SEXUAL DEVIANCE AND PSYCHOPATHY AS RISK FACTORS
FOR SEXUAL VIOLENCE

by

Karla J. Jackson
B.A., Simon Fraser University, 1997

Thesis Submitted in Partial Fulfilment
of the Requirements for the Degree of

Master of Arts

in the Department
of
Psychology

© Karla J. Jackson 2007
SIMON FRASER UNIVERSITY
2007

All rights reserved.
This work may not be reproduced in whole or part, by photocopy or other means, without permission of the author.
APPROVAL

Name: Karla Jackson

Degree: Master of Arts (Psychology)

Title of Thesis: Sexual Deviance and Psychopathy as Risk Factors For Sexual Violence

Chair: Dr. Kevin Douglas
Assistant Professor

Dr. Don Read
Senior Supervisor
Professor

Dr. Stephen Hart
Supervisor
Professor

External Examiner: Dr. Patrick Lussier
Assistant Professor
School of Criminology
Simon Fraser University

Date Defended: September 27, 2007
Declaration of
Partial Copyright Licence

The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the right to lend this thesis, project or extended essay to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users.

The author has further granted permission to Simon Fraser University to keep or make a digital copy for use in its circulating collection (currently available to the public at the "Institutional Repository" link of the SFU Library website <www.lib.sfu.ca> at: <http://ir.lib.sfu.ca/handle/1892/112>) and, without changing the content, to translate the thesis/project or extended essays, if technically possible, to any medium or format for the purpose of preservation of the digital work.

The author has further agreed that permission for multiple copying of this work for scholarly purposes may be granted by either the author or the Dean of Graduate Studies.

It is understood that copying or publication of this work for financial gain shall not be allowed without the author’s written permission.

Permission for public performance, or limited permission for private scholarly use, of any multimedia materials forming part of this work, may have been granted by the author. This information may be found on the separately catalogued multimedia material and in the signed Partial Copyright Licence.

While licensing SFU to permit the above uses, the author retains copyright in the thesis, project or extended essays, including the right to change the work for subsequent purposes, including editing and publishing the work in whole or in part, and licensing other parties, as the author may desire.

The original Partial Copyright Licence attesting to these terms, and signed by this author, may be found in the original bound copy of this work, retained in the Simon Fraser University Archive.

Simon Fraser University Library
Burnaby, BC, Canada

Revised: Summer 2007
STATEMENT OF ETHICS APPROVAL

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

(a) Human research ethics approval from the Simon Fraser University Office of Research Ethics,

or

(b) Advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University;

or has conducted the research

(c) as a co-investigator, in a research project approved in advance,

or

(d) as a member of a course approved in advance for minimal risk human research, by the Office of Research Ethics.

A copy of the approval letter has been filed at the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Bennett Library
Simon Fraser University
Burnaby, BC, Canada
ABSTRACT

This study examined the co-occurrence of psychopathy and sexual deviance in sexual offenders (N = 76). The relationship between psychopathy and sexual deviance was assessed in terms of their independence and whether they interacted to increase sexual recidivism significantly. The predictive values of psychopathy and sexual deviance as individual risk factors were also explored. Psychopathy and sexual deviance as general constructs were independent, although a number of specific aspects of psychopathy were positively correlated with specific aspects of sexual deviance. No interaction effect was found between psychopathy and sexual deviance in predicting sexual recidivism, a finding that suggested these two risk factors act independently and share an additive relationship. Both psychopathy and sexual deviance as individual risk factors predicted sexual recidivism but these findings failed to be replicated across all of the analyses within this study.

Keywords: psychopathy; sexual deviance; sexual recidivism
This thesis is dedicated to my parents,
Annelur and Alfred Heinrichs
for a lifetime of unconditional love and support.
You have given me the confidence to pursue my goals.
ACKNOWLEDGEMENTS

I would like to thank Dr. J. Don Read for his guidance, support and patience throughout this project, despite the various challenges that arose. I would also like to thank Dr. Stephen Hart for his insightful contributions to this project.

Thank you to Kelly Watt, Amanda Scorrar, Jay Healey, Brianne Layden, Jessie Li and Darren Ostonal for their help with data collection.

Thank you to my partner David Eklof, for the tremendous support and love he’s given me throughout this project and my academic pursuits overall.

The Social Sciences and Humanities Research Council and the Forensic Psychiatric Services Commission both provided funding for this research. In addition, the Forensic Psychiatric Services Commission provided administrative support. Finally, the Vancouver Police Department was instrumental in the completion of this research through their provision of recidivism data.
# TABLE OF CONTENTS

Approval ........................................................................................................ ii
Abstract .......................................................................................................... iii
Dedication ....................................................................................................... iv
Acknowledgements ........................................................................................ v
Table of Contents .......................................................................................... vi
List of Tables .................................................................................................. vii
List of Figures ................................................................................................ viii

**Introduction** ............................................................................................... 1
Sexual Deviance - Conceptualization and Assessment ..................................... 2
Psychopathy - Conceptualization and Assessment ........................................... 5
The Co-occurrence of Sexual Deviance and Psychopathy .............................. 7

**Current Study** ........................................................................................... 12
Goals and Hypotheses ...................................................................................... 12
Method ............................................................................................................ 13
  Subjects ......................................................................................................... 13
  Sample Characteristics ................................................................................ 13
  Materials ....................................................................................................... 15
  Procedure .................................................................................................... 24
Results ............................................................................................................. 25
  Question 1: Are Psychopathy and Sexual Deviance Independent Risk Factors? 25
  Question 2: How Do Psychopathy and Sexual Deviance Interact to Increase Risk for Sexual Recidivism? 29
Discussion ....................................................................................................... 43
Question 1: Are Psychopathy and Sexual Deviance Independent Risk Factors? 43
Question 2: How Do Psychopathy and Sexual Deviance Interact to Increase Risk for Sexual Recidivism? 46
LIST OF TABLES

Table 1. Psychopathy Checklist-Revised – Screening Version Items (PCL-SV; Hart, Cox, & Hare, 1995) ................................................................. 16
Table 2. Scoring the “Sexual Deviation” Item of the SVR-20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997) – Definition of Sexual Deviation, Sexual Deviance Indicators, and Coding Guidelines ........................................ 19
Table 3. Recidivism rates for each type of offence and police contact .................. 24
Table 4. Breakdown of sample in terms of levels of psychopathy by sexual deviance ..................................................................................................... 26
Table 5. Sexual recidivism base rates for sample in terms of levels of psychopathy by sexual deviance .......................................................... 30
Table 6. Sexual recidivism rates for groups based on no psychopathy vs. elevated psychopathy and no deviance vs. elevated deviance .......... 36
Table 7. Main and interaction effects for psychopathy (PCL-SV total score) and sexual deviance (SVR-20 Sexual Deviation item) as predictors of sexual recidivism across the three Cox regression analyses .......... 37
Table 8. Recidivism Rates for sexual recidivism for four offender groups based on low psychopathy vs. high psychopathy and low deviance vs. high sexual deviance .............................................................................................. 42

LIST OF FIGURES

Figure 1. Illustration of how recidivism was defined .............................................. 21
Figure 2. Box-and-whisker plots illustrating the relationship between psychopathy and sexual deviance .......................................................... 27
Figure 3. Cox regression survival curves for sexual recidivism for no psychopathy (PCL-SV ≤ 12) and elevated psychopathy (PCL-SV ≥ 13) offenders. Figure 4. Cox regression survival curves for sexual recidivism for no deviance (score = 0) and elevated deviance (score = 1 or 2) groups ........................................................................................................ 34
Figure 4. Cox regression survival curves for sexual recidivism for no deviance (score = 0) and elevated deviance (score = 1 or 2) groups .......... 35
Figure 5. Cox regression survival curves for sexual recidivism for four offender groups based on no psychopathy vs. elevated psychopathy and no deviance vs. elevated deviance ........................................................................ 36
Figure 6. Cox regression survival curves for sexual recidivism for low psychopathy (PCL-SV score < 17) and high psychopathy (PCL-SV score >18) offenders. ................................................................. 40

Figure 7. Cox regression survival curves for sexual recidivism for low deviance (score = 0 or 1) or high deviance (score = 2) offenders. ...................................................... 41

Figure 8. Cox regression survival curves for sexual recidivism for four offender groups based on low psychopathy vs. high psychopathy and low deviance vs. high sexual deviance. ................................................................. 42
INTRODUCTION

Research has established sexual deviance and psychopathy as important risk factors that contribute to the perpetration of sexual violence (e.g., Hanson and Bussière, 1996, 1998; Hanson & Morton-Bourgon, 2004; Hildebrand, de Ruiter, & de Vogel, 2004; Olver & Wong, 2006). However, sexual offenders are a heterogeneous group and one cannot assume the presence of psychopathy and/or sexual deviance: sex offenders may be neither psychopathic nor sexually deviant, or possess one or both of the two risk factors. Acknowledging that psychopathy and sexual deviance are not universal risk factors for sexual violence, when psychopathy and/or sexual deviance are nonetheless present, these individuals appear to be at higher risk for sexual recidivism (Hanson and Bussière, 1996, 1998; Hanson & Morton-Bourgon, 2004). Therefore, it is imperative these two risk factors be accurately identified and assessed in sexual offenders prior to their release into the community. In addition, professionals conducting risk assessments should have a good understanding of the empirical evidence regarding the extent to which risk for sexual violence increases generally when a sexual offender is sexually deviant and/or psychopathic. Indeed, the proper identification, assessment and evaluation of risk regarding sexual deviance and psychopathy will better inform the correctional process with respect to whether and under what circumstances a sexual offender is likely to commit future sexual violence.

Sexual violence encompasses a wide array of behaviour and therefore its definition tends to vary across research. A practical definition of sexual violence is “actual, attempted, or threatened sexual contact with another person that is nonconsensual” (Risk for Sexual Violence Protocol; Hart, Kropp, & Laws, Klaver, Logan,
& Watt, 2003, p. 2). According to this definition, sexual violence generally constitutes a violation of criminal law, although it may or may not result in a criminal arrest, charge, or conviction. For example, a research study could examine the prevalence of date rape based on a self-report measure. In this case, date rape is a form of sexual violence that may not have resulted in a criminal charge or conviction. Within the research literature, the term sexual violence often refers to a sexual offence or sexual recidivism (e.g., Macpherson, 2003; Rice & Harris, 1997; Seto & Barbaree, 1999), reflecting an emphasis on sexual violence that leads to a criminal charge or conviction. As with all forms of violence, it can be assumed that sexual violence is goal-directed. That is, individuals engage in sexual violence to achieve a particular outcome. An individual's underlying motivation for engaging in sexual violence is influenced by such factors as sexual deviance and psychopathy.

