

The Characteristics of Persistent Sexual Offenders: A Meta-Analysis of Recidivism Studies

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A meta-analysis of 82 recidivism studies (1,620 findings from 29,450 sexual offenders) identified deviant sexual preferences and antisocial orientation as the major predictors of sexual recidivism for both adult and adolescent sexual offenders. Antisocial orientation was the major predictor of violent recidivism and general (any) recidivism. The review also identified some dynamic risk factors that have the potential of being useful treatment targets (e.g., sexual preoccupations, general self-regulation problems). Many of the variables commonly addressed in sex offender treatment programs (e.g., psychological distress, denial of sex crime, victim empathy, stated motivation for treatment) had little or no relationship with sexual or violent recidivism.

Keywords: sexual offenders, recidivism, forensic, meta-analysis

Sexual offenses are among the crimes that invoke the most public concern. Community surveys have found that 5% to 20% of men admit to at least one instance of sexual aggression (GrotPELLIER & Elliott, 2002; Koss, 1987; Lisak & Miller, 2002), and official records indicate that 1% to 2% of the adult male population will eventually be convicted of a sexual crime (California Office of the Attorney General, 2004; P. Marshall, 1997). The observed sexual recidivism rate is typically 10% to 15% after 5 years (Hanson & Bussière, 1998), but for some offenders, the rate is much higher (Harris et al., 2003). Identifying the characteristics of persistent sexual offenders is important for understanding this highly troubling behavioral disorder, as well as for the practical task of administering policies directed toward high risk sexual offenders (e.g., treatment, civil commitment, community notification).

There is now a general consensus that sexual recidivism is associated with at least two broad factors: (a) deviant sexual interests and (b) antisocial orientation/lifestyle instability (Hanson & Bussière, 1998; Quinsey, Lalumière, Rice, & Harris, 1995;

Roberts, Doren, & Thornton, 2002). Deviant sexual interests refer to enduring attractions to sexual acts that are illegal (e.g., sex with children, rape) or highly unusual (e.g., fetishism, autoerotic asphyxia). Although all sexual offending is socially deviant, men who commit such acts do not necessarily have enduring preferences for such behavior (Hudson & Ward, 1997; W. L. Marshall, 1997).

Antisocial orientation refers to antisocial personality, antisocial traits (such as impulsivity, substance abuse, unemployment), and a history of rule violation. There is a strong association between rule violation and impulsive, reckless behavior, such as excessive drinking, frequent moves, fights, and unsafe work practices (Caspi et al., 1994; Gottfredson & Hirschi, 1990). Antisocial orientation facilitates sexual offending because individuals will not commit sexual crimes unless they are (a) willing to hurt others, (b) can convince themselves that they are not harming their victims, or (c) feel unable to stop themselves. Rapists are more likely than child molesters to have an antisocial orientation (Firestone, Bradford, Greenberg, & Serran, 2000; see review by West, 1983), but indicators of hostility and lifestyle instability are associated with sexual recidivism in both groups (Prentky, Knight, Lee, & Cerce, 1995; Rice, Quinsey, & Harris, 1991).

Contemporary theories posit that a variety of factors are associated with the development of sexual offending (Knight & Sims-Knight, 2003; Malamuth, 2003; Ward & Siegert, 2002). These models suggest that adverse family environments provide the breeding grounds for sexual offending. Lacking nurturance and guidance, the potential sexual offender develops problems in social functioning (e.g., mistrust, hostility, and insecure attachment) that, in turn, are associated with social rejection, loneliness, negative peer associations and delinquent behavior. The form of sexuality that develops in the context of pervasive intimacy deficits is likely to be impersonal and selfish and may even be adversarial. Further contributing to the risk of sexual offending are beliefs that permit nonconsenting sex. Attitudes allowing nonconsenting sex can develop through the individuals' trying to understand their own

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experiences and adopting the attitudes of their significant others (friends, family, abusers).

Such a model suggests that, apart from sexual deviancy and lifestyle instability, there may be three additional characteristics of persistent sexual offenders: (a) negative family background, (b) problems forming affectionate bonds with friends and lovers, and (c) attitudes tolerant of sexual assault. Examination of the most commonly used rating scales for sexual offenders indicate that these factors have considerable credibility among those conducting sexual offender evaluations (Beech, Fisher, & Thornton, 2003).

The research evidence addressing some of these factors is surprisingly weak. Hanson and Bussière's (1998) meta-analytic review found that the average correlation between sexual recidivism and sexual abuse as a child was $r = -.01$ (based on 5 studies), and the correlation between recidivism and deviant sexual attitudes was $r = .09$ (4 studies). The relationship between sexual recidivism and intimacy deficits (apart from marital status) has not been the target of a systemic review.

Recidivism studies are important because sexual offenders are likely to have many problems, not all of which are related to sexual offending. For example, sexual offenders are at increased risk for anxiety and depression (Raymond, Coleman, Ohlerking, Christensen, & Miner, 1999), but such problems have not been associated with sexual recidivism (Hanson & Bussière, 1998). Similarly, Hanson and Bussière's quantitative review found that sexual recidivism was unrelated to the seriousness of the index offense (e.g., victim injury, intercourse) and clinical presentation variables (e.g., denial, victim empathy, motivation for treatment).

Hanson and Bussière's (1998) meta-analysis made an important contribution by summarizing the available evidence concerning recidivism risk factors for sexual offenders. Most of their findings, however, concerned static, historical factors. Static factors are useful for long-term recidivism prediction, but those interested in understanding (and changing) recidivism risk are interested in dynamic (changeable) risk factors, also called "criminogenic needs" (Andrews & Bonta, 2003), "stable dynamic risk factors" (Hanson & Harris, 2000b) or "causal psychological risk factors" (Beech & Ward, 2004).

The purpose of the present study was to update Hanson and Bussière's (1998) meta-analysis in light of the ongoing research on sexual-offender risk assessment. Rather than repeat all the variables from Hanson and Bussière, in the present study, we considered only findings that (a) were considered important to the understanding and management of sexual offenders and (b) were weak or controversial in the earlier review (e.g., denial, victim damage). The review focused on sexual recidivism but also considered nonsexual violent and general (any) recidivism. Sexual offenders are more likely to reoffend with a nonsexual offense than with a sexual offense (Hanson & Bussière), and an important question is whether the predictors of sexual recidivism are substantially different from the predictors of nonsexual recidivism.

Method

Sample

Computer searches of PsycLIT, the National Criminal Justice Reference Service of the United States, and the library of Public Safety and Emergency Preparedness Canada were conducted by using the following key

terms: *child molester, exhibitionism, exhibitionist, failure, frotteur, incest, indecent exposure, paraphilia(s), pedophile, pedophilia, predict(ion), rape, rapist, recidivate, recidivism, recidivist, relapse, reoffend, reoffense, sex(ual) offender, sexual assault, sexual deviant*. Additional sources included the reference lists of empirical studies and previous reviews, recent issues of relevant journals (e.g., *Criminal Justice and Behavior, Sexual Abuse: A Journal of Research and Treatment*), and letters sent to 34 established researchers in the field of sexual offender recidivism.

Included were studies that examined offenders who were released after an index sexual offense and for whom the recidivism rate (sexual, violent, or any) was reported after a follow-up period. Researchers assessing offender characteristics were blind to recidivism status. Studies needed to include sufficient statistical information, and at least 5 subjects for all marginal totals were required for dichotomous variables.

As of January, 2003, our search yielded 115 usable documents (e.g., published articles, books, government reports, conference presentations). In 15 cases, the analyses were based on raw data or analyses provided by the original researchers. When the same data set was reported in several articles, all the results from these articles were considered to come from the same study. Consequently, the 115 documents represented 82 different studies (country of origin: 35 United States; 26 Canada; 12 United Kingdom; 2 Austria; 2 Sweden; 2 Australia; and 1 each from France, the Netherlands, and Denmark). Of these studies, 41 (50%) were unpublished. The studies were produced between 1943 and 2003 (median = 1996); the average sample size was 359 (median = 174, range = 12–1,407). Thirty-five studies were the same as those included in Hanson and Bussière's (1998) review, 10 studies contained updated information (e.g., longer follow-up periods, new analyses), and 37 studies were new.

