time of release from institution, except for the Washington SSOSA sample, for which age was measured at time of sentencing. Sexual recidivism was measured using the definitions used in the original reports, which in most cases, was either charges ($k = 4$) or convic-

TABLE 1:   Study Characteristics

Sample	Total Sample Size	Age (SD)	Offender Type (%)			Sample Size for Type	Years of Follow-Up	Average Recidivism Rate	Sexual Recidivism Criteria
			Rapist	EX	IN				
Canadian federal 1983 to 1984 releases	315	31 (8.7)	—	—	—	0	10	19.7	Convictions
Canadian federal 1991 to 1994 releases	241	37 (11)	53	19	28	208	2	7.1	Charges
Canadian federal Pacific Region	689	38 (11)	36	30	33	362	11	24.7	Charges
Millbrook, Ontario	186	33 (10)	00	82	18	186	23	35.5	Convictions
Institut Philippe Pinel	363	36 (11)	30	43	27	349	4	16.3	Convictions
Alberta Hospital Edmonton	363	36 (10)	27	27	46	363	5	5.5	Convictions
Sex Offender Treatment and Evaluation Project (California)	1137	38 (8.9)	29	40	31	1130	4	13.3	Charges
Oak Ridge Penetanguishene, Ontario	263	31 (9.4)	52	26	22	246	10	36.1	Charges and/or readmissions
Her Majesty's Prison Service (United Kingdom)	529	36 (12)	53	32	15	325	16	25.7	Convictions
Washington State Special Sex Offender Sentencing Alternative	587	36 (13)	10	41	49	582	5	7.5	Charges

NOTE: EX = Extrafamilial child molesters; IN = Intrafamilial child molesters.

tions ($k = 5$). The Oak Ridge sample also included readmissions to psychiatric facilities among their recidivism criteria.

Preliminary analyses were conducted that examined the association between age and recidivism in each sample. The meta-analysis of the individual samples found the same pattern of results as the analysis of the total sample. For simplicity, only the results from the total sample are presented.

The primary statistical procedure used to measure the association between age and sexual recidivism was logistic regression (Neter, Kutner, Nachtsheim, & Wasserman, 1996). Logistic regression is preferable to ordinary least square regression when the outcome variables are dichotomous. In comparison with correlation coefficients, the logistic regression coefficients are less influenced by recidivism base rates and variability in the predictor variables. One way to interpret a logistic regression coefficient is as the expected change in the recidivism rate associated with an increase in age of one year; more specifically, e^B is an odds ratio. For example, if B was $-.04$, the odds ratio would be $(2.714)^{(-.04)} = .96$. This value of .96 can be interpreted to mean that if Jack is one year older than Frank, Jack's recidivism rate would be expected to be 96% of Frank's expected recidivism rate (a 4% reduction). For small values of B, the percentage change in recidivism rates is approximately equal to the absolute value of B (i.e., B = $-.04$ corresponds to a 4% reduction; B = .10 corresponds to a 10.5% increase).

Curvilinear effects can be tested by entering the square of the predictor variable (Y^2) after entering the predictor variable (Y). Readers should be cautioned, however, that when Y and Y^2 are considered simultaneously, the value of their respective regression coefficients (and their significant tests) can be influenced by arbitrary features of scaling. Consequently, the resulting regression coefficients do not provide a test of the relative magnitude of the linear and curvilinear effects. The regression coefficients for the curve components are presented, nonetheless, to indicate the direction of any potential curvilinear effects.