**Sexual Deviance – Conceptualization and Assessment**

The concept of sexual deviance is broad and incorporates a number of attitudinal and behavioural risk factors. Examples of such factors include clinically assessed deviant sexual preference; general paraphilias; early onset of sexual offending; and a history of sexual violence that includes diverse sexual crimes, use of overt force, and victims who were either strangers, male, and/or significantly younger or older than the offender (Barbaree & Marshall, 1989; Freund & Watson, 1991; Hanson, 2000; Hanson & Morton-Bourgon, 2004; Quinsey, 1984, 1986). From a theoretical perspective, Knight and Guay (2006) have developed a three-pathway model for sexual violence, where sexual deviance is viewed as one of the causal risk factors that predispose individuals to engage in sexual violence. It has also been hypothesized that sexual deviance results in
sexual violence becoming appetitive for the individual by heightening the satisfaction or physiological reward associated with sexual violence (RSVP; Hart et al., 2003). Given that behavioural manifestations of sexual deviance often involve sexual violence (e.g., exhibitionism) it appears reasonable that sexual deviance may encourage individuals to experiment with sexual violence and then continue with this behaviour should they find it satisfying or physically pleasurable. The empirical evidence to date supports a predictive relationship between sexual deviance and sexual violence. For example, Hanson and Bussière (1996, 1998) completed a meta-analysis based on 61 different sex-offender databases. The findings of this meta-analysis indicated that the strongest predictor of sexual recidivism was sexual deviancy. Recently, Hanson and Morton-Bourgon (2004) updated the Hanson and Bussière (1996, 1998) meta-analysis with the same outcome; sexual deviancy was the strongest predictor of sexual recidivism (Hanson & Morton-Bourgon, 2004).

Research looking at the relationship between sexual deviance and sexual recidivism has utilized self-report measures, sexual offence history, clinical assessment, and phallometric testing (measuring penile response; see Kalmus & Beech, 2005) to determine the presence of sexual deviance. Phallometric assessment is considered by some to be the preferred method based on the argument that measuring physiological arousal to stimuli produces the “truest” assessment of whether sexual deviance is present. However, overall results are mixed for the predictive utility of phallometric assessment across the various types of sex offending populations. For example, while phallometric testing appears to be strongly related to sexual recidivism in child molesters, this is not the case with rapists, where phallometric testing does not appear to have predictive value (Hanson & Morton-Bourgon, 2004).
In addition to the inconsistent predictive value of phallicometric assessment, there are also logistical and methodological difficulties with the technique, such as the need for specialized facilities, electronic equipment, and extensive training. Further, treatment programs and research studies employ varying forms of stimuli in the phallicometric testing. For example, some research has used a visual presentation of stimuli only while other research has used an audio presentation of stimuli only. Such differences in the stimuli format create difficulties with respect to comparing findings across studies. These methodological and logistical challenges have led to some research studies using clinical measures based on interviews and/or file information to determine the presence of sexual deviance (Hildebrand, de Ruiter, & de Vogel, 2004; Kahn & Chambers, 1991; Prentky, Knight, & Lee, 1997; Långström & Grann, 2000). One example is the “Sexual Deviation” item of the Sexual Violence Risk-20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997). The SVR-20 is a structured professional clinical guideline developed for the purpose of assessing risk for sexual violence in adult sex offenders. The SVR-20 is based on coding the presence of 20 specific risk factors, of which sexual deviance is one. The concept of sexual deviance, as described in the SVR-20 manual, involves a pattern reflecting sexual preference for, or sexual arousal to, inappropriate stimuli such as age-inappropriate targets, animals, or objects. When deviant sexual arousal is acted upon, the resulting behaviour is generally harmful or distressing to the victim and/or the perpetrator. The Sexual Deviation item is scored based on different types of file information, such as psychological reports, risk assessments, diagnosed paraphilia, past behaviour, phallicometric assessments, and self-reports. The clinical assessment of sexual deviance via the SVR-20 differs significantly from the traditionally used phallicometric testing because it does not require special equipment and testing facilities.
In recent studies, the Sexual Deviation item of the SVR-20 was found to predict sexual recidivism (Dempster & Hart, 2002; Hildebrand et al., 2004), which suggests this single item may provide a practical and encouraging alternative to phallometric assessment.

**Psychopathy – Conceptualization and Assessment**

Psychopathy is a personality disorder that is characterized by an arrogant, grandiose, superficial and deceitful interpersonal style, deficient affective experience, and an impulsive and irresponsible behavioural style (Cooke & Michie, 2001; Hare, 1991, 2003; Hart, Cox, & Hare, 1995). For research purposes, the criminological characteristics associated with psychopathy are often clustered under the interchangeable rubrics of antisocial personality disorder or psychopathy. Conceptually a great deal of overlap exists between antisocial personality disorder and psychopathy, although it is important to note that the two disorders are in fact different and are subject to different diagnostic processes (Hart & Hare, 1997). However, within the research literature the establishment of "antisocial personality" is generally determined by measures of psychopathy, thus incorrectly treating the two concepts as synonymous.

Psychopathy is most commonly diagnosed with the Hare Psychopathy Check List-Revised (PCL-R; Hare, 1991), a 20-item assessment scale that was developed to measure the characteristics associated with psychopathy. Traditionally, psychopathy has been comprised of two distinct yet correlated factors (PCL-R; Hare, 1991). The first factor (Factor 1) consists of interpersonal and affective characteristics, such as lack of remorse/guilt, grandiosity, shallow affect, and glibness/superficial charm. The second factor (Factor 2) identifies characteristics such as impulsivity, irresponsibility, parasitic
tendencies and other characteristics that tend to be associated with a chronically
unstable, antisocial, and socially deviant lifestyle.

A considerable body of empirical evidence supports psychopathy as a significant
predictor of general (any type of recidivism) and violent recidivism for sexual and non-
sexual offenders (e.g. Grann, Långström, Tengström, & Kullgren, 1999; Hanson &
Morton-Bourgon, 2004; Hare, Clark, Grann, & Thornton, 2000; Salekin, Rogers, &
Sewell, 1996). Research suggests psychopathy may also be a risk factor for sexual
recidivism (Hildebrand et al., 2004; Looman, Abracen, Serin, & Marquis, 2005; Seto &
Lalumière, 2000), although to a lesser extent than for general and violent non-sexual
recidivism. For example, in the Hanson and Morton-Bourgon (2004) meta-analysis,
psychopathy was most strongly predictive of general recidivism (Cohen’s $d = .71$), less
predictive of violent non-sexual recidivism (Cohen’s $d = .56$), and least predictive for
sexual (violent and non-violent) recidivism (Cohen’s $d = .29$).

That sexual deviance would contribute to sexual violence is more intuitive than
the relationship between psychopathy and sexual violence. Characteristically, sexual
deviance and psychopathy are very different risk factors, yet there is research that
suggests they both predict sexual violence (Hildebrand et al., 2004; Olver & Wong,
2006), although sexual deviance is generally considered to be a stronger predictor
based on meta-analyses (e.g., Hanson & Morton-Bourgon, 2004). To date, the empirical
evidence in support of psychopathy (PCL-R) as a risk factor for sexual recidivism has
been inconsistent. While some research supports psychopathy as a predictor for sexual
recidivism (e.g., Harris et al., 2003; Olver & Wong, 2006), other research does not (e.g.,
Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001; Serin, Mailloux, & Malcolm,
2001). To illustrate, Hildebrand et al. (2004) reported that psychopathy (PCL-R total
score) and Factor 2 predicted sexual, non-sexual violent, and general recidivism. In contrast, Barbaree, Seto, Langton, & Peacock (2001) found that psychopathy (PCL-R total) and Factor 2 predicted general and serious (included both non-sexual violent and sexual) recidivism, but did not predict sexual recidivism alone. Further examination of the relationship between psychopathy and sexual violence is warranted to address these inconsistencies.

The Co-occurrence of Sexual Deviance and Psychopathy

Researchers have begun to examine the co-occurrence of sexual deviance and psychopathy in adult sex offenders (Harris et al., 2003; Hildebrand et al., 2004; Olver & Wong, 2006; Rice & Harris, 1997; Serin et al., 2001) and adolescent sex offenders (Gretton et al., 2001). To date, only a small number of studies have explored whether psychopathy and sexual deviance are independent risk factors among sexual offending populations. One of the first studies (Serin, Malcolm, Khanna, & Barbaree, 1994) found a significant positive correlation between psychopathy and sexual deviance, which suggested that psychopathy and sexual deviance are likely to co-occur in sexual offenders. However, these findings were not replicated in subsequent studies (Harris, 2003; Lalumière & Quinsey, 1996). In fact, one recent study (Langton, Barbaree, Hansen, Harkins, & Peacock, 2007) found a significant negative correlation between psychopathy and sexual deviance. Therefore, the limited findings thus far seem to indicate that psychopathy and sexual deviance tend to be independent risk factors, however, the relationship is still unclear and further research is warranted.

Research generally suggests that the presence of both psychopathy and sexual deviance increases the risk for sexual recidivism more so than when only one of these
risk factors is present. It is difficult to draw confident conclusions from the previous research, in part because different analyses were used to assess the relationship between the co-occurrence of sexual deviance and psychopathy. Specifically, in some studies (Hildebrand et al., 2004; Olver & Wong, 2006; Serin et al., 2001) group comparisons were done between four groups of sexual offenders (non-psychopathic/non-deviant, sexually deviant only, psychopathic only, and psychopathic/deviant). The outcomes of these group comparisons were mixed. One study (Hildebrand et al., 2004) found that the psychopathic/deviant group had a significantly higher sexual recidivism rate than the other three groups (log rank = 12.06, \( p < .05 \)). The Olver and Wong (2006) study also found that the psychopathic/deviant group had a significantly higher sexual recidivism rate, but only when compared to the non-psychopathic/non-deviant, and not to the other two groups. Furthermore, Serin et al. (2001) did not find any significant group differences with respect to sexual recidivism. Given that only one study reported a statistically significant group difference between the psychopathic/deviant group and the other three groups, there is not yet sufficient evidence to presume that psychopathic/deviant offenders have a significantly higher sexual recidivism rate.

While group comparisons can be informative, they treat sexual recidivism as a dichotomous variable and therefore provide a limited picture of sexual recidivism. For a more in-depth, within group evaluation, survival analysis is often used to compare how quickly the different groups sexually recidivate following release from incarceration, in addition to comparing the frequency of sexual recidivism over the entire follow-up period. Survival analyses across four studies (Harris et al., 2003; Hildebrand et al., 2004; Olver & Wong, 2006; Rice & Harris, 1997) consistently indicated that psychopathic/deviant
individuals sexually recidivated more quickly following their release from custody than the other three groups. These findings lend support to the notion that the co-occurrence of psychopathy and sexual deviance places these individuals at higher risk for future sexual violence than does either of these risk factors in isolation.