Most of the studies examined mixed groups of adult sexual offenders (72 mixed-offense types, 7 child molesters, 2 rapists, 1 exhibitionist; 67 predominantly adults, 15 adolescents; all male). All the offenders had committed offenses that meet contemporary definitions of sexual crimes (i.e., old studies containing homosexuals were excluded). Most of the offenders were released from institutions (41 institution only, 17 community only, 22 institution and community, and 2 unknown). The offenders in 31 studies came from treatment programs. When demographic information was presented, the offenders were predominantly Caucasian (in 40 of 43 studies).

Effect sizes were recorded for four outcome criteria: (a) any sexual recidivism (vs. no recidivism or only nonsexual recidivism—605 effect sizes); (b) violent nonsexual recidivism (vs. no recidivism, sexual recidivism, or nonviolent recidivism—248 effect sizes); (c) any violent recidivism—sexual or nonsexual—(vs. no recidivism or only nonviolent recidivism—339 effect sizes); and (d) any recidivism (vs. no recidivism—428 effect sizes).

The most common sources of recidivism information were national criminal justice records (48), provincial or state records (32), records from treatment programs (18) and self-reports (13). Other sources (e.g., child-protection records, parole files) were used in 20 studies. In 34 studies, multiple sources were used. The source of the recidivism information for 10 studies was unknown. The recidivism criterion was arrest in 25 studies, reconviction in 24 studies, and reincarceration in 3 studies. Twenty-six studies used multiple criteria (e.g., arrest, parole violations, noncriminal justice-system reports). Recidivism was assessed solely from self-reports in 2 studies, and, in 2 studies, the recidivism criterion was unknown. The follow-up period ranged from 12 months to 330 months, with a mean of 76.0 months ($SD = 56.8$).

Coding Procedure

Each study was coded separately by the two authors, who used a standard list of variables and explicit coding rules (available on request). Variables were first coded into specific individual variables (e.g., sexual interest in boys), which were then subsumed into general categories (e.g., sexual deviancy). The general categories were as follows:

1. *Sexual deviancy*: deviant sexual interests, such as children, rape, and other paraphilias, as well as sexual preoccupations and gender dysphoria);
2. *Antisocial orientation*: antisocial personality (e.g., antisocial personality disorder, psychopathy, Minnesota Multiphasic Personality Inventory Scale 4), antisocial traits (e.g., lifestyle instability, substance abuse, hostility), and a history of rule violation (e.g., childhood criminality, history of nonsexual crime, violation of conditional release);
3. *Sexual attitudes*: tolerance of sexual crime, support for adult-child sex, and low sex knowledge;
4. *Intimacy deficits*: poor social skills, negative social influences, conflicts in intimate relationships, emotional identification with children, and loneliness;
5. *Adverse childhood environment*: conflicts with and separation from parents, neglect, and physical and sexual abuse;
6. *General psychological problems*: internalization of psychological problems (e.g., anxiety and low self-esteem, as well as major mental illness); and
7. *Clinical presentation*: denial, minimization, lack of victim empathy, low motivation for treatment, and poor progress.

Only one finding per individual variable was coded per sample on the basis of (a) sample size and (b) completeness of information. If the sample sizes and descriptive detail were equivalent, the median value was used. Because many of the variables were intended to be dynamic (changeable), posttreatment findings were privileged over pretreatment findings except when the posttreatment finding was based on an insufficient number of cases.

Interrater reliability was calculated for approximately 10% of the sample ($n = 10$), by using kappa for dichotomous and categorical variables and two-way random effects model intraclass correlation coefficients, or ICC (type absolute agreement) for ordinal and interval variables (Design 2 in Orwin, 1994). The agreement for the sample characteristics (e.g., adults or adolescents, treated or not) was perfect for 14 variables, excellent ($\kappa > .80$; ICC $> .85$) for 6 variables, and fair ($\kappa > .50$) for 3 variables: Did the recidivism criteria include parole violations, arrests, or nonjustice system reports? Kappa was low ($-.11$) for 1 variable (did the recidivism criteria include reconvictions?); for 8 of the 10 studies, the raters agreed that the researchers counted convictions, but each rater identified a different study where he or she thought conviction records had not been consulted.

The interrater reliability of the effect sizes was .83 for a single rater and .90 for the average of two raters. In the 10 reliability studies, Rater 1 identified 134 findings, and Rater 2 identified 131 findings, with agreement on 245 of the 265 findings (92.5%). The actual agreement would be greater because judges conferred on their final rating. Most differences involved simple omissions or clerical errors.

Index of Predictive Accuracy

The effect size indicator was the standardized mean difference, d , defined as follows: $d = (M_1 - M_2)/S_w$, where M_1 is the mean of the deviant group, M_2 is the mean of the nondeviant group, and S_w is the pooled-within standard deviation (Hasselblad & Hedges, 1995). In other words, d measures the average difference between the recidivists and the nonrecidivists, and compares this difference to how much recidivists differ from each other, and how much nonrecidivists differ from each other. The formula for calculating d can be found in Hanson and Morton-Bourgon (2004).

The d statistic was selected because it is less influenced by recidivism base rates than correlation coefficients—the other statistic commonly used

in meta-analyses. According to Cohen (1988), d values of .20 are considered “small;” those of .50, “medium;” and those of .80, “large.” The value of d is approximately twice as large as the correlation coefficient calculated from the same data. When the 95% confidence interval for d does not contain zero, it can be considered statistically significant at $p < .05$. When the confidence intervals for two predictors do not overlap, they can be considered significantly different from each other ($p < .05$).

Aggregation of Findings

Two methods were used to summarize the findings: median values (Slavin, 1995) and weighted mean values (Hedges & Olkin, 1985). The averaged d value, d , was calculated by weighing each d_i by the inverse of its variance:

$$d = \left(\sum_{i=1}^k w_i d_i \right) / \left(\sum_{i=1}^k w_i \right),$$

where k is the number of findings, $w_i = 1/v_i$, and v_i is the variance of the individual d_i (fixed effect model). The variance of the weighted mean was used to calculate 95% confidence intervals:

$$\text{Var}(d) = 1 / \left(\sum_{i=1}^k w_i \right); \text{ 95\% C.I.} = d \pm (\text{Var}[d])^{1/2}.$$

Weighting d values by the inverse of their variance means that findings from small samples are given less weight than findings from large samples.

When d_i was calculated from 2×2 tables, the variance of d_i was estimated by using Formula 6 from Hasselblad and Hedges (1995):

$$\text{Var}(d_i) = \frac{3}{\pi^2} \left(\frac{1}{a + .5} + \frac{1}{b + .5} + \frac{1}{c + .5} + \frac{1}{d + .5} \right).$$

When d_i was calculated from other statistics (t , ROC areas, means, etc.), the variance of d_i was estimated by using Formula 3 from Hasselblad and Hedges (1995):

$$\text{Var}(d_i) = \left[\frac{N_1 + N_2}{N_1 N_2} + \frac{d_i^2}{2(N_1 + N_2)} \right].$$

To test the generalizability of effects across studies, Hedges and Olkin's (1985) Q statistic was used:

$$Q = \sum_{i=1}^k w_i (d_i - d)^2.$$

The Q statistic is distributed as a χ^2 with $k - 1$ degrees of freedom (k is the number of studies). A significant Q statistic indicates that there is more variability across studies than would be expected by chance. Outliers were excluded from each category if the single extreme value accounted for more than 50% of the total variance (Q).

Results

On average, the observed sexual recidivism rate was 13.7% ($n = 19,267$; 73 studies), the violent nonsexual recidivism rate was 14.3% ($n = 6,928$; 24 studies), the violent recidivism rate (including sexual and nonsexual violence) was 14.3% ($n = 11,361$; 29 studies) and the general (any) recidivism rate was 36.2% ($n = 12,708$; 56 studies). Studies that specified in advance the number of recidivists and nonrecidivists were excluded from the rate calculations (e.g., Dempster, 1998). The average follow-up time

was 5–6 years. These figures should be considered underestimates because not all offenses are detected.