RESULTS

The combined sample included 4,673 sexual offenders. Based on the offenders' predominant victim choice, the sample was divided into those who sexually victimized adult women (rapists, $n = 1,133$), child molesters who victimized any unrelated children (extrafamilial child molesters, $n = 1,411$), and child molesters who victimized only related children (incest offenders, $n = 1,207$). Excluded from the classification were 47 offenders who victimized both adult women and unrelated children and 875 offenders for whom victim
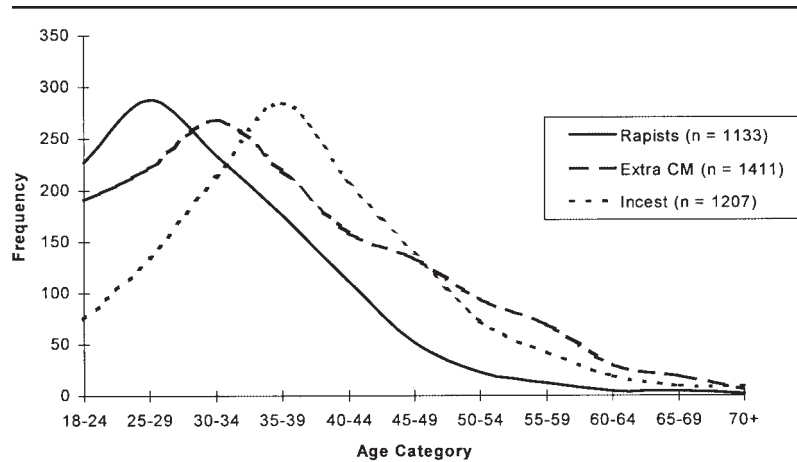
Figure 1:   Age Distribution of Sexual Offenders

information was not available. The classification, however, was based on limited information, and the cross-over between victim types would likely be greater than that implied by the current classification.

As can be seen in Figure 1, the rapists ($M = 32.1$, $SD = 8.9$) were younger than the extrafamilial child molesters ($M = 37.1$, $SD = 11.5$) and incest offenders ($M = 38.9$, $SD = 9.9$). Due to the large sample sizes, differences between all the groups were statistically significant at $p < .001$, although the average age difference between the two child molesters groups was only 1.8 years.

The sexual recidivism rate for the total sample was 17.5% (820 of 4,673). In the total sample, the recidivism rate declined steadily with age (logistic regression, $B = -.036$, $SD = 0.004$, $p < .001$). The association was linear; the addition of a curvilinear component did not significantly improve the fit of the regression line (χ^2 change $= 0.18$, $df = 1$, $p > .50$). The correlation between age and sexual recidivism was $-.13$ ($p > .001$), and the receiver operating characteristic area was .60 (95% confidence interval of .58 to .62).

The groups recidivated at different rates (logistic χ^2 change $= 57.91$, $df = 2$, $p > .001$), with incest offender recidivating less often (8.4%) than rapists (17.1%) and extrafamilial child molesters (19.5%). Without controlling for age, the difference in recidivism rates for the rapist and extrafamilial child molesters was not statistically significant (logistic $\chi^2 = 2.21$, $df = 1$, $p > .10$). Controlling for age, however, resulted in a significantly higher recidivism rate for extrafamilial child molesters than for rapists (logistic $\chi^2 = 7.71$, $df = 1$,
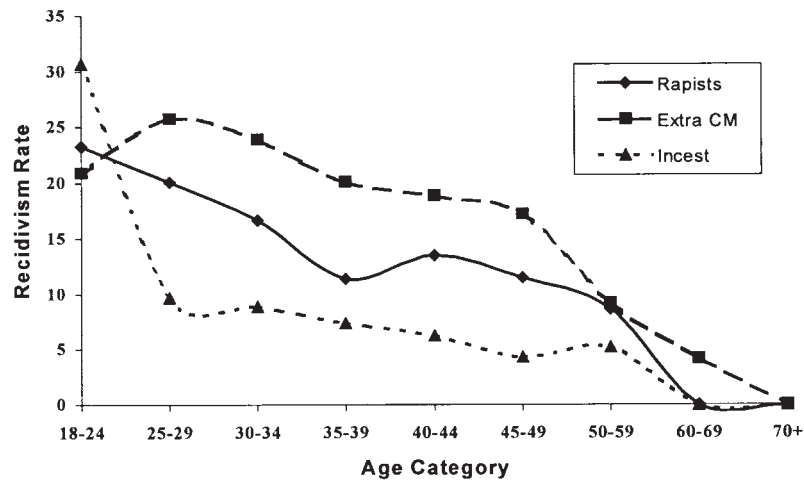
Figure 2:   Recidivism Rates by Age Category

$p < .005$). The incest offenders had the lowest recidivism rates in all the comparisons ($p < .001$).