It is important to note that neither survival curves nor group comparisons directly test the nature of the relationship between psychopathy and sexual deviance; specific analyses, such as Cox regression, must be completed to test the interaction effect. For example, in addition to survival analysis, Rice and Harris (1997) reported a statistically significant interaction between psychopathy and sexual deviance in predicting sexual recidivism. Based on their findings, these authors concluded that a “multiplicative” relationship exists between psychopathy and sexual deviance. Since the Rice and Harris study, two additional studies (Harris et al., 2003; Olver & Wong, 2006) have also reported a statistically significant interaction between psychopathy and sexual deviance with respect to sexual recidivism. Interestingly, Olver and Wong (2006) stated that psychopathy and sexual deviance shared an additive relationship, despite finding a statistically significant interaction effect, because the presence of either psychopathy or sexual deviance were associated with moderate sexual recidivism rates. Some research has failed to report a statistically significant interaction effect between psychopathy and sexual deviance in predicting sexual recidivism (Gretton et al, 2001; Hildebrand et al., 2004; Serin et al, 2001). The mixed findings make it difficult to ascertain whether an interaction effect tends to exist between psychopathy and sexual deviance with regards to sexual recidivism. Further, even when there is an interaction effect, Olver and Wong (2006) concluded that the relationship between psychopathy and sexual deviance may be additive due to the main effects of psychopathy and sexual deviance. Therefore, at
this point it appears that the relationship between psychopathy and sexual deviance tends to be additive, but further research is needed to examine this relationship and how the co-occurrence of these two risk factors influences risk for sexual recidivism.

To summarize previous research looking at the co-occurrence of sexual deviance and psychopathy, only a handful of studies have been completed and the findings have generally been inconsistent. Based on our current knowledge then, it would appear premature to definitively characterize the relationship between the co-occurrence of these two risk factors and the probability of sexual recidivism. This is an important point, as some researchers (e.g., Hare, 1999) have concluded that the co-occurrence of sexual deviance and psychopathy creates a "deadly combination", a label that suggests inevitable sexual recidivism. There is not enough research with consistent findings to warrant this type of fatalistic label for psychopathic/deviant offenders. To further illustrate this point, in the previous studies the percentage of sexual offenders within the "deadly combination" group that did not sexually recidivate during the follow-up periods ranged from approximately 18% (Hildebrand et al., 2004) to 60% (Olver & Wong, 2006) across the various studies. Such variability in the research findings suggests that it is still unclear how much weight should be given to the co-occurrence of sexual deviance and psychopathy in estimating risk for future sexual violence.

This study adds to the breadth of knowledge pertaining to the independence of sexual deviance and psychopathy and the level of risk for sexual recidivism associated with the co-occurrence of these two risk factors. Research has yet to clearly establish whether sexual deviance and psychopathy are independent risk factors, and how these two risk factors interact to increase risk for sexual violence. These are timely questions: increasingly, the courts within Canada and around the world are incorporating sexual
violence risk assessments (and therefore sexual deviance and psychopathy) into their decision-making process regarding dangerous offender or civil commitment designations (Gledhill, 2004; Hemphill & Hart, 2003; Levenson & Morin, 2006; Zanatta, 2006).

Therefore, it is essential that we develop a strong empirical foundation to inform sexual violence risk assessments. Such a foundation will help ensure that appropriate and fair decisions will be made regarding a sexual offenders' sentencing, eligibility for release, and community management.
CURRENT STUDY

Goals and Hypotheses

This study primarily examined the co-occurrence of psychopathy and sexual deviance with respect to their independence, whether they interact, and their predictive value for sexual violence recidivism. There were two main questions that this study sought to address. The first question was whether these two risk factors were independent within our sample or if the presence of either psychopathy or sexual deviance increased the likelihood that the other risk factor would also be present. The second main question was how psychopathy and sexual deviance interacted to increase risk for sexual violence recidivism; was the relationship additive or multiplicative? To briefly explain the difference, in an additive model, we would expect the combined effect of these two risk factors to roughly equal the sum of their independent effects. Whereas, in a multiplicative model, we would expect the combined effect of these two risk factors to be much greater than their sum. Included under the second question was whether the Sexual Deviation item of the Sexual Violence Risk-20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997), would predict sexual recidivism. The hypotheses of this study were as follows:

1. Psychopathy and sexual deviance are independent risk factors in sex offenders.
2. The relationship between sexual deviance and psychopathy is additive versus multiplicative in predicting sexual recidivism.
Method

Subjects

Subjects were 76 male sexual offenders who had participated in a Forensic Psychiatric Services Commission (FPSC) outpatient sex offender treatment program in 2002 or 2003, in British Columbia, Canada. The majority of the subjects had completed the outpatient sex offender treatment program as part of their provincial sentence (up to two years less a day) for a sexual violence conviction. However, a small number of subjects were mandated to outpatient treatment following completion of a federal sentence (≥ 2 years) for a sexual offence conviction. Fifteen (16.5%) of the original 91 subjects were excluded due to insufficient file information (e.g., no verification of whether the subject had a criminal history), leaving a sample of 76 subjects. This study involved an archival file review and therefore informed consent was not obtained from the subjects. In lieu of informed consent, a rigorous ethics approval process, including Simon Fraser University, the Forensic Psychiatric Services Commission of British Columbia, and the Vancouver Police Department, was completed.

Sample Characteristics

At the completion of the FPSC outpatient sex offender treatment program, the subjects ranged in age from 19 to 77 (M = 40.7 years, SD = 12.6 years). In terms of ethnicity, 63.2% of the subjects were Caucasian, 17.1% were Aboriginal, and 19.7% were of other various ethnicities. At the time of the index offence (the sexual offence that led to subjects’ participation in the FPSC outpatient sex offender treatment program), 46.1% of the subjects were married/common-law and 53.9% were separated, divorced,
widowed, or single. The index offence was the first conviction for 38.2% of the
subjects, whereas 61.8% of the subjects had been convicted of some kind of offence in
the past. For 68.4% of the subjects this was their first sexual offence conviction, whereas
31.6% of the subjects had a history of sexually violent offences. There were more
subjects (46.1%) who had a previous conviction for a general offence (i.e., non-violent
offences such as property offences) than subjects (27.6%) who had a previous
conviction for a nonsexual violent offence. The sample was a mixed group of sexual
offenders, who were categorized based on victim type over the course of their entire
sexual offending history. The sample included 18.4% incest offenders (intra-familial
victims only), 34.2% pedophiles (both intra- and extra-familial victims under age 16),
21.1% adult only victim offenders (both known and unknown victims, over age 16), and
26.3% offenders who had both child and adult victims. The mean length of the FPSC sex
offender treatment program was approximately three months ($SD = 1.48$ months, range
$= .97$ to $7.27$ months). Approximately 43% of the sample had participated in some kind
of sex offender treatment program prior to the FPSC outpatient sex offender treatment
program. Some of the first-time sexual offenders participated in a sex offender treatment
program (for example, while incarcerated) before being referred to the FPSC outpatient
program. This fact explains why the percentage of offenders who had participated in a
prior sex offender treatment program (43%) was higher than the proportion (32%) of
offenders who had a previous sexual offence conviction.
Materials

The Psychopathy Checklist-Screening Version (PCL-SV)

In light of the somewhat limited subject file information, the PCL-SV (Hart, Cox, & Hare, 1995) was a more appropriate measure of psychopathy than the PCL-R (Hare, 1991) for the purpose of this research. The PCL-SV is a reliable and valid measure of psychopathy. In its development, the PCL-SV was normed on various offender samples, including offenders attending the Forensic Psychiatric Outpatient Clinic in Vancouver. When analysed for concurrent validity with the PCL-R, a mean correlation of .80 has been found between the total scores on the two scales (Hart, Cox, & Hare, 1995).

Additional research has also concluded that the PCL-SV is a parallel measure of psychopathy when compared to the PCL-R (Cooke, Michie, Hart, Hare, 1999). Further, the PCL-SV has been found to be predictive of recidivism (e.g., Belfrage, Fransson, & Strand, 2000; Douglas, Yeomans, & Boer, 2005). The PCL-SV consists of 12 items, as opposed to the 20-item PCL-R. The 12 items encompass attributes associated with a psychopathic personality and are based on Cleckley's (1941) original conceptualization of psychopathy (see Table 1 for a list of the 12 items). The 12 items of the PCL-SV are each given a rating of 0 = absent, 1 = some indication, or 2 = present. Each score on the 12 items is summed to produce the total score, which can range from 0 to 24. The current study used the cut-off scores recommended by the PCL-SV manual: scores from 0-12 represented no psychopathy, scores from 13-17 represented possible psychopathy, and scores of 18 or above represented psychopathy (Hart, Cox, & Hare, 1995).
Table 1.

Psychopathy Checklist-Revised – Screening Version Items (PCL-SV; Hart, Cox, & Hare, 1995)

<table>
<thead>
<tr>
<th>PCL-SV Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Superficial</td>
</tr>
<tr>
<td>2. Grandiose</td>
</tr>
<tr>
<td>3. Deceitful</td>
</tr>
<tr>
<td>4. Lacks Remorse</td>
</tr>
<tr>
<td>5. Lacks Empathy</td>
</tr>
<tr>
<td>6. Doesn't Accept Responsibility</td>
</tr>
<tr>
<td>7. Impulsive</td>
</tr>
<tr>
<td>8. Poor Behavioral Controls</td>
</tr>
<tr>
<td>9. Lacks Goals</td>
</tr>
<tr>
<td>10. Irresponsible</td>
</tr>
<tr>
<td>11. Adolescent Antisocial Behavior</td>
</tr>
<tr>
<td>12. Adult Antisocial Behavior</td>
</tr>
</tbody>
</table>

The scoring of the PCL-SV was based on the subjects' FPSC correctional files, which included such information as psychosocial history, previous treatment notes, pre-sentence reports, risk assessment reports, and police reports. Two coders provided independent PCL-SV ratings for all 76 subjects. Both of the coders were trained by one of the authors of the PCL-SV and also had previous PCL-SV rating experience. In addition to independent PCL-SV ratings, the two coders also completed PCL-SV consensus ratings for each subject. The process of consensus ratings is described in detail in the Procedure section. The interrater reliability for the two coders on the PCL-
SV total scores was excellent ($ICC_1 = .92$), as was the estimated reliability of the consensus ratings ($ICC_2 = .96$, mathematically equivalent to weighted Kappa).