The 82 studies produced 1,620 effect sizes (total of 29,450 sexual offenders). The average effect size for the published studies ($M = .23$, $SD = .40$, $n = 555$) was the same as in the unpublished studies ($M = .22$, $SD = .35$, $n = 1,065$), $t(1618) = .50$, $p = .62$. The correlation between sample size and effect size was positive ($r = .12$, $n = 1,620$, $p < .001$). (A negative correlation is expected when there is selective reporting of significant findings.) The correlation remained significantly positive after removing 103 d values estimated as zero because they were reported as nonsignificant.

Effect sizes were not related to publication date ($r = .001$) or to the thoroughness with which researchers tracked recidivism information ($r = .026$). The thoroughness of the recidivism search was rated on a 7-point scale (1 = *self-report only*, 4 = *one method searches*, and 7 = *multiple sources including national criminal records*). The effect sizes were the same whether recidivism was measured by arrests ($M = .23$, $SD = .34$, $n = 1,001$) or convictions ($M = .21$, $SD = .39$, $n = 542$; $t(1541) = 1.14$, $p = .25$). The effect sizes for adult offenders ($M = .23$, $SD = .36$, $n = 1,319$) were similar to effect sizes for adolescents ($M = .21$, $SD = .37$, $n = 301$; $t(1618) = 1.11$, $p = .27$). The coding did not permit comparisons between rapists and child molesters.

Comparisons Across Categories of Risk Predictors

Table 1 presents the association with recidivism for the seven broad categories of risk factors. These broad comparisons were based on one individual finding per study (see coding manual and Hanson and Morton-Bourgon (2004) for further information about the individual predictors). The strongest predictors of sexual recidivism were those related to sexual deviancy ($d = .30$) and antisocial orientation ($d = .23$). The general category of sexual attitudes was also significantly related to sexual recidivism, but the effect was small ($d = .17$, 95% confidence interval of .04 to .28) and contained significant variability. The effects were not significant for child molester attitudes, low sex knowledge, or other deviant sexual attitudes (e.g., prudish attitudes toward masturbation).

The general category of intimacy deficits showed a small, significant relationship to sexual recidivism ($d = .15$), with substantial variation among its subcomponents. Of the subcomponents of intimacy deficits, relatively larger effects were found for conflicts

in intimate relationships ($d = .36$, 4 studies) and emotional identification with children ($d = .42$, 3 studies) than for social skills deficits ($d = -.07$, 6 studies) or loneliness ($d = .03$, 6 studies). The general categories of adverse childhood environment ($d = .09$), general psychological problems ($d = .02$), and clinical presentation ($d = -.02$) had little or no relationship with sexual recidivism.

Antisocial orientation (antisocial personality, antisocial traits, history of rule violation) was the major predictor of violent nonsexual recidivism ($d = .51$), violent (including sexual) recidivism ($d = .54$) and any recidivism ($d = .52$). Almost all of the individual indicators of antisocial orientation were significantly related to nonsexual violent, violent, and general recidivism; most of the relationships were moderate to large. Among the strongest individual predictors of any recidivism were general problems with self-regulation ($d = .75$, 6 studies, which included measures of impulsivity, lifestyle instability, and Factor 2 of the Psychopathy Checklist Revised, or PCL-R (Hare et al., 1990), a history of nonviolent crime ($d = .68$, 9 studies), psychopathy (PCL-R total scores; $d = .67$, 9 studies), and a history of nonsexual crime ($d = .63$, 8 studies).

Few variables other than antisocial orientation were predictive of nonsexual violent or general (any) recidivism. Sexual attitudes showed a small relationship with general recidivism ($d = .24$). Sexual deviancy was unrelated to violent nonsexual recidivism ($d = -.05$) and general (any) recidivism ($d = .04$).

The same major predictors were found for adolescent sex offenders as for adult sexual offenders. For adolescent sex offenders, sexual recidivism was predicted by sexual deviance ($d = .36 \pm .24$, 95% confidence interval of .12 to .60, 7 studies; $n = 734$) and antisocial orientation ($d = .19 \pm .17$, 14 studies; $n = 1,958$). Antisocial orientation also predicted violent nonsexual recidivism ($d = .33 \pm .19$, 5 studies; $n = 825$), any violent recidivism ($d = .46 \pm .26$, 3 studies; $n = 559$), and any recidivism ($d = .41 \pm .13$, 10 studies; $n = 1,400$) among adolescent sex offenders.

Possible Dynamic Risk Factors for Sexual Recidivism

Table 2 presents some of the most promising targets for intervention. All of these findings were based on at least 5 studies with a combined sample of at least 1,000, with no significant variability between studies. The most confidence can be placed in those findings with narrow confidence intervals (large sample size). Readers should be cautioned, however, that the findings based on

Table 1
Factors Associated With Recidivism Among Sexual Offenders

Category	Type of recidivism			
	Sexual	Violent nonsexual	Violent	Any
Sexual deviancy	.30 ± .08 (5,053; 32)	-.05 ± .17 (1,385; 10)	.19 ± .08 (3,155; 17)	.04 ± .08 (6,555; 19)
Antisocial orientation	.23 ± .04 (23,012; 65)	.51 ± .07 (8,283; 24)	.54 ± .05 (13,065; 28)	.52 ± .04 (15,988; 43)
Sexual attitudes	.16 ± .12 (2,370; 14)	.17 ± .22 (732; 6)	.14 ± .11 (1,598; 9)	.24 ± .10 (1,053; 9)
Intimacy deficits	.15 ± .11 (2,852; 22)	.12 ± .21 (822; 6)	.12 ± .12 (1,197; 8)	.10 ± .10 (1,715; 15)
Adverse childhood environment	.09 ± .08 (7,259; 27)	-.02 ± .17 (2,256; 7)	.14 ± .08 (5,041; 14)	.11 ± .07 (5,044; 15)
General psychological problems	.02 ± .10 (3,208; 19)	.21 ± .14 (2,089; 8)	.00 ± .10 (1,974; 10)	-.04 ± .11 (1,658; 11)
Clinical presentation	-.02 ± .09 (5,094; 24)	.16 ± .20 (2,090; 5)	.09 ± .09 (3,849; 12)	.12 ± .08 (4,714; 18)

Note. Values are averaged d values, followed by their 95% confidence interval and (in parentheses) the total sample size and the number of studies (k).

Table 2
Selected Predictors of Sexual Recidivism

Variable	Mean <i>d</i>	Median <i>d</i>	<i>Q</i>	Total (<i>k</i>)
Possible dynamic risk factors				
Any deviant sexual interest	.31 ± .10	.36	21.91	2,769 (16)
Sexual preoccupations	.39 ± .16	.51	8.31	1,119 (6)
Antisocial personality disorder	.21 ± .10	.29	13.01	3,267 (12)
Psychopathy Checklist—Revised	.29 ± .09	.25	14.36	2,783 (13)
General self-regulation problems	.37 ± .11	.34	22.85	2,411 (15)
Employment instability	.22 ± .09	.15	20.88	5,357 (15)
Hostility	.17 ± .13	.16	12.69	1,960 (9)
Potentially misleading risk factors				
Force/violence in sex offending	.09 ± .07	.00	29.28	7,221 (25)
Neglect or abuse during childhood	.10 ± .09	.00	27.43	5,490 (18)
Sexual abuse during childhood	.09 ± .10	.02	24.44	5,711 (17)
Loneliness	.03 ± .13	.02	5.79	1,810 (6)
Low self-esteem	.04 ± .16	.03	10.12	1,424 (10)
Lack of victim empathy	-.08 ± .13	-.01	0.92	1,745 (5)
Denial of sexual crime	.02 ± .17	-.02	11.72	1,780 (9)
Low motivation for treatment at intake	-.08 ± .13	-.04	13.83	1,786 (12)
Poor progress in treatment (post)	.14 ± .17	.11	9.35	1,118 (7)

Note. Each mean is followed by its 95% confidence interval. Total is number of subjects; *k* is the number of studies. All *Q* values were not significant, $p > .05$.

the minimum inclusion criteria (5 studies, 1,000 subjects) could still be substantially changed by new, large studies with divergent results.