Although the effect of age was linear in the total sample, the relationship with age was different for the rapists, extrafamilial child molesters, and incest offenders (see Figure 2; interaction between groups and age^2: logistic χ^2 change $= 6.81$, $df = 2$, $p < .05$). The separate analyses for the three groups are displayed in Table 2. The recidivism rate for rapists steadily decreased with age (logistic B $= -.040$, $SD = .010$). In contrast, the highest risk age period for extrafamilial child molesters was between the ages of 25 and 35 (not 18 to 24). The recidivism rate of the extrafamilial child molesters showed relatively little decline until after age 50.

Incest offenders showed a different pattern. The recidivism rate for the incest offenders was generally low (less than 10%), except for incest offenders in the 18-to-24 age group who showed a relatively high recidivism rate (30.7%).

There were very few recidivists among the sexual offenders released after age 60 (5 of 131 or 3.8%). The older-than-60 recidivists included two extrafamilial child molesters (2 of 45 or 4.4%) and three unclassified offenders (3 of 37 or 8.1%). None of the incest offenders ($n = 39$) or rapists ($n = 10$) released after age 60 recidivated. The oldest recidivist in the sample was released at age 72 and was reconvicted for a sexual offense the following year.

TABLE 2: The Relationship Between Age (years) and Sexual Recidivism (1 = yes, 0 = no)

Sample	Sample Size	Step	Intercept	Linear	Curvilinear		χ^2 Change	χ^2 Model
					Logistic Regression Coefficients			
Rapists	1,133	1	−0.334 (0.319)	−0.040 (0.010)	—	—	16.82***	
		2	−0.585 (0.995)	−0.024 (0.060)	0.00023	(0.00088)	0.073	17.37***
Extrafamilial child molesters	1,411	1	−0.411 (0.232)	−0.028 (0.006)	—	—	20.65***	
		2	−2.344 (0.778)	0.082 (0.043)	−0.00144	(0.00056)	7.44**	27.98***
Incest offenders	1,207	1	−0.069 (0.448)	−0.064 (0.013)	—	—	28.88***	
		2	1.359 (1.154)	−0.144 (0.061)	0.00108	(0.00079)	1.59	30.38***
Total	4,673	1	−0.324 (0.140)	−0.035 (0.004)	—	—	84.68***	
		2	−0.489 (0.410)	−0.026 (0.023)	0.00013	(0.00030)	0.19	84.87***

NOTE: Standard deviations in parentheses.
*$p < .05$. **$p < .01$. ***$p < .001$.

DISCUSSION

As with other criminal behavior, the rate of sexual offending decreased with age. The rate of decline was rather gradual, however, and there were significant differences between types of sexual offenders. Rapists were younger than other sexual offenders (45% were younger than 30), and their recidivism risk steadily decreased with age. Extrafamilial child molesters showed little decline in their recidivism risk until after the age of 50. The highest risk period for extrafamilial child molesters was between the ages of 25 and 35. In contrast, the young (18- to 24-year-old) incest offenders were at substantially higher risk than were incest offenders from other age groups.

The average recidivism rate for the incest offenders (8%) was lower than the average recidivism risk for extrafamilial child molesters (19%) and rapists (17%). Although the recidivism rates for extrafamilial child molesters and rapists were similar, extrafamilial child molesters were, on average, older than rapists. When age was controlled, the extrafamilial child molesters were at significantly higher risk for sexual recidivism than were the rapists.

Among the various factors linked to sexual offending, the three broad factors most relevant to this study are deviant sexual interests (motivation), opportunity, and low self-control. The distribution of these factors across offender types can help explain the age distribution of offenders and the variation in their recidivism rates.