The mean total score on the PCL-SV was 10.36 ($SD = 5.53$, range 2-24), with a median score of 10 and a mode of 14. Using the cut-off scores provided by the PCL-SV manual described earlier, 51 offenders (67%) were in the no psychopathy group, 15 (20%) were in the possible or moderate psychopathy group, and 10 (13%) were in the high psychopathy group. For this study, a number of between-group analyses were run with psychopathy as a dichotomous variable. The dichotomised groups were created in two ways. The PCL-SV total scores were first split into two groups by collapsing the moderate and high psychopathy groups, which created a no psychopathy (total score = 0 to 12) group and an elevated psychopathy (total score $\geq 13$) group. The no psychopathy group had 51 offenders (67%) and the elevated psychopathy group had 25 (33%) offenders. The PCL-SV total scores were also dichotomised using a more stringent criterion to create a low psychopathy group (total score = 0 to 17) and a high psychopathy group (total score $\geq 18$). Based on this criterion, the low psychopathy group had 65 (87%) offenders and the high psychopathy group had 10 (13%) offenders.

Previous studies looking at psychopathy and sexual deviance have tended to dichotomise psychopathy using a PLC-R total score cut-off of 25 or 26, for the purpose of assessing psychopathy as a predictor of sexual recidivism (e.g., Harris et al., 2003; Hildebrand et al., 2004; Olver & Wong, 2006; Rice & Harris, 1997). A PCL-R total score of 25 is approximately equivalent to a PCL-SV total score of 14. Therefore, by first dichotomising psychopathy using a PCL-SV total score of 13; my psychopathy groups were reasonably consistent with those in previous research. The PCL-SV total score of 13 (as opposed to 14) was used in my study because the PCL-SV manual utilizes the
score of 13 to differentiate between no psychopathy and possible psychopathy. The previous research only reported regression analyses for psychopathy dichotomised using a moderate PCL-R cut-off (i.e., PCL-R total score = 25/26). In contrast, my study included regression analyses for psychopathy dichotomised using the two different cut-offs recommended in the PCL-SV manual (PCL-SV total score \( \geq 13 \) and \( \geq 18 \)).

**Sexual Deviation Item of the Sexual Violence Risk-20**

The presence of sexual deviance was determined by applying the scoring criteria of the Sexual Deviation item of the Sexual Violence Risk-20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997). As noted earlier, the SVR-20 is a structured clinical guideline developed to aid in sexual violence risk assessment. According to the SVR-20 manual, sexual deviance is reflected in a consistent pattern (as opposed to an isolated incident) of the individual experiencing sexual arousal to inappropriate targets such as children, non-consenting adults, or animals. It is irrelevant whether the sexually deviant person enjoys or accepts the inappropriate sexual arousal. The Sexual Deviation item of the SVR-20 was scored as 0 = no evidence, 1 = possible or partial evidence, or 2 = clear evidence, as it has been for previous research (e.g., Hildebrand et al., 2004). The SVR-20 manual provides a clear definition of sexual deviance, as well as provides guidelines for when to code for “no evidence”, “possible or partial evidence”, and “clear evidence”. For this study, the scoring of the Sexual Deviation item adhered to the guidelines outlined in the SVR-20 manual. There were nine different indicators of sexual deviance that were considered in the coding of the Sexual Deviation item. These nine sexual deviance indicators, along with the definition and guidelines from the SVR-20 manual are listed in Table 2.
**Table 2.**

**Scoring the “Sexual Deviation” Item of the SVR-20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997) – Definition of Sexual Deviation, Sexual Deviance Indicators, and Coding Guidelines**

<table>
<thead>
<tr>
<th>Sexual Deviation Item of the SVR-20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition of Sexual Deviance</strong></td>
</tr>
<tr>
<td>“Sexual deviance” is a relatively stable pattern of deviant sexual arousal (i.e., arousal to inappropriate stimuli), whether or not this is in the context of sexual offences. Note that the arousal does not have to be accepted or enjoyed by the individual (i.e., ego syntonic); it is sufficient that he or she experiences arousal. Evidence of sexual deviance typically comes from several sources: clinical or polygraphic interviews; self-report questionnaires; past behaviour; information from collateral sources (e.g., case records, family members); and plethysmographic assessment... sexual deviance can be inferred from behaviour. Such inferences are more likely to be accurate when based on a pattern of behaviour, rather than a single act. (p. 43)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual Deviance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexually deviant fantasies</td>
</tr>
<tr>
<td>Sexually deviant urges</td>
</tr>
<tr>
<td>Repeated acts of a sexually deviant nature</td>
</tr>
<tr>
<td>Reported physiological arousal to inappropriate persons</td>
</tr>
<tr>
<td>Reported physiological arousal to inappropriate objects</td>
</tr>
<tr>
<td>Sexual fixation on inappropriate persons</td>
</tr>
<tr>
<td>Sexual fixation on inappropriate objects</td>
</tr>
<tr>
<td>Sexually deviance accepted/enjoyed by the person</td>
</tr>
<tr>
<td>Diagnosis of paraphilia made by qualified professional and according to standardized criteria (DSM-IV, or ICD-10)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coding Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 or No</td>
</tr>
<tr>
<td>Sexual deviance is definitely absent or does not apply. There is no evidence from the assessment that the individual has, at any time in his or her life, suffered from sexual deviance.</td>
</tr>
</tbody>
</table>

| 1 or ?            |
| Possible/partial evidence that the individual has, at any time in his or her life, suffered from sexual deviance. |

| 2 or Yes          |
| Sexual deviance is definitely present. There is evidence that the individual has, at any time in his or her life, suffered from sexual deviance. |
The scoring of the Sexual Deviation item was based on subjects' correctional files. The scoring was completed by two experienced coders who were trained by one of the authors of the SVR-20. As with the PCL-SV, the two coders independently scored and also completed consensus ratings on all 76 participants' files for sexual deviance. The interrater reliability between these two coders for the Sexual Deviation item was very good ($ICC_1 = .89$). The estimated reliability of the consensus ratings was excellent ($ICC_2 = .94$, mathematically equivalent to weighted Kappa).

Based on the SVR-20 Sexual Deviation item, the distribution of sexual deviance within my sample included 31 (41%) offenders who were rated as "0" (no evidence), 22 (29%) offenders who were rated as "1" (possible or partial evidence), and 23 (30%) offenders who were rated as "2" (clear evidence). For between group analyses, it was unclear how to best dichotomise sexual deviance with respect to where to place those offenders who exhibited "possible or partial" sexual deviance. As a result, analyses were run with sexual deviance dichotomised two different ways. Sexual deviance was first dichotomised using the criterion of no deviance (score = 0) and elevated deviance (score = 1 or 2). This criterion created groups with 31 (41%) offenders classified with no deviance and 55 (59%) offenders with elevated deviance. Previous research (Hildebrand et al., 2004) has dichotomised the Sexual Deviation item of the SVR-20 based on the same criterion and found that sexual deviance significantly predicted sexual violence recidivism. However, an argument can be made that the designation of sexual deviance should require clear and substantial evidence. For this reason, sexual deviance was also dichotomised as low deviance (score = 0 or 1) and high deviance (score = 2). Based on this cut off, the groups included 53 (70%) low deviance offenders and 23 (30%) high deviance offenders.
Recidivism Data

Recidivism was operationalized as any police contact following the offender's participation in the FPSC sex offender treatment program in 2002 or 2003, to the end of the follow-up period, which was June 1, 2007. Recidivism was coded both as a dichotomous variable (yes/no) and as a continuous variable (number of days from the beginning of the follow-up period to the first occurrence of recidivism). Any police contact (recidivism) included a police investigation, a new charge, or a new conviction. Therefore, offenders were deemed to have recidivated on the basis of a police investigation alone, even if the investigation did not lead to a new charge or conviction. Further, given that each new charge or conviction was always preceded by a police investigation, the recidivism rates associated with charges and convictions are subsumed under the police investigation recidivism rates (as illustrated in Figure 1). Therefore, the total number of police investigations (dichotomous yes/no) is equivalent to the total recidivism rate (dichotomous yes/no) for each type of offence.

Figure 1.
Illustration of how recidivism was defined.

Previous research has commonly based recidivism on reconviction rates (Doren, 2002; Hanson & Bussière, 1998), although more recent research has included new
Sexual Deviance and Psychopathy 22

charges in the definition of recidivism also (e.g., Olver & Wong, 2006). For my study, the rationale to include police investigations under recidivism incorporated a number of factors. Sexual recidivism research has established that reconviction rates underestimate recidivism (Prentky, Lee, Knight, & Cerce, 1997). In addition to reconviction rates, it is widely accepted that police statistics (e.g., police investigations and charges) underestimate sexual recidivism rates due to issues such as under-reporting and under-recording (Lievore, 2003). Therefore, it was believed that even the number of police investigations within my study would likely be an underestimate of the actual incidence of recidivism, but would be a more comprehensive measure of recidivism than those used in previous studies. The collection of recidivism data for my study included detailed information about the police investigations. This information sometimes corroborated that an offence had occurred even without charges. For example, there were a number of sexual offences where charges would have been laid if the victim had been willing to testify. Therefore, had I only included charges or convictions the recidivism rate would have been artificially low.

The three types of recidivism coded were (1) sexual violence recidivism (any contact or non-contact sexual offence); (2) nonsexual violent recidivism (e.g., assault or armed robbery); (3) any recidivism (all types of offences, including general offences such as property, drug related, motor vehicle crimes, or parole revocations). As with previous research (e.g. Bartosh, Garby, Lewis, & Gray, 2003; Hildebrand et al, 2004), each incident of recidivism was coded throughout the entire follow-up period, as opposed to the first occurrence only. Recidivism data was accessed through the Vancouver Police Department (VPD), and included the Canadian Police Information Centre (CPIC), and both the Provincial Corrections and the municipal Police Record Management System.
In previous recidivism research (Barbaree, 2005), the use of CPIC records was viewed as a methodological improvement over correctional or parole board file information. However, the information in CPIC appears to be approximately one year behind. Therefore, the inclusion of the Provincial Corrections and Police Record Management Systems (which are more current) allowed for more up-to-date and complete recidivism data.

The average follow-up period for our sample was 4.20 years ($SD = .34$, range = 3.27 – 4.67 years). Recognizing that a longer follow-up period would more accurately reflect sexual recidivism rates (Furby, Weinrott, & Blankshaw, 1989), this follow-up period is comparable to other sexual recidivism research (e.g. Barbaree et al., 2001; Dempster & Hart, 2002; Harris et al., 2003) where statistically significant results were reported. In addition, this study provided the basis for future longitudinal recidivism research using the same sample of sex offenders, which would then have a longer follow-up period.