The promising dynamic risk factors included variables related to sexual deviancy (any deviant sexual interest, sexual preoccupations), antisocial personality (antisocial personality disorder, psychopathy as measured by PCL-R), and antisocial traits (general self-regulation problems, employment instability, hostility). The potentially misleading risk factors were negative family background, internalization of psychological problems, and poor clinical presentation (e.g., denial, low motivation for treatment).

The different approaches used to assess deviant sexual interests included self-report ($d = .38 \pm .18$, 5 studies; $n = 780$), phalometric assessments ($d = .24 \pm .12$, 13 studies; $n = 2,180$), offense history ($d = .15 \pm .18$, 3 studies; $n = 1,042$), and structured clinical ratings relying on multiple sources of information ($d = .42 \pm .19$, 8 studies; $n = 947$), such as the Sexual Deviance item from Sexual Violence Risk-20 (Boer, Hart, Kropp, & Webster, 1997). For the 6 studies that presented dichotomous ratings of sexual deviancy, 65.5% of the sexual recidivists ($n = 261$) were classified as sexual deviant compared with 42.3% of the nonrecidivists ($n = 749$). Sexual preoccupations were assessed through either self-report questionnaires ($d = .35 \pm .18$, 3 studies; $n = 3,911$) or structured clinical ratings ($d = .68 \pm .45$, 3 studies; $n = 208$). The structured clinical ratings showed greater predictive accuracy than the other assessment approaches, but the confidence intervals overlapped for all measures.

Discussion

Most sexual offenders were not caught for another sexual offense (13.7%); on average, they were more likely to recidivate with a nonsexual offense than a sexual offense (overall recidivism rate of 36.2%). The major predictors of general (any) and violent recidivism were variables related to antisocial orientation, such as antisocial personality, antisocial traits, and a history of rule viola-

tion. These are the same risk factors that predict general and violent recidivism among mentally disordered offenders (Bonta, Law, & Hanson, 1998) and unselected groups of offenders (Gendreau, Little, & Goggin, 1996).

The variables that predicted sexual recidivism were similar, but not identical, to the predictors of nonsexual recidivism. Sexual deviancy and antisocial orientation were the major predictors of sexual recidivism for both adult and adolescent sexual offenders. Sexual deviancy was unrelated to nonsexual recidivism. For the general categories of deviant sexual attitudes and intimacy deficits, some of the individual variables were related to sexual recidivism (e.g., emotional identification with children, conflicts in intimate relationships) and some were not (e.g., loneliness). Such variability suggests that further research is needed to uncover those aspects of attitudes and social functioning most associated with persistent sexual offending.

The present results also suggest that the factors that initiate sexual offending may not be the same as the factors associated with persistence. Negative family backgrounds and internalization of psychological problems are common among sexual offenders (Lee, Jackson, Pattison, & Ward, 2002; Raymond et al., 1999; Smallbone & Dadds, 1998), but these factors were unrelated to sexual recidivism. The prototypic sexual recidivist is not upset or lonely; instead, he leads an unstable, antisocial lifestyle and ruminates on sexually deviant themes. There is some evidence, however, that sexual offenders are more likely than other groups to respond to stress through sexual acts and fantasies (deviant or otherwise; Cortoni & Marshall, 2001; McKibben, Proulx, & Lusignan, 1994) thereby creating discrete time periods where they are at increased risk of sexual recidivism (Hanson & Harris, 2000b).

The distinction between sexual recidivists and nonrecidivists invites comparisons with Moffitt's (1993) distinction between adolescence-limited and life-course persistent delinquents. In Moffitt's typology, the life-course persistent offenders have behavior problems in childhood, engage in interpersonal violence, and have

many sexual partners (Sluyter et al., 2003)—all characteristics that predicted sexual and nonsexual recidivism in the present study. These characteristics can be considered common manifestations of low self-control (e.g., Gottfredson & Hirschi, 1990), but they have also been considered as an evolutionary adaptation to stressful childhood environments (Belsky, Steinberg, & Draper, 1991; Moffitt, Caspi, Belsky, & Silva, 1992). The substantial overlap in the characteristics of persistent sexual and persistent nonsexual offenders suggests that those concerned with the assessment and management of sexual offenders could profit from the substantial literature on the assessment and treatment of general criminal offenders (e.g., Andrews & Bonta, 2003; Gendreau, French, & Gionet, 2004).

For those involved in applied risk assessments with sexual offenders, the review confirms sexual deviancy and antisocial orientation as major predictors of sexual recidivism and extends the range of relevant variables to include some potentially changeable characteristics: sexual preoccupations, lifestyle instability/impulsivity, pro-offending attitudes, and intimacy deficits. Readers will notice, however, that the predictive accuracy of most of the characteristics was small. Consequently, prudent evaluators need to consider a range of potential risk factors in an overall evaluation. The best methods for combining risk factors into an overall evaluation remain an active topic of scientific debate (Berlin, Galbreath, Geary, & McGlone, 2003; Hanson, Morton, & Harris, 2003).

Another outstanding research question is whether changes on the potentially dynamic factors are actually associated with reductions in recidivism risk. In general, evaluations of treatment progress showed little relationship to recidivism, with an average d of .14. Nevertheless, there were some recent examples in which ratings of progress in treatment were significantly related to recidivism (Beech, Erikson, Friendship, & Ditchfield, 2001, $d = .50$; Marques, Day, Wiederanders, & Nelson, 2002, $d = .55$). Both of these studies used highly structured approaches to evaluating treatment gains and were informed by recent empirical research.

Evaluators may also note that many of the variables used in clinical assessments had little or no relationship with recidivism (e.g., denial, low victim empathy, low motivation for treatment). The lack of relationship may be linked to the difficulty of assessing sincere remorse in criminal justice settings. It is also possible that evaluators looking for risk factors have little to gain from listening to offenders' attempts to justify their transgressions. Psychotherapists often consider full disclosure desirable, and courts are lenient toward those who show remorse; few people, however, are inclined to completely reveal their faults and transgressions. Research has even suggested that full disclosure of negative personal characteristics is associated with negative social outcomes, including poor progress in psychotherapy (Kelly, 2000). Consequently, resistance to being labeled a sexual offender may not be associated with increased recidivism risk, even though it does create barriers to engagement in treatment. Offenders who minimize their crimes are at least indicating that sexual offending is wrong.

The present findings may also be useful to those wishing to improve treatment programs for sexual offenders. On average, sexual offenders who attend treatment are less likely to recidivate than are comparison groups (Hall, 1995; Hanson et al., 2002), but it is easy to locate well-controlled studies that find no effect for sexual offender treatment (e.g., Marques, Wiederanders, Day, Nel-

son, & van Ommeren, 2005). For general offenders, treatment is effective only when it targets criminogenic needs (i.e., characteristics associated with offending; Dowden & Andrews, 2000). A review of the core treatment targets of sexual offender treatment programs (McGrath, Cumming, & Burchard, 2003, Table 9.1) suggests that most programs direct considerable resources toward characteristics that have little or no relationship with recidivism (e.g., offense responsibility, victim awareness, and empathy). An important question is whether programs that target the major predictors of sexual offense recidivism (e.g., lifestyle instability, deviant sexual interests, sexual preoccupations) are more effective than programs that target other factors.

Meta-analyses provide broad overviews and can easily neglect potentially important differences between studies. The definitions of constructs varied across studies, as did the samples. The present study focused on mixed groups of sexual offenders, and there was no effort to identify distinct predictors for specific subgroups (e.g., rapists, exhibitionists). Nevertheless, the findings were remarkably consistent. For 70% of the individual findings, the amount of variability across studies was no more than would be expected by chance ($p < .05$). Furthermore, there was substantial consistency within many of the categories of predictors, with almost all of the variables being significant (e.g., sexual deviancy, history of rule violation) or nonsignificant (e.g., general psychological problems, clinical presentation; see Hanson & Morton-Bourgon, 2004). There is still substantial variability across studies that remains to be explained, but it appears that research is getting closer to identifying the constructs that are, and are not, related to recidivism among sexual offenders. Hopefully these research gains can be used to promote effective interventions and just social policies for sexual offenders.