Sexual Drive and/or Deviant Sexual Interests

Although all sexual offenders engage in sexually deviant behavior, most do not have an enduring preference for illegal sexual activities. Offenders may act on these less-than-preferred sexual objects or activities for any number of reasons, including peer pressure (e.g., Kanin, 1967), impulsivity, and opportunity.

Previous research has suggested that deviant sexual interest is an important risk factor for sexual recidivism (Hanson & Bussière, 1998). To the extent that deviant sexual interests are an integral part of an offender's sexual life, then the persistence of sexual offending should mirror the persistence of the offender's sexual drive.

Research on normal populations has found that male sexual drive declines steadily with age, although the reduction is relatively limited until after age 50 (Kinsey, Pomeroy, & Martin, 1948; Panser et al., 1995; Trocki, 1992). Fewer than 1% of men aged 40 to 49 reported "no sex drive," compared with 26% of men older than the age of 70 (Panser et al., 1995). Among the factors

that can contribute to reduced sexual drive are disease and age-related decreases in testosterone (Gray, Feldman, McKinlay, & Longcope, 1991).

Deviant sexual interests are more common among extrafamilial child molesters than among incest offenders (Marshall, 1997). It is difficult to directly compare the rate of deviant sexual interest among rapists with the rate among child molesters. Sexual interests exist on a continuum, and it is not clear what level of sexual interest in violence corresponds to an equivalently deviant level of sexual interest in children. On average, however, rapists respond to violent erotic stimuli more than to depictions of consensual sexual activities (Lalumière & Quinsey, 1994), suggesting that at least some rapists have deviant sexual interests.

Low Self-Control

The second major factor associated with sexual offending is low self-control or criminal lifestyle. The association between low self-control and criminal behavior is sufficiently strong that Gottfredson and Hirschi (1990) considered it to be the cause of crime. Self-control increases dramatically from childhood to adulthood, and the age-related decline in almost all impulsive, risky behavior (e.g., fast driving, substance abuse, theft, assault) suggests that self-control and constraint continue to develop well into the adult years.

Previous research has found that impulsivity and criminal lifestyle are related to the risk of sexual recidivism (Hanson & Bussière, 1998; Prentky, Knight, Lee, & Cerce, 1995). Low self-control is more common among rapists than among child molesters (West, 1983). The research has not found consistent difference between incest offenders and extrafamilial child molesters on indicators of low-self control such as low education, substance abuse, aggression, and psychopathy (Firestone et al., 1999, 2000; Miner & Dwyer, 1997; Symbaluk, 1998).

Opportunity

Opportunities for child molesting should increase in middle adulthood. Most child molesters exploit a relationship of trust with a known or related victim. It is between their late 20s and early 40s that men are most likely to have their own children and to associate with friends and family who have children.

The opportunities for rape, in contrast, should gradually decrease with age. Most rape victims are young women known to offenders. People tend to associate with people their same age; consequently, as men age, they would

be expected to encounter fewer potential victims and fewer circumstances in which rape is an easily available option (e.g., bars, college parties).

An Interpretation of the Age-Recidivism Findings

The three factors of sexual deviancy, self-control, and opportunity are consistent with the age-recidivism findings for rapists and extrafamilial child molesters. For rapists, all three factors should decline with age. Self-control should increase in young adulthood, deviant sexual drives should decrease in late adulthood, and opportunities should gradually decline throughout the life span. Consequently, it is not surprising that most rapists are young and that their recidivism risk steadily declines with age.

For extrafamilial child molesters, competing factors may influence recidivism risk during early to middle adulthood. Self-control should improve in the transition from the 20s to the 30s, but the opportunities for child molesting should increase. It is not until late adulthood that opportunities for relationships with children decline along with declines in sexual drive. This theory is consistent with the findings that child molesters are older than rapists and that the recidivism rate of extrafamilial child molesters is relatively constant during the early and middle years of adulthood.

