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THE EFFECT OF GENDER ON VIOLENT AND

NON-VIOLENT RECIDIVISM:

A META-ANALYSIS

by

Rachael Eve Collins

A Thesis submitted in conformity with the requirements for the Degree of

Master of Arts, Graduate Department of Sociology, Lakehead University

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ABSTRACT

A large body of literature has been dedicated to understanding re-offending after release from prison – a phenomenon known as recidivism. Such research is critical both to understanding the determinants of crime and optimizing the correctional system. A meta-analysis was conducted using 49 published studies on actuarial predictors of both violent and non-violent recidivism in men and women. The current analysis resulted in 65 effect sizes between violent recidivists and non-recidivists, and 60 effect sizes between violent recidivists with non-violent recidivists. Several variables (drug/alcohol use, age, and marriage) were predictive of recidivism. Gender differences were also observed. In men, increased violent criminal history was associated with increased violent recidivism. In women, a younger age at first offence and longer sentences were predictive of violent re-offending. Despite limited data on women, pursuing the predictors of recidivism is a rewarding avenue of research which can lead to many possibilities within this field.

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I. TABLE LEGEND

1. INTRODUCTION

The study of crime and its determinants has intrigued researchers in criminology, sociology and psychology for decades. Within this diverse and multi-faceted field, a growing body of literature has been dedicated to understanding those individuals who re-offend after being released from prison – a phenomenon known as recidivism.

The need to understand individual and group recidivism is critical to optimizing the correctional system in general. According to Correctional Services Canada, the purpose of the Canadian correctional system is "the rehabilitation of offenders and their reintegration into the community as law-abiding citizens through the provisions of programs in penitentiaries and in the community" (Correctional Services of Canada, 2003). Despite this ideal, the correctional system has limited resources to work with. Thus, it is of the utmost importance to identify those offenders who are at the greatest risk of re-offending. Outlining these risk factors will eventually aid parole officers, probation officers and corrections officials to identify and target resources towards those who are at the greatest risk. In turn, reducing recidivism will reduce both the risk to the individual victims and the toll crime takes upon our cities and public safety. This may ultimately reduce the cost of crime at all levels of public spending and allow for the maximization of program effectiveness both inside the institution and in society at large (Bonta, Pang, & Wallace-Capretta, 1995; Pelissier, Camp, Scott, Gaes, Saylor, William *et al.*, 2003).

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The great potential for understanding recidivism has led researchers to investigate this phenomenon at length. However, the relevant limitations of this line of research require discussion.

1.1 Limitations in the Study of Recidivism

Although, as stated above, much research has been done in an attempt to establish critical insight into recidivism, progress towards such an understanding is hampered by several limitations inherent to this field of study. Although none of these limitations are severe enough to significantly impede progress in investigating this problem, it is important to understand these limitations in order to appreciate the innate limits surrounding naturalistic observation (i.e., observation of a subject in their own environment without experimental manipulation of behaviour) in the context of the criminal justice system. The following limitations are the most common outlined in the literature.

1.11 Defining Recidivism

One of the most fundamental problems faced when studying recidivism lies in how to define this term. The conclusions drawn fr   , p   ce of research may b effected by the definition of recidivism that a articular researcher chooses. Moreover, this impact may be both ideological and or practical in nature.

Ideologically, definitions of recidivism may vary in term of the degree to which they place the individual vs. the correctional institution and/or society at large as the

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critical agent responsible for this phenomenon. In its most rudimentary form, recidivism

may be defined as a situation in which "a person…persistently relapses into crime"

(Hawkins, 1994, p. 428). Recidivism may also be thought of as "…the rate or percentage

of offenders who are committed to the custody of the Department of Corrections for

another offence within a specified period of time" (Oklahoma Department of Corrections,

2004). These definitions inherently place responsibility for post-release actions squarely

with the convicted individual. In contrast, some researchers (e.g., Baumer, Wright,

Kristinsdottir, & Gunnlaugsson, 2002) have defined recidivism as a social failure, which

can be indexed by the extent to which offenders are not rehabilitated in prison, yet

prematurely released into society at large.