The three different types of recidivism and the rates associated with the three types of police contact (conviction, charge, and police investigation) are included in Table 3. As expected, the recidivism rates for any offence were the highest across all three types of police contact (16%, 26%, and 46%) compared to nonsexual violent (4%, 8%, and 16%) and sexual (5%, 8%, and 18%) offences. The recidivism rates across the three types of police contact for nonsexual violent and sexual offences were surprisingly similar. In previous research, the recidivism rates for nonsexual violent offences were higher than for sexual offences (Hildebrand et al., 2004; Olver & Wong, 2006). For example, in the Olver and Wong (2006) study, the recidivism rates for sexual offence reconviction and nonsexual violent offence reconviction were 27% and 38% respectively.
Given that the purpose of this research was to explore the relationship between psychopathy and sexual deviance as risk factors for sexual violence recidivism, only the total sexual recidivism rate (18%) was used in the statistical analyses.

*Table 3.*

*Recidivism rates for each type of offence and police contact.*

<table>
<thead>
<tr>
<th>Recidivism Criterion</th>
<th>Conviction</th>
<th>Conviction or Charge</th>
<th>Conviction or Charge or Police Investigation = Total Recidivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Offence</td>
<td>12 (16%)</td>
<td>20 (26%)</td>
<td>35 (46%)</td>
</tr>
<tr>
<td>Nonsexual Violent Offence</td>
<td>3 (4%)</td>
<td>6 (8%)</td>
<td>12 (16%)</td>
</tr>
<tr>
<td>Sexual Offence</td>
<td>4 (5%)</td>
<td>6 (8%)</td>
<td>14 (18%)</td>
</tr>
</tbody>
</table>

*Procedure*

The overall study design was a retrospective follow-up with psychopathy and sexual deviance coded retrospectively from Forensic Psychiatric Services Commission correctional files. The variables of interest were coded based on file information from up to the participants' completion of the FPSC sex offender treatment program in either 2002 or 2003. Any file information dated after the completion of the FPSC sex offender program was not reviewed. The principal author and a research assistant, both of whom were blind to the recidivism data, coded the files. The recidivism data was collected after the files were coded.
At intervals of approximately every 10 files, the two coders completed consensus ratings, where the coders reached a consensus through discussion, on those items where there had been disagreement. The agreed upon rating was then used for data analyses. Consensus ratings improved the quality of the assessment because the ratings were based on a synthesis of the relevant information and often included information missed by one of the coders. The process of consensus rating allowed for (a) direct evaluation of interrater reliability in the full sample; (b) final ratings of maximum possible reliability and validity; and (c) an estimated reliability for the consensus ratings.

The recidivism data were coded from computerized police records. A Vancouver police constable completed the recidivism coding, blind to the sexual deviance and psychopathy ratings. As noted earlier, the time period for the recidivism data began when the participant completed the FPSC sex offender treatment program and ended June 1, 2007.

Results

**Question 1: Are Psychopathy and Sexual Deviance Independent Risk Factors?**

To examine whether psychopathy and sexual deviance were independent risk factors, I first looked at the correlation between PCL-SV total scores and the Sexual Deviation (SVR-20) categorical scores (0 = no evidence, 1 = possible or partial evidence, or 2 = clear evidence). For all of my data analyses, a level of alpha ≤ 0.05 was considered to reflect significant results. A Pearson correlation was performed and the
correlation between psychopathy and sexual deviance was found to be very small and nonsignificant, \( r = .028, p = .809 \).

In preparation for the subsequent analyses, the sample was trichotomized according to the three levels of psychopathy and sexual deviance (Table 4). The three levels of psychopathy were low, moderate and high, and the three levels of sexual deviance were no deviance, possible/possibly deviance and definite deviance.

**Table 4.**

**Breakdown of sample in terms of levels of psychopathy by sexual deviance.**

<table>
<thead>
<tr>
<th>Sexual Deviance (SVR-20 item score)</th>
<th>Psychopathy</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (PCL SV = 0-12)</td>
<td>Moderate (PCL-SV = 13-17)</td>
<td>High (PCL-SV = 18-24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No deviance (Item score = 0)</td>
<td>20</td>
<td>8</td>
<td>3</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Possible/partial deviance (Item score = 1)</td>
<td>17</td>
<td>4</td>
<td>1</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Definite deviance (Item score = 2)</td>
<td>14</td>
<td>3</td>
<td>6</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>15</td>
<td>10</td>
<td>76</td>
<td></td>
</tr>
</tbody>
</table>

To further assess the independence of psychopathy and sexual deviance, box-and-whisker plots were used. As can be seen in Figure 2, all of the boxes overlap with one another and the psychopathy scores did not appear to increase as sexual deviance increased. In fact, in the "possibly" sexual deviant group, the overall psychopathy total scores appeared to be lower than in the non-deviant group. In addition, the median
psychopathy scores for the three sexual deviance groups appeared to be relatively similar.

*Figure 2.*

*Box-and-whisker plots illustrating the relationship between psychopathy and sexual deviance.*

To test the association between dichotomised psychopathy and sexual deviance scores, odds ratios and Fisher's exact test were used. Fisher's exact test was deemed to be an appropriate and robust test of statistical significance because it accommodates small sample sizes and low expected cell frequencies. This is in contrast to chi-squared tests, which generally require larger sample sizes and expected cell frequencies (Howell, 2002). Initially, psychopathy and sexual deviance were dichotomised using the criteria of
no psychopathy (PCL-SV total score ≤ 12) and elevated psychopathy (PCL-SV total score ≥ 13), and no deviance (SVR-20 item score = 0) and elevated deviance (SVR-20 item score = 1 or 2). The no psychopathy group had a total of 51 subjects (20 no deviance and 31 elevated deviance), whereas the elevated psychopathy group had a total of 25 subjects (11 no deviance and 14 elevated deviance). Psychopathy and sexual deviance were not associated, OR = .82, Fisher’s exact test, p = .81. Next I repeated the analyses using the more stringent criteria of low psychopathy (≤ 17) and high psychopathy (≥ 18) groups, and low deviance (score = 0 or 1) and high deviance (score = 2) groups. The low psychopathy group had a total of 56 subjects (49 low deviance and 17 high deviance), whereas the high psychopathy group had a total of 10 subjects (4 low deviance and 6 high deviance). These results indicated that the odds a person would have sexual deviance was approximately four times higher in the high psychopathy group than in the low psychopathy group, OR = 4.32, but this increased risk did not reach statistical significance, Fisher’s exact test, p = .058.

The results thus far suggested that, in general, there was no clear association between psychopathy and sexual deviance; that is, they appeared to be independent or distinct risk factors for sexual recidivism. However, the association between psychopathy and sexual deviance approached statistical significance when the risk factors were dichotomised using the more stringent criteria. To investigate this further, I performed a more detailed analysis of sexual deviance and psychopathy. I looked at the correlations between PCL-SV scores (total and Factors scores) and the sexual deviance indicators used in the assessment of sexual deviance (see Appendix A for the correlation matrix). The results indicated a statistically significant correlation between some aspects of psychopathy and some aspects of sexual deviance (11 out of 50 correlations were ...
significant). For example, reported physiological arousal to inappropriate persons was significantly correlated with PCL-SV Factor 1 scores, \( r = .254, p = .027 \). The majority of the correlations (39 out of 50) were nonsignificant and the results did not reflect any consistent pattern as there failed to be an instance where any of the PCL-SV scores were significantly correlated across all sexual deviance indicators or vice versa. These findings suggested that a few specific features of psychopathy and sexual deviance, as opposed to each risk factor's general construct, were responsible for the borderline association noted between extreme groups of psychopathy and sexual deviance.

**Question 2: How Do Psychopathy and Sexual Deviance Interact to Increase Risk for Sexual Recidivism?**

Although psychopathy and sexual deviance appeared to be independent risk factors for sexual recidivism within my sample, the question of how they interacted remained. Did psychopathy and sexual deviance interact to increase the risk for sexual violence recidivism; that is, was the relationship additive or multiplicative? To address this question, Cox regression survival analyses were used to examine the psychopathy-sexual deviance interaction, as well as the individual contributions of psychopathy and sexual deviance, in predicting sexual violence recidivism. Cox regression survival analysis has been used in previous recidivism research (e.g., Fazel, Sjöstedt, Långström, Grann, 2006; Hanson, 2005; Harris et al., 2003; Olver & Wong, 2006) because this type of analysis takes into account the varying follow-up times and is less affected by recidivism base rates. Previous research (e.g., Olver & Wong, 2006) has also included chi-square analysis to compare the sexual recidivism base rates of the dichotomised psychopathy and sexual deviance groups. However, chi-square analysis
does not incorporate varying time to failure, and essentially treats all offenders as though they had the same amount of time or opportunity to recidivate. To properly assess recidivism data, the analysis must take into account the offenders' varying time in the community following release, which is why Cox regression analysis is generally preferred for this type of research. Although sexual recidivism base rates were not included in the analyses because they do not incorporate time to failure, the sexual recidivism base rates for the three different groups of psychopathy by sexual deviance are provided in Table 5.

**Table 5.**

*Sexual recidivism base rates for sample in terms of levels of psychopathy by sexual deviance.*

<table>
<thead>
<tr>
<th>Sexual Deviance (SVR-20 item score)</th>
<th>Psychopathy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (PCL SV = 0-12)</td>
</tr>
<tr>
<td>No deviance (Item score = 0)</td>
<td>10%</td>
</tr>
<tr>
<td>Possible/partial deviance (Item score = 1)</td>
<td>6%</td>
</tr>
<tr>
<td>Definite deviance (Item score = 2)</td>
<td>21%</td>
</tr>
</tbody>
</table>

**Cox Regression Survival Analyses**

There were a number of ways in which the variables of psychopathy and sexual deviance could be explored with Cox regression survival analysis, with respect to sexual recidivism. Three Cox regression analyses were done where psychopathy and sexual deviance were either treated as continuous or categorical variables. For all of the
analyses, the recidivism criterion was based on whether they had sexually recidivated (yes/no) and the time (in days) to the first occurrence of sexual recidivism.

**First Cox regression analysis – Psychopathy (PCL-SV total scores) and sexual deviance (SVR-20 item score of 0, 1, or 2).** In the first Cox regression, psychopathy and sexual deviance were treated as continuous variables (PCL-SV total scores and SVR-20 item score of 0, 1, or 2). The main effects of psychopathy and sexual deviance were first entered into Cox regression, followed by the interaction term (psychopathy total scores x sexual deviance scores). The findings indicated that sexual deviance was a significant predictor of sexual violence recidivism, \( \exp(B) = 1.959 \), Wald (1) = 3.913, \( p = .048 \), whereas psychopathy only approached significance, \( \exp(B) = 1.087 \), Wald (1) = 3.452, \( p = .063 \). The psychopathy and sexual deviance interaction was not significant, \( \chi^2(1, N = 76) = 3.63, p = .547 \).