The theory outlined previously provides only a partial fit to the finding for incest offenders. The peak frequency of incest offenders in the late 30s is consistent with increased opportunity for incestuous abuse during middle adulthood. Also, the low recidivism rates of incest offenders is consistent with their relatively low levels of deviant sexual interests (compared with extrafamilial child molesters), moderately stable lifestyles (compared with rapists), and reduced opportunity compared with other sexual offenders (their available victim pool is restricted to family members).

The high recidivism rates of young incest offenders, however, were unexpected. There were relatively few incest offenders in the 18- to 24-year age group ($n = 75$), but their recidivism rate was among the highest for any offender type (31%). These findings suggest that young incest offenders may be a group distinct from typical father-daughter incest offenders. In this study, the victims of younger incest offenders were unknown but were unlikely to be their own children. Instead, they most likely victimized their siblings, step-siblings, or nieces or nephews. The extent to which these young incest offenders resemble other sexual offenders (e.g., rapists, extrafamilial child molesters) remains to be explored. All the offenders in the sample, however, would have been expected to have used overt force or selected victims

much younger than themselves. Relatively consensual sexual behavior among siblings rarely invokes the serious criminal justice sanctions imposed on most offenders in this study.

There were few sexual offenders of any type in the advanced age categories (11% of the total sample was older than 50), and their recidivism rates were generally low (less than 10%). This decline in late adulthood can be attributed to the confluence of decreasing sexual drive and decreasing opportunity. Perhaps the most salient factor for the oldest age groups, however, would be increasing ill health and eventual death. Medical records were not available for any of the samples analyzed in this study; consequently, research has yet to examine the extent to which reductions in sexual recidivism risk should be expected for older offenders who remain in good health. In the normal population, decreases in sexual interest and activities in later years are closely linked to concomitant illness (Panser et al., 1995).

In summary, this study found that the recidivism risk for sexual offenders decreased with age, but the overall effect was not large and the pattern of decline was different for rapists, extrafamilial child molesters, and incest offenders. Extrafamilial child molesters show relatively little decline in their recidivism risk until after the age of 50. Sexual offenders released after the age of 60 showed very low recidivism rates (3.8%).

Although the factors of deviant sexual drive, low self-control, and opportunity provide a plausible explanation for the findings, other explanations need to be considered. All of the data were cross-sectional rather than longitudinal; consequently, an apparent age-related decline in sexual offending could be explained by cohort effects. Given that there are strong cohort effects in sexual behavior (e.g., almost all, or 95%, of those born after 1964 had intercourse prior to age 18 compared to half, or 51%, of those born before 1949; Trocki, 1992), it is possible that there are also cohort effects in the rates of sexual offending.

Another consideration is that offenders' ages were measured at time of release and not at the onset of offending. Consequently, the finding that child molesters were older than rapists could be attributed to a greater delay in the detection and prosecution of offenses against children than for offenses against adults.

Much of the age decline in sexual offending could also be attributed to a simple learning effect. With experience, men can learn that sex offending is not an effective route to happiness, or, more disturbingly, they can learn new and better ways to avoid detection. Disentangling these various explanation requires, of course, further research.

REFERENCES

Apfelberg, B., Sugar, C., & Pfeffer, A. Z. (1944). A psychiatric study of 250 sex offenders. *American Journal of Psychiatry*, *100*, 762-770.

Berliner, L., Schram, D., Miller, L. L., & Milloy, C. D. (1995). A sentencing alternative for sex offenders: A study of decision making and recidivism. *Journal of Interpersonal Violence*, *10*, 487-502.

Bonta, J., & Hanson, R. K. (1995a). [10-year recidivism of Canadian federal offenders]. Unpublished raw data.

Bonta, J., & Hanson, R. K. (1995b, August). *Violent recidivism of men released from prison*. Paper presented at the 103rd annual convention of the American Psychological Association, New York.

Canadian Centre for Justice Statistics. (1999). *Sex offenders* (Juristat Catalogue No. 85-002-XIE, Vol. 19, No. 3). Ottawa: Statistics Canada.