In a similar vein, Baumer *et al.* (2002, p. 53) define the prevention of recidivism

as "…the instrumental goal of crime prevention, punishment must fulfil an important

social function: to increase social solidarity by creating scapegoats and reinforcing

boundaries of acceptable behaviour". Clearly, such definitions place the responsibility of

crime and recidivism prevention with the correctional institution, rather than the

individual. Such ideological perspectives may have profound impact on the nature of the

research that is carried out, as well as the conclusions that researchers will draw from

their results. The influences of these theoretical perspectives, however fundamental, are

subtle in nature, and thus difficult to tease apart.

The influences of practical limitations, however, are more straightforward. One

of the greatest of these practical obstacles to accurately assessing recidivism lies in the

fact that there is no single generally accepted operational definition of the term

(Lattimore, 2000; Rice & Harris, 1995). Typically, recidivism is indexed using one of

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four benchmark events (Matthews & Pitts, 1998, p. 5): re-arrest, re-conviction (a person is convicted of another crime, but not necessarily returned to prison), readmission (return to prison), and re-offending rate (commission of a crime).

Since individuals may experience one or more events in the above sequence, and not others, estimates of the rates of recidivism within a population may change drastically depending on the index measure. This runs the risk of identifying individuals who are still, by some measures, recidivists (e.g., individuals who have been re-arrested but not re-convicted) as examples of the ability of a prison or other correctional program to successfully rehabilitate individuals (Matthews & Pitts, 1998, p. 5).

1.12 Unobserved Criminal Behaviour

As stated above, recidivism is an inherently difficult phenomenon to measure accurately. The main obstacle to accurate assessment of this phenomenon lies in the fact that many crimes are unobserved (Lattimore, 2000). Although most researchers, policy makers, and the criminal justice system rely mainly on either self-reports of criminals or official measures of crime rates (i.e., aggregated municipal, state/provincial, or national statistics), each of these options carries the potential to grossly underestimate recidivism.

Although using self-reports opens the possibility of capturing some of the information that is unavailable through other means (such as when participants admit to crimes which they have never been charged or convicted of), it is difficult (and often impossible) to verify the truthfulness of the statements made.

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1.13 Opportunity and Offending

Another problematic area within the research regarding recidivism involves the fact that researchers may drastically alter the base rate of recidivism by changing the length of their follow-up analysis, and thus the length of time in which one has the opportunity to reoffend. For instance, certain studies of recidivism have used a six month follow-up period (e.g., Putnins, 2003, p. 401), while others have opted to follow up for a period of two or three years (e.g., Merrill, Alterman, Cacciola, & Rutherford, 1999; Pelissier *et al.*, 2003). In contrast, studies have been conducted following parolees for seven years in order to determine recidivism rates (Heller & Ehrlich, 1984, p. 31).

Proulx *et al.*, (1999) states that the most accurate recidivism rates are obtained from studies that have a follow-up period of five years or longer. In general, longer follow-up periods allow for a stronger relationship between the predictors of recidivism and the eventual outcome (Proulx *et al.*, 1999). Longer follow-up periods may create a more accurate sample of recidivism, since 35-40 percent of the people released from prison within the United States are re-incarcerated three to six years after their release (Baumer *et al.*, 2002). Despite several significant limitations, several key predictors have emerged which show promise in identifying those at the greatest risk for recidivism, which will be detailed below.

1.2 Implications of the Study

Although the actuarial predictors of recidivism in general have been addressed previously, an integrated examination of the contribution of both violence and gender on this phenomenon has yet to be conducted. Thus, the purpose of this research is to examine some of the better-understood determinants of recidivism, and examine the contribution of both violence and gender to this phenomenon in an integrated examination.

According to several researchers (e.g., Bonta, Law & Handson, 1998; Dowden & Andrews, 1999; Loucks & Zamble, 1994), there are both similarities and differences to why men and women commit and re-commit crimes. Women are especially important when examining crime and recidivism because they are largely ignored within the criminal justice system. With more research done on this topic; one will be able to design programs that will target both the criminogenic needs of women, and their special needs which separate them from male prisoners. A large meta-analysis conducted by Gendreau, Little, and Goggin, (1996), found that one of the strongest predictors of future recidivism in men was criminogenic needs. Thus, in order to design highly effective offender treatment programs, strong attention needs to focus on the predictors of recidivism in general, such as criminogenic needs of both men and women independently.