**Second Cox regression analysis – Psychopathy and sexual deviance dichotomised (PCL-SV total score ≤ 12 vs. ≥ 13, SVR-20 item score 0 vs. 1 or 2).** Most previous sexual recidivism research has treated psychopathy and sexual deviance as categorical variables when using Cox regression or Kaplan-Meier survival analysis (e.g., Hildebrand et al, 2004; Olver & Wong, 2006; Rice & Harris, 1997). For this reason, I performed a second Cox regression survival analysis using dichotomised psychopathy and sexual deviance groups, as predictors for sexual violence recidivism. As with the odds ratio analyses, psychopathy and sexual deviance were first dichotomised using the criteria of no psychopathy (≤ 12) and elevated psychopathy (≥ 13), and no deviance (score = 0) and elevated deviance (score = 1 or 2). Consistent with the first Cox regression, psychopathy and sexual deviance as main effects were entered first, and then the interaction between psychopathy and sexual deviance. Interestingly, these
results reflected a somewhat different pattern than my first Cox regression. In the second regression, psychopathy was now a significant predictor of sexual violence recidivism, $\exp(B) = 3.198$, Wald $(1) = 4.593$, $p = .032$, whereas sexual deviance was not, $\exp(B) = 2.867$, Wald $(1) = 2.596$, $p = .107$. However, the psychopathy and sexual deviance interaction remained nonsignificant, $\chi^2(1, N = 76) = 1.52$, $p = .218$.

In addition to using Cox regression to test for main and interaction effects, Cox regression survival curves for sexual violence recidivism were generated using the dichotomising criteria outlined in my second Cox regression analysis. Survival curves for psychopathy (no psychopathy versus elevated psychopathy) and sexual deviance (no deviance versus elevated deviance) are illustrated in Figures 3 and 4. As reflected in these survival curves, the elevated psychopathy group (versus the no psychopathy group) and the elevated deviance group (versus the no deviance group) appeared to sexually recidivate more quickly and in greater numbers over the follow-up period. For example, at the end of the follow-up period, approximately 32% of the elevated psychopathy group and 25% of the elevated deviance group had sexually recidivated, compared to approximately 10% in both the no psychopathy and no deviance groups. The elevated psychopathy group sexually recidivated at a higher rate (32%) than the elevated deviance group (25%).

Four groups were created by splitting psychopathy into the no psychopathy and elevated psychopathy groups, and then these two groups were divided by no deviance and elevated deviance. The four groups were: no psychopathy/deviance, elevated deviance only, elevated psychopathy only, and elevated psychopathy/deviance. The breakdown of the sample into the four groups and the sexual recidivism rates for each group are provided (Table 4), as well as the corresponding survival curves (Figure 5). A
visual comparison of the four survival curves suggests a marked difference between the sexual recidivism rate of the elevated psychopathy/deviance group and the other three groups. The elevated psychopathy/deviance group appeared to sexually recidivate more quickly than the other three groups, all of whose survival curves appeared relatively similar. As indicated in Table 4, at the end of the follow-up period, 50% of the elevated psychopathy/deviance group had sexually recidivated compared to approximately 10% averaged across the other three groups. Based on the difference between these sexual recidivism rates and the appearance of the four survival curves, it would be reasonable to assume there was a significant interaction effect between psychopathy and sexual deviance. However, as noted earlier, the interaction effect for my second Cox regression analysis was in fact nonsignificant, $\chi^2 (1, N = 76) = 1.52, p = .218$, a finding that illustrates the importance of testing for an interaction effect as opposed to relying on survival curves for determining whether a significant interaction is present.
Figure 3.

Cox regression survival curves for sexual recidivism for no psychopathy (PCL-SV ≤ 12) and elevated psychopathy (PCL-SV ≥ 13) offenders.
Figure 4.

Cox regression survival curves for sexual recidivism for no deviance (score = 0) and elevated deviance (score = 1 or 2) groups.
Table 6.

Sexual recidivism rates for groups based on no psychopathy vs. elevated psychopathy and no deviance vs. elevated deviance.

<table>
<thead>
<tr>
<th></th>
<th>No Psychop/SD (n = 20)</th>
<th>Elevated SD (n = 31)</th>
<th>Elevated Psychop (n = 11)</th>
<th>Elevated Psychop/SD (n = 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recidivism rate</td>
<td>10%</td>
<td>12.9%</td>
<td>9.1%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Figure 5.

Cox regression survival curves for sexual recidivism for four offender groups based on no psychopathy vs. elevated psychopathy and no deviance vs. elevated deviance.
Third Cox regression analysis – Psychopathy and sexual deviance

dichotomised (PCL-SV total score ≤ 17 vs. ≥ 18, SVR-20 item score 0 or 1 vs. 2). A third Cox regression survival analysis was completed using the more stringent criteria of low psychopathy (≤ 17) and high psychopathy (≥ 18), and low deviance (score = 0 or 1) and high deviance (score = 2). Again, psychopathy and sexual deviance were entered first as main effects, followed by the interaction term (psychopathy x sexual deviance). These results were more consistent with the first Cox regression, where sexual deviance as a predictor of sexual violence recidivism approached significance, \( \exp(B) = 2.945 \), Wald (1) = 3.668, \( p = .055 \), whereas psychopathy was not significant, \( \exp(B) = 1.930 \), Wald (1) = 1.133, \( p = .287 \). The psychopathy and sexual deviance interaction remained nonsignificant, \( \chi^2(1, N = 76) = .064, p = .801 \). A comparison of the main and interaction effects results across the three Cox regression analyses is provided in Table 5.

Table 7.

Main and interaction effects for psychopathy (PCL-SV total score) and sexual deviance (SVR-20 Sexual Deviation item) as predictors of sexual recidivism across the three Cox regression analyses.

<table>
<thead>
<tr>
<th>Regression</th>
<th>Psychopathy</th>
<th>SD</th>
<th>Interaction effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Cox regression</td>
<td>.063</td>
<td>.048</td>
<td>.547</td>
</tr>
<tr>
<td>Psychopathy - continuous, score of 0-24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex Dev - continuous, score of 0, 1, or 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Cox regression</td>
<td>.032</td>
<td>.107</td>
<td>.218</td>
</tr>
<tr>
<td>Psychopathy - dichotomous, score ≤ 12 vs. ≥ 13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex Deviance - dichotomous, score 0 vs. 1 or 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Cox regression</td>
<td>.287</td>
<td>.055</td>
<td>.801</td>
</tr>
<tr>
<td>Psychopathy - dichotomous, score ≤ 17 vs. ≥ 18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex Deviance - dichotomous, score 0 or 1 vs. 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The sexual recidivism survival curves for the third Cox regression are presented in Figures 6 and 7, with low psychopathy versus high psychopathy groups and the low deviance versus high deviance groups respectively. The patterns reflected in these survival curves are consistent with Figures 3 and 4. The high psychopathy group (versus the low psychopathy group) and the high deviance group (versus the low deviance group) appeared to sexually recidivate more quickly over the follow-up period. For example, at the end of the follow-up period, approximately 40% of the high psychopathy group versus 15% of the low psychopathy group had sexually recidivated. Similarly, approximately 35% of the high deviance group versus 11% of the low deviance group had sexually recidivated. In addition, a greater proportion of the high psychopathy group (40%), as opposed to the high deviance group (35%), sexually recidivated by the end of the follow-up period.

The offenders were again divided into four groups based on the more stringent criteria used in the third Cox regression and survival curves were generated (Figure 8). The four groups were: low psychopathy/deviance; high deviance only; high psychopathy only, and high psychopathy/deviance. The breakdown of the sample into these four groups and the recidivism rates for the groups are presented in Table 6. Consistent with the second Cox regression survival curves (Figure 5), the high psychopathy/deviance group appeared to sexually recidivate more quickly than the other three groups. However, there now appeared to be less discrepancy between the high psychopathy/deviance group and the high psychopathy only and high deviance only groups. The pattern between the high psychopathy/deviance group and the low psychopathy/deviance group remained the same as in Figure 5. Indeed, at the end of the follow-up period, 50% of the high psychopathy/sexual deviance group had sexually
recidivated compared to 10.2% of the low psychopathy/deviance group. The high psychopathy only and high deviance only groups had comparable sexual recidivism rates, 25% and 29.4% respectively. The pattern reflected in the third Cox regression survival curves for these four groups was likely not a robust finding in light of the small number of offenders in the high psychopathy only group (n = 4) and the high psychopathy/deviance group (n = 6). Despite this, when these results are taken in conjunction with the sexual recidivism rates found in Table 4, it was concluded that offenders with moderate to high psychopathy and sexual deviance sexually recidivated more quickly and in greater numbers than the other offenders in my sample. However, as indicated by the Cox regression analyses, the interaction effect between psychopathy and sexual deviance failed to reach significance. Therefore, even though the co-occurrence of moderate to high psychopathy and sexual deviance was associated with higher sexual recidivism rates relative to the other groups, the increased risk for sexual recidivism was nonsignificant.
Figure 6.

Cox regression survival curves for sexual recidivism for low psychopathy (PCL-SV score < 17) and high psychopathy (PCL-SV score > 18) offenders.
Figure 7.

Cox regression survival curves for sexual recidivism for low deviance (score = 0 or 1) or high deviance (score = 2) offenders.
Table 8.

Recidivism Rates for sexual recidivism for four offender groups based on low psychopathy vs. high psychopathy and low deviance vs. high sexual deviance.

<table>
<thead>
<tr>
<th></th>
<th>Low Psychop/SD (n = 49)</th>
<th>High SD (n = 17)</th>
<th>High Psychop (n = 4)</th>
<th>High Psychop/SD (n = 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recidivism rate</td>
<td>10.2%</td>
<td>29.4%</td>
<td>25%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Figure 8.

Cox regression survival curves for sexual recidivism for four offender groups based on low psychopathy vs. high psychopathy and low deviance vs. high sexual deviance.
Discussion

Overview of the research findings

The main purpose of this study was to examine two central questions relating to psychopathy and sexual deviance within a sex offending population. The first question was whether these two risk factors were independent within our sample or if the presence of either psychopathy or sexual deviance increased the likelihood that the other risk factor would be present also. The second question was how psychopathy and sexual deviance interacted to increase risk for sexual violence recidivism; was the relationship additive or multiplicative? As predicted, psychopathy and sexual deviance as general constructs were independent, although a number of specific aspects of psychopathy were positively correlated with specific aspects of sexual deviance. Further, no interaction effect was found between psychopathy and sexual deviance in predicting sexual recidivism, a finding that suggested these two risk factors act independently and share an additive relationship. Both psychopathy and sexual deviance as individual risk factors predicted sexual recidivism but these findings were not replicated across all of the analyses within this study.