CS/RESORS Consulting. (1991). *An evaluation of community sex offender programs in the Pacific Region*. Report presented to the Correctional Service of Canada Regional Headquarters (Contract No. 21803-0-A602/01-XSB). Vancouver, BC: Author.

Firestone, P., Bradford, J. M., McCoy, M., Greenberg, D. M., Curry, S., & Larose, M. R. (2000). Prediction of recidivism in extrafamilial child molesters based on court-related assessments. *Sexual Abuse: A Journal of Research and Treatment*, *12*, 203-221.

Firestone, P., Bradford, J. M., McCoy, M., Greenberg, D. M., Larose, M. R., & Curry, S. (1999). Prediction of recidivism in incest offenders. *Journal of Interpersonal Violence*, *14*, 511-531.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.

Gray, A., Feldman, H. A., McKinlay, J. B., & Longcope, C. (1991). Age, disease, and changing sex hormone levels in middle-aged men: Results of the Massachusetts Male Aging Study. *Journal of Clinical Endocrinology and Metabolism*, *73*, 1016-1025.

Hanson, R. K., Broom, I., & Stephenson, M. (2001). [Updated recidivism information on sexual offenders in the CSC Pacific Region]. Unpublished raw data.

Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, *66*, 348-362.

Hanson, R. K., Scott, H., & Steffy, R. A. (1995). A comparison of child molesters and non-sexual criminals: Risk predictors and long-term recidivism. *Journal of Research in Crime and Delinquency*, *32*, 325-337.

Hanson, R. K., Steffy, R. A., & Gauthier, R. (1993a). Long-term recidivism of child molesters. *Journal of Consulting and Clinical Psychology*, *61*, 646-652.

Hanson, R. K., Steffy, R. A., & Gauthier, R. (1993b). [Long-term recidivism of child molesters]. Unpublished raw data.

Kanin, E. J. (1967). Reference groups and sex conduct norm violations. *The Sociological Quarterly*, *8*, 495-504.

Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual behavior in the human male*. Philadelphia: W. B. Saunders.

Lalumière, M. L., & Quinsey, V. L. (1994). The discriminability of rapists from non-sex offenders using phallometric measures: A meta-analysis. *Criminal Justice and Behavior*, *21*, 150-175.

Marques, J. K., & Day, D. M. (1996). [SOTEP follow-up data for 1995]. Unpublished raw data.

Marques, J. K., Day, D. M., Nelson, C., & West, M. A. (1993). Effects of cognitive-behavioral treatment on sex offenders' recidivism: Preliminary results of a longitudinal study. *Criminal Justice and Behavior*, *21*, 28-54.

Marques, J. K., Nelson, C., West, M. A., & Day, D. M. (1994). The relationship between treatment goals and recidivism among child molesters. *Behaviour Research and Therapy*, *32*, 577-588.

Marshall, W. L. (1997). Pedophilia: Psychopathology and theory. In D. R. Laws & W. O'Donohue (Eds.), *Sexual deviance: Theory, assessment and treatment* (pp. 152-174). New York: Guilford.

Miner, M. H., & Dwyer, S. M. (1997). The psychosocial development of sex offenders: Differences between exhibitionists, child molesters, and incest offenders. *International Journal of Offender Therapy and Comparative Criminology*, *41*, 36-44.

Motiuk, L. L. (1995). [Sex offender recidivism information for case load and new releases: March 1991 to July 1994]. Unpublished raw data.

Motiuk, L. L., & Brown, S. L. (1993). *Survival time until suspension for sex offenders on conditional release* (Research Report No. R-31). Ottawa, Canada: Correctional Service of Canada.

Motiuk, L. L., & Brown, S. L. (1996). *Factors related to recidivism among released federal sex offenders* (Research Report No. R-49). Ottawa, Canada: Correctional Service of Canada.

Motiuk, L. L., & Porporino, F. J. (1993). *An examination of sex offender case histories in federal corrections* (Research Report No. R-30). Ottawa, Canada: Correctional Service of Canada.