References

- References marked with an asterisk were included in the meta-analysis
- *Abel, G. G., Mittelman, M., Becker, J. V., Rathner, J., & Rouleau, J. L. (1988). Predicting child molesters' response to treatment. In R. A. Prentky & V. L. Quinsey (Eds.), *Human sexual aggression: Current perspectives* (pp. 223–234). New York: New York Academy of Science.
 - *Allam, J. (1999). *Effective practice in work with sex offenders: A reconviction study comparing treated and untreated offenders*. Birmingham, West Midlands, England: West Midlands Probation Service Sex Offender Unit.
 - Andrews, D. A., & Bonta, J. (2003). *The psychology of criminal conduct* (3rd ed.). Cincinnati, OH: Anderson.
 - *Barbaree, H. E., & Marshall, W. L. (1988). Deviant sexual arousal, offense history, and demographic variables as predictors of reoffense among child molesters. *Behavioural Sciences & the Law*, 6, 267–280.
 - *Barbaree, H. E., & Seto, M. C. (1998). *The ongoing follow-up of sex offenders treated at the Warkworth Sexual Behaviour Clinic* (Research Rep.). Toronto, Canada: Forensic Program, Centre for Addiction and Mental Health.
 - *Barbaree, H. E., Seto, M. C., Langton, C. M., & F. E. Peacock, E. J. (2001). Evaluating the predictive accuracy of six risk assessment instruments for adult sex offenders. *Criminal Justice and Behavior*, 28, 490–521.
 - *Barbaree, H. E., Seto, M. C., & Maric, A. (1996). *Working papers in impulsivity research: Sex offender characteristics, response to treatment, and correctional release decisions at the Warkworth Sexual Behaviour Clinic* (Research Rep.). Toronto, Canada: Forensic Division, Clarke Institute of Psychiatry.

- *Beech, A., Erikson, M., Friendship, C., & Ditchfield, J. (2001). *A six-year follow-up of men going through probation-based sex offender treatment programmes* (Findings #144). London: Home Office.
- Beech, A. R., Fisher, D. D., & Thornton, D. (2003). Risk assessment of sex offenders. *Professional Psychology: Research and Practice*, *34*, 339–352.
- Beech, A., & Ward, T. (2004). The integration of etiology and risk in sexual offenders: A theoretical framework. *Aggression and Violent Behavior*, *10*, 31–63.
- Belsky, J., Steinberg, L., & Draper, P. (1991). Childhood experiences, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development*, *62*, 647–670.
- *Berger, P. (2002, September). *The role of personality disorders and paraphilias as predictors of relapse in male sexual offenders*. Paper presented at the 7th conference of the International Association for the Treatment of Sexual Offenders, Vienna.
- Berlin, F. S., Galbreath, N. W., Geary, B., & McClone, G. (2003). The use of actuarials at civil commitment hearings to predict the likelihood of future sexual violence. *Sexual Abuse: A Journal of Research and Treatment*, *15*, 377–382.
- Boer, D. P., Hart, S. D., Kropp, P. R., & Webster, C. D. (1997). *Manual for the Sexual Violence Risk – 20: Professional guidelines for assessing risk of sexual violence*. Vancouver: The British Columbia Institute Against Family Violence.
- *Bonta, J., & Hanson, R. K. (1995). [Ten year recidivism data for offenders released from the Correctional Service of Canada in 1983/1984]. Unpublished raw data.
- Bonta, J., Law, M., & Hanson, R. K. (1998). The prediction of criminal and violent recidivism among mentally disordered offenders: A meta-analysis. *Psychological Bulletin*, *123*, 123–142.
- *Bradford, J., Firestone, P., Fernandez, M., Curry, S., & Larose, M. (1997). *Predictors of recidivism in a population of Canadian sex offenders: Psychological, physiological, and offense factors*. Unpublished manuscript.
- *Broadhurst, R. (1999). *Probabilities of sex offender recidivism: A survival analysis*. Unpublished manuscript.
- *Broadhurst, R., & Loh, N. (2003). The probabilities of sex offender rearrest. *Criminal Behaviour and Mental Health*, *13*, 121–139.
- *Broadhurst, R., & Maller, R. A. (1992). The recidivism of sex offenders in the Western Australian prison population. *British Journal of Criminology*, *32*, 54–80.
- *Buffington-Vollum, J., Edens, J. F., Johnson, D. W., & Johnson, J. K. (2002). Psychopathy as a predictor of institutional misbehaviour among sex offenders: A prospective replication. *Criminal Justice and Behavior*, *29*, 497–511.
- California Office of the Attorney General. (2004). *Sex offender registration statistics as of June 1, 2004*. Retrieved June 28, 2004, from http://caag.state.ca.us/megan/pdf/5_04pie1.pdf
- Caspi, A., Moffit, T. E., Silva, P. A., Stouthamer-Loeber, M., Krueger, R. F., & Schmutte, P. S. (1994). Are some people crime-prone? Replications of the personality-crime relationship across countries, genders, races, and methods. *Criminology*, *32*, 163–195.
- *Christiansen, K. O., Elers-Nielsen, M., Le Maire, L., & Sturup, G. K. (1965). Recidivism among sexual offenders. *Scandinavian Studies in Criminology*, *1*, 55–85.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- *Cooper, H. (2000). *Long-term follow-up of a community-based treatment program for adolescent sex offenders*. Unpublished master's thesis, Lakehead University, Thunder Bay, Ontario, Canada.
- Cortoni, F., & Marshall, W. L. (2001). Sex as a coping strategy and its relationship to juvenile sexual history and intimacy in sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, *13*, 27–43.
- *Davis, G. L., Hoffman, R. G., & Stacken, N. (1991, August). *2–4 Year post-incarceration follow-up of treated sex offenders*. Paper presented at the 99th meeting of the American Psychological Association, San Francisco.
- *Dempster, R. J. (1998). *Prediction of sexually violent recidivism: A comparison of risk assessment instruments*. Unpublished master's thesis, Simon Fraser University, British Columbia, Canada.
- *Dempster, R. J., & Hart, S. D. (2002). The relative utility of fixed and variable risk factors in discriminating sexual recidivists and nonrecidivists. *Sexual Abuse: A Journal of Research and Treatment*, *14*(2), 121–138.
- *Dix, G. E. (1976). Differential processing of abnormal sex offenders: Utilization of California's mentally disordered sex offender program. *Journal of Criminal Law & Criminology*, *67*, 233–243.
- *Doshay, L. J. (1943). *The boy sex offender and his later career*. Montclair, NJ: Patterson Smith.
- Dowden, C., & Andrews, D. A. (2000). Effective correctional treatment and violent reoffending: A meta-analysis. *Canadian Journal of Criminology*, *42*, 449–467.
- *Dwyer, S. M. (1997). Treatment outcome study: Seventeen years after sexual offender treatment. *Sexual Abuse: A Journal of Research and Treatment*, *9*, 149–160.
- *Epperson, D. L., Kaul, J. D., & Hesselton, D. (1998). *Minnesota Sex Offender Screening Tool-Revised (MnSOST-R): Development, performance, and recommended risk level cut scores*. Iowa State University & Minnesota Department of Corrections.
- *Epperson, D. L., Kaul, J. D., & Huot, S. J. (1995, October). *Predicting risk of recidivism for incarcerated sex offenders: Updated development on the Sex Offender Screening Tool (SOST)*. Paper presented at the 14th annual Research and Treatment Conference of the Association for the Treatment of Sexual Abusers, New Orleans, LA.
- *Federoff, J. P., Wisner-Carlson, R., Dean, S., & Berlin, F. S. (1992). Medroxy-progesterone acetate in the treatment of paraphilic sexual disorders. *Journal of Offender Rehabilitation*, *18*, 109–123.
- Firestone, P., Bradford, J. M., Greenberg, D. M., & Serran, G. A. (2000). The relationship between deviant sexual arousal and psychopathy in incest offenders, extrafamilial child molesters, and rapists. *Journal of the American Academy of Psychiatry and the Law*, *28*, 303–308.
- *Firestone, P., Bradford, J. M., McCoy, M., Greenberg, D. M., Curry, S., & Larose, M. R. (1998). Recidivism in convicted rapists. *Journal of the American Academy of Psychiatry & Law*, *26*(2), 185–200.
- *Fischer, D. R. (2000). *Sex offender risk assessment validation study*. Phoenix, AZ: Arizona Department of Corrections.
- *Fitch, J. H. (1962). Men convicted of sexual offences against children: A descriptive follow-up study. *British Journal of Criminology*, *3*, 18–37.
- *Frisbie, L. V., & Dondis, E. H. (1965). *Recidivism among treated sex offenders* (California Mental Health Monograph No. 5). Sacramento: State of California Department of Mental Hygiene.
- Gendreau, P., French, S. A., & Gionet, A. (2004). What works (what doesn't work): The principles of effective correctional treatment. *Journal of Community Corrections*, *13*, 4–6, 27–30.
- Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works! *Criminology*, *34*, 575–607.
- *Gfeller, B. M. (2000). *Adult sex offenders in treatment programs: Predictors of success and recidivism* (Research Rep. to the Sex Offender Treatment Advisory Group (SOTAG). Brandon, Manitoba, Canada.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- *Greenberg, D. M., Da Silva, J., & Loh, N. (2002). *Evaluation of the Western Australian sex offender treatment unit (1987–1999): A quantitative analysis*. Perth: University of Western Australia, Forensic Research Unit, Department of Psychiatry and Behavioural Sciences.
- *Greenberg, D. M., Firestone, P., Bradford, J. M., & Broom, I. (2000). Infantophiles. In L. B. Schlesinger (Ed.), *Serial offenders: Current thought, recent findings* (pp. 229–246). New York: CRC Press.