Question 1: Are Psychopathy and Sexual Deviance Independent Risk Factors?

Implications for research and theory

The overall independence of psychopathy and sexual deviance within my study suggested that in general, the presence of one of these risk factors does not necessarily
increase the likelihood that the other risk factor will also be present. This perspective is consistent with previous research (Lalumière & Quinsey, 1996). Indeed, there does not appear to be a theoretical argument in the literature as to why psychopathy and sexual deviance as general constructs would be expected to co-occur. Conversely, one previous study found that psychopathy and sexual deviance shared an inverse relationship (Langton et al., 2007). In addition, it has been found that rapists generally have lower sexual deviance ratings than child molesters (Olver & Wong, 2006; Serin et al., 2001). However, rapists are more likely to have higher psychopathy scores, and be diagnosed as psychopathic than child molesters (Olver & Wong, 2006; Porter et al., 2000; Serin et al., 1994; Seto & Barbaree, 1999). In essence, while child molesters appear more likely to be sexually deviant, they appear to be less likely to be psychopathic, and vice versa for rapists. These findings lend support to the theory that the general constructs of psychopathy and sexual deviance are independent risk factors.

Despite finding an independent relationship between the global ratings of psychopathy and sexual deviance, the odds ratio test approached significance ($p = .058$) when psychopathy and sexual deviance were dichotomised using the more extreme cut-off scores for each risk factor. In addition, there were statistically significant correlations between specific aspects of psychopathy and specific aspects of sexual deviance. Although there did not appear to be a strong pattern to these correlations that would be clearly informative, a possible pattern may exist for Factor 1 of the PCL-SV. Factor 1 was the only PCL-SV score that was significantly correlated with the sexual deviance indicators total score. This suggested that Factor 1 (as opposed to the PCL-SV total score) might have been driving the nearly significant odds ratio for the extreme groups of psychopathy and sexual deviance in my study. Factor 1 was also significantly correlated
with four of the sexual deviance indicators, whereas the other PCL-SV scores had fewer significant correlations (range = 0 to 3). These findings tentatively suggest that Factor 1 may be more strongly related to sexual deviance than other aspects of psychopathy. But there remains a great deal of uncertainty, given there were five sexual deviance indicators that were not significantly correlated with Factor 1. Further, given that there were a high number of correlations performed (50 correlations total), it is possible that some of the correlations were significant due to chance.

At this point it is premature to move beyond speculation that aspects of psychopathy may increase the likelihood that certain indicators of sexual deviance will be present also. However, the self-interested and callous nature of Factor 1 characteristics does appear to have a logical theoretical fit with some aspects of sexual deviance. For example, the current study found that Factor 1 shared a significantly positive correlation with subjects enjoying and/or accepting their sexual deviance. Individuals enjoying and/or accepting their sexual deviance reflects Factor 1 characteristics such as self-centredness and a lack of remorse/empathy towards victims. Interestingly, it appears that the current study was the first to look at the relationship between PCL-SV scores (total and Factors scores) and nine different sexual deviance indicators, in addition to sexual deviance as a general construct. It would be informative for future research to include different aspects of psychopathy and sexual deviance in the analyses. This would help to address the intriguing empirical question of whether Factor 1 and other aspects of psychopathy are positively associated with aspects of sexual deviance, despite the indications that psychopathy and sexual deviance as general constructs tend to be independent.
Implications for clinical practice

The observation in the current study that the presence of psychopathy or sexual deviance did not increase the likelihood that the other risk factor would also be present has clinical implications. It suggests that professionals completing sex offender risk assessments should likely treat these two risk factors as independent, and as such, apply a rigorous diagnostic approach to both risk factors individually. As there does not appear to be adequate research in this area, professionals involved in the legal system may presume that a positive relationship exists between psychopathy and sexual deviance. Such an assumption is understandable given it may be difficult to differentiate between psychopathic traits and sexual deviance. For example, it has been suggested that offenders’ sexual offence history “may represent more about their impulsivity and disregard for others than specifically a deviant sexual arousal” (Doren, 2002, p. 73). Such confusion may encourage the erroneous perspective that the two risk factors are in fact similar and tend to co-occur. This highlights the importance of professionals recognizing that psychopathy and sexual deviance, as general constructs, appear to be independent and distinct risk factors. Without this awareness, the quality of sexual violence risk assessments may be compromised and the co-occurrence of psychopathy and sexual deviance may be inflated.

Question 2: How Do Psychopathy and Sexual Deviance Interact to Increase Risk for Sexual Recidivism?

Implications for research and theory

The most important finding of this study was that there was no interaction effect between psychopathy and sexual deviance in predicting sexual recidivism. Therefore, it
was concluded that psychopathy and sexual deviance shared an additive relationship within my sample of sex offenders. Interestingly, the sexual recidivism rates for the moderate psychopathy and sexually deviant groups (Table 4) were suggestive of a multiplicative relationship between psychopathy and sexual deviance. The elevated psychopathy only and elevated deviance only groups had sexual recidivism rates of 9.1% and 12.9% respectively, yet the co-occurrence of elevated psychopathy/deviance was associated with a 50% sexual recidivism rate. The corresponding survival curves (Figure 5) also reflected a pattern that was indicative of a multiplicative relationship, as the elevated psychopathy/deviance survival curve was markedly different than the other three groups’ survival curves. Yet, there was no interaction effect in the Cox regression analysis run with these moderate groups. Thus, it is not possible to determine whether there is an interaction effect by comparing either recidivism rates or survival curves; researchers must directly test for an interaction effect using appropriate analyses.

The current study’s failure to find an interaction effect between psychopathy and sexual deviance in predicting sexual recidivism is consistent with previous research findings (Gretton et al., 2001; Serin et al., 2001) but in contrast to other research (Harris et al., 2003; Olver & Wong, 2006; Rice & Harris, 1997). One possible explanation for the discrepant findings regarding whether psychopathy and sexual deviance interact to significantly increase the risk for sexual recidivism may be the type of offender samples used in the research. In the three previous studies where an interaction effect was reported (Harris et al., 2003; Olver & Wong, 2006; Rice & Harris, 1997), the samples were made up of relatively high-risk sex offenders, all serving a federal sentence. For example, in the Rice and Harris study (1997), the majority of the subjects were serious offenders with a diverse criminal history. Approximately one-third of the sample ($n = 104$).
had also received at least five years of treatment in a maximum-security psychiatric facility. In contrast, my sample was comprised of offenders serving provincial sentences, who, for the most part would be considered lower risk than a federal sample. Provincial sentences are shorter than federal sentences, which normally reflect a conviction for a less serious offence. In addition, 68.4% of my sample had never been convicted of a sexual offence before, and for 38.2% of my sample, the index offence was their first conviction for any type of offence.

In terms of why the offender’s level of risk may change how psychopathy and sexual deviance interact, the relationship between these two risk factors may be influenced by an offender’s criminogenic profile. A sex offender with a history of serious sexual and nonsexual offences is likely a different type of offender than one who has one conviction for a sexual offence and no other criminal history. The former, by virtue of his extensive criminal history, may be desensitized to social norms and therefore more prone to engage in antisocial behaviour (including sexual offending) than the latter. As well, psychopathy and sexual deviance exist on a continuum. There may be a difference in the severity of psychopathy and sexual deviance between two offenders who both meet the criteria for psychopathy and sexual deviance. One offender may just meet the threshold to be considered psychopathic and sexually deviant, while another offender may exhibit more serious behaviour or characteristics. Hypothetically, the first offender may have a PCL-SV total score of 18 and one long-standing paraphilia and victim type, while the second offender may have a PCL-SV total score of 24 and multiple paraphilias and a broad range of victim types. Similarly, it may be that in general, the offenders in my psychopathy and sexual deviance groups were relatively less serious offenders (lower risk) than the offenders in the same group in the studies where an interaction
effect was reported (e.g., Olver & Wong, 2006; Rice & Harris, 1997). However, even within a higher risk sample (i.e., federal offenders) an interaction effect may not be found between psychopathy and sexual deviance in predicting sexual recidivism (Serin et al., 2001), which suggests the interaction effect may not be influenced by risk level.

Interestingly, in my study the proportion of offenders in the elevated psychopathy/deviance group (18%) was comparable to the proportion (14%) reported in the Olver & Wong (2006) study. Both studies used similar criteria to create the four psychopathy and sexual deviance groups. This suggests that the prevalence of psychopathic and sexual deviant offenders may not differ across relatively lower or higher risk samples. However, as suggested earlier, how psychopathy and sexual deviance manifest themselves within these different types of samples may differ, and these differences may account for whether an interaction effect exists between psychopathy and sexual deviance. Therefore, it would be interesting for future sexual recidivism research to include samples of varying risk levels for comparison purposes to determine whether psychopathy and sexual deviance interact differently depending on the samples' level of risk.

An additive relationship was observed between psychopathy and sexual deviance in the current study. Therefore, the co-occurrence of psychopathy and sexual deviance within my sample was not associated with the “significantly” higher risk to sexually recidivate that one would be expect had there been a multiplicative relationship. Nonetheless, the co-occurrence of psychopathy and sexual deviance was associated with the highest sexual recidivism rates, suggesting it is worthwhile to consider how the co-occurrence of psychopathy and sexual deviance may facilitate sexual recidivism. Theoretically, psychopathic/sexually deviant offenders may have more difficulties
resisting their impulse to commit sexual violence. For these individuals, their sexual deviance may provide a strong motivator or drive to engage in sexual violence, which is not properly inhibited due to their psychopathic traits (Knight & Guay, 2006). For example, the deficient interpersonal and affective characteristics associated with Factor 1 may create insensitivity to the distress of others, while also encouraging psychopathic individuals to be preoccupied with their own desired outcome (i.e., fulfilling their sexual deviance). Factor 2 traits may also act as disinhibitors to sexual violence. Highly impulsive and antisocial individuals may be less concerned with the potential costs (both for themselves and others) related to sexual violence, and therefore, may respond quickly to their sexually deviant urges, without considering the consequences.