Nagin, D., & Tremblay, R. E. (1999). Trajectories of boys' physical aggression, opposition, and hyperactivity on the path to physically violent and non violent juvenile delinquency. *Child Development*, *70*, 1181-1196.

Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman, W. (1996). *Applied linear statistical models* (4th ed.). Burr Ridge, IL: Irwin.

Panser, L. A., Rhodes, T., Girman, C. J., Guess, H. A., Chute, C. G., Oesterling, J. E., et al. (1995). Sexual function of men ages 40 to 79 years: The Olmsted County study of urinary symptoms and health status among men. *Journal of the American Geriatrics Society*, *43*, 1107-1111.

Pellerin, B., Proulx, J., Ouimet, M., Paradis, Y., McKibben, A., & Aubut, J. (1996). Étude de la récidive post-traitement chez des agresseurs sexuels judiciarisés [Study of posttreatment recidivism among sexual offenders subject to judicial control]. *Criminologie*, *29*, 85-108.

Prentky, R. A., Knight, R. A., Lee, A. F., & Cerce, D. D. (1995). Predictive validity of lifestyle impulsivity for rapists. *Criminal Justice and Behavior*, *22*, 106-128.

Proulx, J., Pellerin, B., McKibben, A., Aubut, J., & Ouimet, M. (1995). [Static and dynamic predictors of recidivism in sexual aggressors]. Unpublished raw data.

Proulx, J., Pellerin, B., McKibben, A., Aubut, J., & Ouimet, M. (1997). Static and dynamic predictors of recidivism in sexual offenders. *Sexual Abuse*, *9*, 7-28.

Quinsey, V. L., Rice, M. E., & Harris, G. T. (1995). Actuarial prediction of sexual recidivism. *Journal of Interpersonal Violence*, *10*, 85-105.

Reddon, J. R. (1996). [Phoenix Program for Sex Offender Treatment: An evaluation update with recidivism data obtained in September 1995]. Unpublished raw data.

Rice, M. E., & Harris, G. T. (1996). [Recidivism information on 288 sexual offenders released from the Oakridge Mental Health Centre, Penetanguishene, Ontario]. Unpublished raw data.

Rice, M. E., & Harris, G. T. (1997). Cross-validation and extension of the Violence Risk Appraisal Guide for child molesters and rapists. *Law and Human Behavior*, *21*, 231-241.

Rice, M. E., Harris, G. T., & Quinsey, V. L. (1990). A follow-up of rapists assessed in a maximum-security psychiatric facility. *Journal of Interpersonal Violence*, *5*, 435-448.

Rice, M. E., Quinsey, V. L., & Harris, G. T. (1991). Sexual recidivism among child molesters released from a maximum security institution. *Journal of Consulting and Clinical Psychology*, *59*, 381-386.

Song, L., & Lieb, R. (1995). *Washington State sex offenders: Overview of recidivism studies*. Olympia: Washington State Institute for Public Policy.

Studer, L. H., Reddon, J. R., Roper, V., & Estrada, L. (1996). Phoenix: An inpatient treatment program for sex offenders. *Journal of Offender Rehabilitation*, *23*, 91-97.

Symbaluk, D. G. (1998). *An application of the general theory of crime to sex offenders*. Unpublished doctoral dissertation, University of Alberta, Edmonton, Canada.

Thornton, D. (1997). [A 16-year follow-up of 563 sexual offenders released from HM Prison Service in 1979]. Unpublished raw data.

Tremblay, R. E. (2000). The origins of youth violence. *Isuma: Canadian Journal of Policy Research/Revue canadienne de recherche sur les politiques*, *1*(2), 19-24.

Trocki, K. F. (1992). Patterns of sexuality and risky sexuality in the general population of a California county. *Journal of Sex Research*, *29*, 85-94.

West, D. J. (1983). Sex offenses and offending. In M. Tonry & N. Morris (Eds.), *Crime and justice: An annual review of research* (pp. 183-233). Chicago: University of Chicago Press.

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