- *Gretton, H. M. (1995). [The relationship between phallometric assessment and recidivism among 185 juvenile sex offenders]. Unpublished raw data.
- *Gretton, H. M., McBride, M., Hare, R. D., O'Shaughnessy, R., & Kumka, G. (2001). Psychopathy and recidivism in adolescent sex offenders. *Criminal Justice and Behavior*, 28, 427–499.
- Grottopellier, J. K., & Elliott, D. S. (2002). *Violent sexual offending*. Boulder: Center for the Study and Prevention of Violence, University of Colorado.
- *Hall, G. C. N. (1988). Criminal behavior as a function of clinical and actuarial variables in a sexual offender population. *Journal of Consulting and Clinical Psychology*, 56, 773–775.
- Hall, G. C. N. (1995). Sexual offender recidivism revisited: A meta-analysis of recent treatment studies. *Journal of Consulting and Clinical Psychology*, 63, 802–809.
- *Hanson, R. K. (2002). [Evaluation of Manitoba's Secondary Risk Assessment]. 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., Gordon, A., Harris, A. J. R., Marques, J. K., Murphy, W., Quinsey, V. L., & Seto, M. C. (2002). First report of the Collaborative Outcome Data Project on the effectiveness of psychological treatment for sex offenders. *Sexual Abuse: A Journal of Research and Treatment*, 14, 169–194.
- *Hanson, R. K., & Harris, A. J. R. (2000a). [Dynamic predictors of sexual recidivism based on comparing 208 recidivists and 201 non-recidivists on community supervision]. Unpublished raw data.
- Hanson, R. K., & Harris, A. J. R. (2000b). Where should we intervene? Dynamic predictors of sex offense recidivism. *Criminal Justice and Behavior*, 27, 6–35.
- Hanson, R. K., Morton, K. E., & Harris, A. J. R. (2003). Sexual offender recidivism risk: What we know and what we need to know. In R. A. Prentky, E. S. Janus, & M. C. Seto (Eds.), *Annals of the New York Academy of Sciences: Vol. 989. Sexually coercive behavior: Understanding and management* (pp. 154–166). New York: New York Academy of Sciences.
- Hanson, R. K., & Morton-Bourgon, K. E. (2004). *Predictors of sexual recidivism: An updated meta-analysis*. (Research Rep. No. 2004–02). Ottawa, Canada: Public Safety and Emergency Preparedness Canada.
- *Hanson, R. K., Steffy, R. A., Scott, H., & Gauthier, R. (1993). [Long-term recidivism of child molesters released from Millbrook Institution between 1958 & 1974]. Unpublished raw data.
- Hare, R. D., Harpur, T. J., Hakstian, A. R., Forth, A. E., Hart, S. D., & Newman, J. P. (1990). The Revised Psychopathy Checklist: Reliability and factor structure. *Psychological Assessment*, 2, 338–341.
- *Harris, G. T., Rice, M. E., Quinsey, V. L., Lalumière, M. L., Boer, D., & Lang, C. (2003). A multi-site comparison of actuarial risk instruments for sex offenders. *Psychological Assessment*, 15, 413–425.
- Hasselblad, V., & Hedges, L. V. (1995). Meta-analysis of screening and diagnostic tests. *Psychological Bulletin*, 117, 167–178.
- *Haynes, A. K., Yates, P. M., Nicholaichuk, T., Gu, D., & Bolton, R. (2000, June). *Sexual deviancy, risk and recidivism: The relationship between deviant arousal, the RRASOR and sexual recidivism*. Paper presented at the annual conference of the Canadian Psychological Association, Ottawa, Ontario, Canada.
- *Hecker, J., Scoular, J., Righthand, S., & Nangle, D. (2002, October). *Predictive validity of the J-SOAP over 10-plus years: Implications for risk assessment*. Poster presented at the 21st annual conference of the Association for the Treatment of Sexual Abusers, Montreal, Quebec, Canada.
- Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. New York: Academic Press.
- *Hildebrand, M., de Ruiter, C., & de Vogel, V. (2004). Psychopathy and sexual deviance in treated rapists: Association with (sexual) recidivism. *Sexual Abuse: A Journal of Research and Treatment*, 16, 1–24.
- *Hood, R., Shute, S., Feilzer, M., & Wilcox, A. (2002). Sex offenders emerging from long-term imprisonment: A study of their long-term reconviction rates and of parole board members' judgments of their risk. *British Journal of Criminology*, 42, 371–394.
- *Hudson, S. M., Wales, D. S., Bakker, L., & Ward, T. (2002). Dynamic risk factors: The Kia Marama evaluation. *Sexual Abuse: A Journal of Research and Treatment*, 14, 103–119.
- Hudson, S. M., & Ward, T. (1997). Rape: Psychopathology and theory. In D. R. Laws & W. O'Donohue (Eds.), *Sexual deviance: Theory, assessment and treatment* (pp. 332–355). New York: Guilford Press.
- *Kahn, T. J., & Chambers, H. J. (1991). Assessing reoffense risk with juvenile sexual offenders. *Child Welfare*, 70, 333–345.
- Kelly, A. E. (2000). Helping construct desirable identities: A self-presentational view of psychotherapy. *Psychological Bulletin*, 126, 475–494.
- *Khanna, A., Brown, P., Malcolm, P. B., & Williams, S. M. (1989, March). *Outcome data on sex offenders assessed and treated at Regional Treatment Centre (Ontario)*. Paper presented at the annual meeting of the Special Needs Offenders Conference, Ottawa, Ontario, Canada.
- Knight, R. A., & Sims-Knight, J. E. (2003). The developmental antecedents of sexual coercion against women: Testing alternative hypotheses with structural equation modeling. In R. A. Prentky, E. S. Janus, & M. C. Seto (Eds.), *Annals of the New York Academy of Sciences: Vol. 989. Sexually coercive behavior: Understanding and management* (pp. 72–85). New York: New York Academy of Sciences.
- Koss, M. P. (1987). Hidden rape: Sexual aggression and victimization in a national sample of students in higher education. In A. W. Burgess (Ed.), *Rape and sexual assault II* (pp. 3–25). New York: Garland.
- *Lab, S. P., Shields, G., & Schondel, C. (1993). Research note: An evaluation of juvenile sexual offender treatment. *Crime and Delinquency*, 39, 543–553.
- *Langevin, R., & Fedoroff, J. P. (2000). *25 year recidivism study of sex offenders*. Unpublished manuscript.
- *Långström, N. (2002a). Long-term follow-up of criminal recidivism in young offenders: Temporal patterns and risk factors. *Psychology, Crime & the Law*, 8, 41–58.
- *Långström, N. (2002b). [Relationship of denial to recidivism among 46 juvenile sex offenders in Sweden]. Unpublished raw data.
- *Långström, N., & Grann, M. (2000). Risk for criminal recidivism among young sex offenders. *Journal of Interpersonal Violence*, 15, 855–871.
- *Långström, N., Sjöstedt, G., & Grann, M. (2004). Psychiatric disorders and recidivism among sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 16, 139–150.
- *Langton, C. M. (2003a). *Contrasting approaches to risk assessment with adult male sexual offenders: An evaluation of recidivism prediction schemes and the utility of supplementary clinical information for enhancing predictive accuracy*. Unpublished doctoral dissertation, Institute of Medical Science, University of Toronto, Toronto, Ontario, Canada.
- *Langton, C. M. (2003b). [The relationship between progress in treatment and recidivism among 444 sexual offenders released from Warkworth Institution]. Unpublished raw data.
- Lee, J., Jackson, H., Pattison, P., & Ward, T. (2002). Developmental risk factors for sexual offending. *Child Abuse & Neglect*, 26, 73–92.
- Lisak, D., & Miller, P. M. (2002). Repeat rape and multiple offending among undetected rapists. *Violence and Victims*, 17, 73–84.
- *Mair, K. J., & Wilson, D. (1994). *Prevalence, prediction and perseveration of sexual reoffending in a sample identified through court records*. Unpublished manuscript.
- *Mair, K. J., & Wilson, D. (1995). *Sexual reconviction over time in Scottish sex offenders identified through court records*. Unpublished manuscript.
- Malamuth, N. M. (2003). Criminal and noncriminal sexual aggressors:

- Integrating psychopathy in hierarchical-mediational confluence model. In R. A. Prentky, E. S. Janus, & M. C. Seto (Eds.), *Annals of the New York Academy of Sciences: Vol. 989. Sexually coercive behavior: Understanding and management* (pp. 33–58). New York: New York Academy of Sciences.
- *Marques, J. K., & Day, D. M. (1996). [SOTEP follow-up data for 1995]. Unpublished raw data.
- *Marques, J. K., Day, D. M., Wiederanders, M., & Nelson, C. (2002, October). *Main effects and beyond: New findings from California's Sex Offender Treatment & Evaluation Project (SOTEP)*. Paper presented at the 21st annual conference of the Association for the Treatment of Sexual Abusers, Montreal, Quebec, Canada.
- Marques, J. K., Wiederanders, M., Day, D. M., Nelson, C., & van Ommeren, A. (2005). Effects of a relapse prevention program on sexual recidivism: Final results from California's Sex Offender Treatment and Evaluation Project (SOTEP). *Sexual Abuse: A Journal of Research and Treatment, 17*, 79–107.
- Marshall, P. (1997). *The prevalence of convictions for sexual offending* (Research Finding No. 55). London: Research and Statistics Directorate, Home Office.
- 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 Press.
- *Marshall, W. L., & Barbaree, H. E. (1988). The long-term evaluation of a behavioral treatment program for child molesters. *Behaviour, Research and Therapy, 26*, 499–511.
- *McBride, M., Gretton, H., Hare, R. D. (1995, October). *Familial risk factors, psychopathy and recidivism in adolescent sexual offenders*. Paper presented at the annual conference of the Association for the Treatment of Sexual Abusers, New Orleans, LA.
- McGrath, R. J., Cumming, G. F., & Burchard, B. L. (2003). *Current practices and trends in sexual abuser management*. Brandon, VT: Safer Society.
- *McGrath, R. J., Cumming, G., Livingston, J. A., & Hoke, S. E. (2003). Outcome of a treatment program for adult sex offenders: From prison to community. *Journal of Interpersonal Violence, 18*(1), 3–17.
- McKibben, A., Proulx, J., & Lusignan, R. (1994). Relationships between conflict, affect and deviant sexual behaviours in rapists and pedophiles. *Behaviour Research and Therapy, 13*, 571–575.
- *Meyer, L. C., & Romero, J. (1980). *A ten-year follow-up of sex offender recidivism*. Unpublished manuscript.
- *Meyer, W. J., Cole, C., & Emory, E. (1992). Depo Provera treatment for sex offending behaviour: An evaluation of outcome. *Bulletin of the American Academy of Psychiatry and Law, 20*, 249–259.
- *Miner, M. H. (2002). [Factors associated with recidivism among 129 juvenile sex offenders released from Minnesota Corrections]. Unpublished raw data.
- *Minnesota Department of Corrections. (1999). *Community-based sex offender program evaluation project: 1999 report to the legislature*. St. Paul, MN: Author.
- Moffitt, T. E. (1993). "Life-course-persistent" and "adolescence-limited" antisocial behavior: A developmental taxonomy. *Psychological Review, 100*, 893–910.
- Moffitt, T. E., Caspi, A., Belsky, J., & Silva, P. A. (1992). Childhood experience and the onset of menarche: A test of a sociobiological model. *Child Development, 63*, 47–58.
- *Mohr, J. W., Turner, R. E., & Jerry, M. B. (1964). *Pedophilia and exhibitionism*. Toronto, Canada: University of Toronto Press.
- *Money, J., & Bennett, R. G. (1981). Post adolescent paraphilic sex offenders: Antiandrogenic and counseling therapy follow-up. *International Journal of Mental Health, 10*, 122–133.
- *Morton, K. E. (2003). [Recidivism prediction in a sample of male adolescent sexual offenders assessed at a community sexual offender treatment program]. Unpublished raw data.
- *Motiuk, L. L., & Brown, S. L. (1995). [Survival time for sexual offenders released from the Correctional Services of Canada in 1991 & 1994]. Unpublished raw data.
- *Mulloy, R., & Smiley, W. C. (1996). *Recidivism and treated sex offenders*. Paper presented at the International Congress of Psychologists, Montreal, Quebec, Canada.
- *Nunes, K. L., Serran, G. A., Firestone, P., Greenberg, D. M., & Bradford, J. M. (2000, November). *A comparison of child molesters who deny vs. those who admit their offenses*. Paper presented at the annual conference for the Association for the Treatment of Sexual Abusers, San Diego, CA.
- *Nutbrown, V., & Stasiak, E. (1987). *A retrospective analysis of O. C. I. cost effectiveness 1977–81* (Ontario Correctional Institute Research Monograph No. 2). Brampton, Ontario, Canada: Ontario Ministry of Correctional Services.
- *Ohio Department of Rehabilitation and Correction. (2001). *Ten-year recidivism follow-up of 1989 sex offender releases*. Columbus, OH: Author.
- Orwin, R. G. (1994). Evaluating coding decisions. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 139–162). New York: Russell Sage Foundation.
- *Pacht, A. R., & Roberts, L. M. (1968). Factors related to parole experience and the deviated sex offender. *Correctional Psychologist, 3*, 8–11.
- *Perkins, D. (1987). A psychological treatment programme for sex offenders. In B. J. McGurk, D. M. Thornton, and M. Williams (Eds.), *Applying psychology to imprisonment: Theory and practice* (pp. 191–249). London: Her Majesty's Stationery Office.
- *Prentky, R., Harris, B., Frizzell, K., & Righthand, S. (2000). An actuarial procedure for assessing risk with juvenile sex offenders. *Sexual Abuse: A Journal of Research and Treatment, 12*, 71–93.
- *Prentky, R., Knight, R. A., & Lee, A. F. S. (1997). Risk factors associated with recidivism among extrafamilial child molesters. *Journal of Consulting and Clinical Psychology, 65*, 141–149.
- *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 in sexual aggressors]. Unpublished raw data.
- *Quinsey, V. L., Khanna, A., & Malcolm, P. B. (1998). A retrospective evaluation of the Regional Treatment Centre sex offender treatment program. *Journal of Interpersonal Violence, 13*, 621–644.
- Quinsey, V. L., Lalumière, M. L., Rice, M. E., & Harris, G. T. (1995). Predicting sexual offenses. In J. C. Campbell (Ed.), *Assessing dangerousness: Violence by sexual offenders, batterers, and child abusers* (pp. 114–137). Thousand Oaks, CA: Sage.
- *Quinsey, V. L., Rice, M. E., & Harris, G. T. (1995). Actuarial prediction of sexual recidivism. *Journal of Interpersonal Violence, 10*, 85–105.
- *Rabinowitz-Greenberg, S. R. (1999). *Predictors of recidivism in a population of Canadian exhibitionists: Psychological, phallometric and offense factors*. Unpublished doctoral dissertation, University of Ottawa, Ottawa, Canada.