For psychopathic/sexually deviant individuals, it is not clear what motivations underlie the sexual violence due to the paucity of research in this area. However, it is possible to briefly raise a number of hypotheses. An individual’s sexual deviance may dictate that the primary motivator for engaging in sexual violence is for sexual gratification. Further, if the individual meets the criteria for psychopathy largely based on the impulsive and antisocial behaviour items (Factor 2), then opportunity may be a secondary motivator for the sexual violence. It is also possible that a psychopathic and sexually deviant individual may be primarily motivated by his need to assert power over another person or inflict pain, and the sexual violence allows him to do so while also acting out a sexually deviant fantasy. In this scenario, power or control is the primary motivator with sexual gratification being a secondary motivator. The disinhibitory or motivational aspects of psychopathy and sexual deviance could be explored in future research as a possible explanation for why the co-occurrence of these risk factors is consistently associated with higher sexual recidivism rates.
Psychopathy and sexual deviance as individual risk factors were not robust predictors of sexual recidivism within my study. Psychopathy only predicted sexual recidivism in one of the three Cox regression analyses, and the same was true of sexual deviance. To confidently conclude that psychopathy and sexual deviance predicted sexual recidivism, I would expect that such results would be reflected across all three of the Cox regression analyses. This is an important point as it highlights how misleading the results could have been had I only presented one of the regression analyses.

Previous research in this area that has utilized Cox regression analysis has reported on the main effects of psychopathy and sexual deviance on sexual recidivism based on one analysis (e.g., Harris et al., 2003; Olver & Wong, 2006; Rice & Harris, 1997). It would be more informative for future research in this area to include the results of a number of Cox regression analyses; especially given it is not yet clear how to best treat the variables. The tendency appears to be to dichotomise psychopathy and sexual deviance, however, in previous research the dichotomising criteria varied across studies and were not supported with a clear rationale for why those cut-offs were used or considered best.

**Implications for clinical practice**

The findings of the current study, in conjunction with previous research, suggest that psychopathic and sexual deviant offenders may not be at statistically significantly higher risk to sexually recidivate than offenders with either one or none of these risk factors. In light of this, there is concern that people may be putting too much emphasis on the co-occurrence of psychopathy and sexual deviance. Indeed, based on previous research (Rice & Harris, 1997; Harris et al., 2001) it has been suggested that
psychopathic and sexual deviant offenders are at "very high risk" to sexually recidivate within a short time period (Doren, 2002). However, in the previous research (Rice & Harris, 1997; Harris et al., 2001) it appears that 35% to 50% of the psychopathic and sexually deviant offenders had not sexually recidivated five years after being released. This begs the question, at what point is it appropriate to deem an offender "very high risk". This is an important question because the courts often call on clinical professionals to assign a level of risk to an offender regarding sexual recidivism.

It is not currently known how those involved in the legal process (e.g., forensic psychologists, lawyers, and judges) generally view the risk associated with the co-occurrence of psychopathy and sexual deviance. Given that the co-occurrence of these two risk factors has been described as a "deadly combination" (Hare, 1999), there may be the tendency for those involved in the legal system to exaggerate the risk level. This could have serious ramifications for sex offenders who are assessed to be both psychopathic and sexually deviant, as it could result in longer prison time, both in terms of sentencing length and the individual being detained indefinitely. For example, a recent study done by Levenson and Morin (2006) found that sexual deviance and psychopathy were the two strongest predictors of whether someone would be recommended for civil commitment in the state of Florida. In light of such findings, it appears that a great deal of weight is being given to the co-occurrence of these risk factors, perhaps prematurely.

To clarify my position on the level of risk associated with the co-occurrence of psychopathy and sexual deviance, logically the presence of two risk factors will be associated with greater risk than if only one of these risk factors is present. Indeed, psychopathic and sexually deviant offenders consistently have higher sexual recidivism rates than offenders with only one or none of these risk factors. In terms of the risk
assessment and community management of psychopathic and sexually deviant offenders, it is appropriate to generally view these individuals at "increased risk" relative to other sex offenders who only have one of these risk factors. There is a critical difference however, between an offender being labelled as higher risk relative to other offenders and an offender being labelled as "very high risk". The former label allows for latitude in estimating the likelihood of sexually recidivism, whereas the label of very high risk implies certainty that the offender will sexually recidivate.

A final point of clinical relevance pertains to using the SVR-20 Sexual Deviation item to assess sexual deviance. In the current study, the SVR-20 item significantly predicted sexual recidivism when it was treated as a continuous three-category variable. Previous research has also found that the SVR-20 Sexual Deviation item significantly predicted sexual recidivism (Dempster & Hart, 2002; Hildebrand et al., 2004). Therefore, it appears that the Sexual Deviation item of the SVR-20 has the potential to be a psychometrically sound means of assessing sexual deviance for the purpose of predicting sexual recidivism. This is an encouraging possibility given that professionals conducting risk assessments may not have access to phallometric testing. This sentiment has been presented in previous research (Olver & Wong, 2006), which also highlighted the limitations of phallometric testing regarding such issues as offenders who do not respond to phallometric testing or who refuse to comply with testing. A clinical evaluation of sexual deviance is not hindered by such limitations and can be meaningful even when only based on file information, as was the case in both my study and the previous research (Dempster & Hart, 2002; Hildebrand et al., 2004). Further, compared to phallometric testing, the SVR-20 Sexual Deviation item may offer a more comprehensive assessment given that numerous aspects of sexual deviance (including
Sexual Deviance and Psychopathy 54

phallometric testing results) are subsumed under the Sexual Deviation item. Therefore, the SVR-20 Sexual Deviation item may provide a practical and effective alternative to the phallometric assessment of sexual deviance.

Conclusions

When either psychopathy or sexual deviance is present, an offender may be at increased risk to sexually recidivate than if neither of these risk factors are present. The co-occurrence of psychopathy and sexual deviance seems to reflect an even higher level of risk for sexual recidivism than the presence of only one of these risk factors. The question remains though, how much greater is the risk for sexual recidivism when both risk factors are present as opposed to only one? The inconsistent findings across the small number of studies in this area (including my own study) cannot provide a clear indication of how much the risk for sexual recidivism increases when both psychopathy and sexual deviance are present. Therefore, additional research is necessary before we can confidently describe the level of risk that the co-occurrence of psychopathy and sexual deviance represents. Indeed, the research to date does not appear to support broadly labelling the co-occurrence of psychopathy and sexual deviance as a "deadly combination".

On a larger scale, it is imperative that researchers move beyond predicting whether psychopathy and/or sexual deviant individuals will sexually recidivate, and consider which dynamic risk factors most greatly reduce the likelihood the individual will sexually re-offend. In other words, how do we best treat and manage these individual in the community so as to prevent future sexual violence? As is evident by recidivism research, sexual offenders, including those who are both psychopathic and sexually
deviant, are generally released into the community at some point. The higher recidivism rates associated with psychopathic and sexually deviant offenders suggest that when these individuals are back in the community, they may be more vulnerable to engaging in sexual violence. There is greater value, both to the offender and society, in preventing these offenders from sexually recidivating than estimating whether they will sexually recidivate. And lastly, while sexual recidivism base rates are informative to a point with respect to general trends, they do not allow for accurate predictions of an individual's level of risk. In terms of future research examining the relationship between psychopathy and sexual deviance, it would be more informative to explore motivational and circumstantial factors that either discourage or facilitate sexual violence, than simply trying to estimate the likelihood that psychopathic and sexually deviant offenders will sexually recidivate.
REFERENCES


APPENDICES
### Appendix A: Correlation matrix of PCL-SV scores and Sexual Deviance Indicators

<table>
<thead>
<tr>
<th></th>
<th>PCL-SV Total Score</th>
<th>PCL-SV Factor 1</th>
<th>PCL-SV Factor 2</th>
<th>PCL-SV Factor 3</th>
<th>PCL-SV Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual Deviance Indicators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>Pearson Correlation</td>
<td>.183</td>
<td>.291(*)</td>
<td>.218</td>
<td>.049</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.114</td>
<td>.011</td>
<td>.059</td>
<td>.677</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Sexual Deviant Fantasies</td>
<td>Pearson Correlation</td>
<td>.058</td>
<td>.138</td>
<td>.121</td>
<td>-0.031</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.621</td>
<td>.234</td>
<td>.297</td>
<td>.791</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Sexually Deviant Urges</td>
<td>Pearson Correlation</td>
<td>.082</td>
<td>.125</td>
<td>.143</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.480</td>
<td>.280</td>
<td>.219</td>
<td>.990</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Repeated Sexually Deviant Acts</td>
<td>Pearson Correlation</td>
<td>-.001</td>
<td>.104</td>
<td>.038</td>
<td>-0.060</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.992</td>
<td>.373</td>
<td>.743</td>
<td>.605</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Reported Physiological</td>
<td>Pearson Correlation</td>
<td>.126</td>
<td>.254(*)</td>
<td>.110</td>
<td>.007</td>
</tr>
<tr>
<td>Arousal to Inappropriate</td>
<td>Sig. (2-tailed)</td>
<td>.280</td>
<td>.027</td>
<td>.344</td>
<td>.955</td>
</tr>
<tr>
<td>Persons</td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Reported Physiological</td>
<td>Pearson Correlation</td>
<td>.306(**)</td>
<td>.340(**)</td>
<td>.163</td>
<td>.218</td>
</tr>
<tr>
<td>Arousal to Inappropriate</td>
<td>Sig. (2-tailed)</td>
<td>.007</td>
<td>.003</td>
<td>.159</td>
<td>.059</td>
</tr>
<tr>
<td>Objects</td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Sexual fixation on</td>
<td>Pearson Correlation</td>
<td>.033</td>
<td>.191</td>
<td>.159</td>
<td>-1.19</td>
</tr>
<tr>
<td>Inappropriate Persons</td>
<td>Sig. (2-tailed)</td>
<td>.777</td>
<td>.099</td>
<td>.171</td>
<td>.307</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Sexual fixation on</td>
<td>Pearson Correlation</td>
<td>.306(**)</td>
<td>.340(**)</td>
<td>.163</td>
<td>.218</td>
</tr>
<tr>
<td>Inappropriate Objects</td>
<td>Sig. (2-tailed)</td>
<td>.007</td>
<td>.003</td>
<td>.159</td>
<td>.059</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Sexual Deviance</td>
<td>Pearson Correlation</td>
<td>.234(*)</td>
<td>.276(*)</td>
<td>.310(**)</td>
<td>.085</td>
</tr>
<tr>
<td>Accepted/Enjoyed by the Person</td>
<td>Sig. (2-tailed)</td>
<td>.042</td>
<td>.016</td>
<td>.006</td>
<td>.465</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Diagnosis of Paraphilia</td>
<td>Pearson Correlation</td>
<td>.189</td>
<td>.204</td>
<td>.156</td>
<td>.168</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.103</td>
<td>.077</td>
<td>.179</td>
<td>.146</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).