- *Radzinowicz, L. (1957). *Sexual offenses: A report of the Cambridge Department of Criminal Science*. London: MacMillan.
- *Rasmussen, L. A. (1999). Factors related to recidivism among juvenile sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 11*, 69–85.
- Raymond, N. C., Coleman, E., Ohlerking, R., Christensen, G. A., & Miner, M. (1999). Psychiatric comorbidity in pedophilic sex offenders. *American Journal of Psychiatry, 156*, 786–788.
- *Reddon, J. R., Studer, L., & Estrada, L. (1996). [Recidivism data from the Phoenix Program for sex offender treatment]. Unpublished raw data.
- *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. (1989). Predicting sexual recidivism among treated and untreated extrafamilial child molesters released from a maximum security psychiatric institution (Penetanguishene Mental Health Centre Research Report, Vol. VI (3)). Penetanguishene, Ontario, Canada.
- *Rice, M. E., Quinsey, V. L., & Harris, G. T. (1991). Sexual recidivism among child molesters released from a maximum security psychiatric institution. *Journal of Consulting and Clinical Psychology, 59*, 381–386.
- Roberts, C. F., Doren, D. M., & Thornton, D. (2002). Dimensions associated with assessments of sex offender recidivism risk. *Criminal Justice and Behavior, 29*, 569–589.
- *Rooth, F. G., & Marks, I. M. (1974). Persistent exhibitionism: Short-term response to aversion, self-regulation, and relaxation treatments. *Archives of Sexual Behavior, 3*, 227–249.
- *Ryan, G., & Miyoshi, T. (1990). Summary of a pilot follow-up study of adolescent sexual perpetrators after treatment. *Interchange, 1*, 6–8.
- *Santman, J. (1998). *A taxonomic model of juvenile sexual offender recidivism*. Unpublished doctoral dissertation, CA School of Professional Psychology, Fresno, CA.
- *Schram, D. D., & Milloy, C. D. (1995). *Community notification: A study of offender characteristics and recidivism*. Olympia, WA: Washington State Institute for Public Policy.
- *Serin, R. C., Mailloux, D. L., & Malcolm, P. B. (2001). Psychopathy, deviant sexual arousal and recidivism among sexual offenders. *Journal of Interpersonal Violence, 16*, 234–246.
- *Sjöstedt, G., & Långström, N. (2001). Actuarial assessment of sex offender recidivism risk: A cross-validation of the RRASOR and the Static-99 in Sweden. *Law and Human Behaviour, 25*, 629–645.
- *Sjöstedt, G., & Långström, N. (2002). Assessment of risk for criminal recidivism among rapists: A comparison of four different measures. *Psychology, Crime & the Law, 8*, 25–40.
- Slavin, R. E. (1995). Best evidence synthesis: An intelligent alternative to meta-analysis. *Journal of Clinical Epidemiology, 48*, 9–18.
- Sluyter, F., Arseneault, L., Moffitt, T. E., Veenema, A. H., de Boer, S., & Koolhaas, J. M. (2003). Toward an animal model for antisocial behavior: Parallels between mice and humans. *Behavior Genetics, 33*, 563–574.
- Smallbone, S. W., & Dadds, M. R. (1998). Childhood attachment and adult attachment in incarcerated adult male sex offenders. *Journal of Interpersonal Violence, 13*, 555–573.
- *Smith, W. R., & Monastersky, C. (1986). Assessing juvenile sexual offenders' risk for reoffending. *Criminal Justice and Behavior, 13*, 115–140.
- *Song, L., & Lieb, R. (1994). [Recidivism data for the study of Washington State's sentencing alternative for sex offenders]. Unpublished raw data.
- *Soothill, K. L., Jack, A., & Gibbens, T. C. N. (1976). Rape: A 22-year cohort study. *Medicine, Science, and the Law, 16*, 62–69.
- *Soothill, K. L., Way, C. K., & Gibbens, T. C. N. (1980). Rape acquittals. *Modern Law Review, 43*, 159–172.
- *Sturup, G. K. (1953). Sexual offenders and their treatment in Denmark and the other Scandinavian countries. *International Review of Criminal Policy, 4*, 1–19.
- *Sturup, G. K. (1960). Sex offenses: The Scandinavian experience. *Law and Contemporary Problems, 25*, 361–375.
- *Thornton, D. (1997). [A 16-year follow-up of 563 sexual offenders from HM Prison Service in 1979]. Unpublished raw data.
- *Thornton, D. (2002). [Factors associated with sexual recidivism in a sample of treated sex offenders]. Unpublished raw data.
- *Tough, S. E. (2001). *Validation of two standardized risk assessments (RRASOR, 1997; Static-99, 1999) on a sample of adult males who are developmentally disabled with significant cognitive deficits*. Unpublished master's thesis, University of Toronto, Toronto, Ontario, Canada.
- *Tracy, F., Donnelly, H., Morgenbesser, L., & MacDonald, D. (1983). Program evaluation: Recidivism research involving sex offenders. In J. G. Greer & I. R. Stuart (Eds.), *The sexual aggressor: Current perspectives on treatment* (pp. 198–213). New York: Van Nostrand Reinhold.
- *Waite, D., Pinkerton, R., Wieckowski, E., McGarvey, E., & Brown, G. L. (2002, October). *Tracking treatment outcome among juvenile sexual offenders: A nine year follow-up study*. Paper presented at the 21st annual conference of the Association for the Treatment of Sexual Abusers, Montreal, Quebec, Canada.
- Ward, T., & Siegert, R. J. (2002). Toward a comprehensive theory of child sexual abuse: A theory knitting perspective. *Psychology, Crime, & Law, 8*, 319–351.
- *Weaver, C., & Fox, C. (1984). The Berkeley Sex Offenders Group: A seven-year evaluation. *Probation Journal, 31*, 143–146.
- 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.
- *Wing, S. W. (1984). *A study of reoffenses by treated sex offenders at Western State Hospital*. Unpublished manuscript.
- *Witte, T., Di Placido, C., Gu, D., & Wong, S. (2002, May). *Criminal Sentiments Scale: Predictive validity in a sample of sexual offenders primarily composed of rapists*. Poster presented at the 63rd annual convention of the Canadian Psychological Association, Vancouver, British Columbia, Canada.
- *Witte, T., Di Placido, C., & Wong, S. (2001). *How dangerous are dangerous sex offenders? An estimation of recidivism and level of risk using a matched control group*. Saskatoon, Saskatchewan, Canada: Regional Psychiatric Centre.
- *Worling, J. R. (2001). Personality-based typology of adolescent male sexual offenders: Differences in recidivism rates, victim-selection characteristics, and personal victimization histories. *Sexual Abuse: A Journal of Research and Treatment, 13*, 149–166.

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