In addition, there have been many attempts over the years to understand the nature of violence. However, due to the idiosyncratic pathology of violence itself, there remains little evidence for the exact causes of violent behaviour (Holmes & Holmes

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1996; Athens 1980). Researching the determinants of criminal behaviour and, more importantly, repeated criminal behaviour helps not only society at large, but also the individual committing these acts.

An important area of differentiation for violence is gender. Thus, it is worthwhile to understand why men and women are different when it comes to committing violent acts. Such an understanding of the nature of gender roles in criminal behaviour and how they impact on violence can best be attained by concomitant examination of both gender and violence in the context of criminal recidivism.

1.3 Factors Affecting Recidivism

As stated above, much has been accomplished concerning the factors that predict future recidivism. The link between several of these factors (e.g., age, criminal history, anti-social peer groups, and substance use) and recidivism has been established to the point where they are now considered common place indicators of criminal behaviour (Bonta *et al*, 1998; Gendreau *et al*, 1996). However it is important to note that many of these social factors have been widely researched only in male prison populations (which will be discussed in more detail below).

In large, these determinants can be segregated into several distinct clusters: biographical data, judicial data, psychological traits, and social ties. The following discussion will outline some of the factors affecting recidivism in male offenders.

Biographical data encompass static variables in the individual's life history, such as their age of first offence and level of education. These variables have repeatedly shown a strong correlation with recidivism rates, and are included as part of several

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standardized assessments of recidivism risk, such as the Level of Service Inventory–

Revised (Andrews & Bonta, 1995) and the General Statistical Information on Recidivism

measure (Nuffield, 1982).

Judicial data, which is usually collected by police or courts, includes criminal

history of the offender. For instance, a study conducted by Dejong (1997) examined how

incarceration sentence length affects the length of time from release until re-arrest.

Dejong (1997) found that time length of incarceration did not play a significant role in

predicting the timing of recidivism, but did increase the probability of eventual re-arrest.

Thus, offenders that had longer prison sentences may delay the length of time in which

they recidivate over those who served shorter sentences.

Psychological traits include personality traits, such as extraversion/introversion,

the presence of pathology (e.g., psychopathology or schizophrenia), as well as destructive

or high risk behaviours (i.e., drug and alcohol abuse).

Social ties, such as atmosphere at home, parents' criminal background, divorce

(either parents or the individual) and overall home life environment, have also proven

important determinants of recidivism. For instance, Loucks and Zamble (1994) found

that many of the men who recidivate spent the first years of their lives living with adults

other than their parents.

Bonta, et al. (1998) also found that an individual's marital status might play a role

in recidivism rates for men. In addition, certain historical data, such as school history

(including truancy and misconduct at school) and work history (such as unemployment,

unstable job and lack of hobbies and interests) are thought to be predictive of future

offences (Buikhuisen & Hoekstra, 1974, p. 63). The overall trend within this type of data

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is that individuals at the greatest risk of recidivism have shown the greatest amount of instability in their lives. For example, many dropped out of school, had problems with their families, and were unemployed or held odd jobs at the time of their arrest (Loucks & Zamble, 1994). Similarly, Dejong (1997) has concluded that men with few bonds to society (which, according to Dejong, included not only family ties, but also employment and education) were among the most likely to recidivate after incarceration.

Several other variables were found to be distinctively predictive of recidivism in much of the research (drug use, alcohol use, age, and marriage).

1.31 Substance use and Recidivism

Alcohol and drug use are significant predictors of violent recidivism and may lead to an increased risk of recidivism in general (Bonta *et al.* 1995; Gendreau *et al*, 1996 Jones & Sims, 1997; Mills *et al.* 2003). The link between substance use and recidivism may manifest itself in several ways – through drug-defined crimes (e.g., possession and selling), drug-related offences (in which people are financing their drug habit), and internal behaviours in which drugs and crime are a part of the individual's lifestyle (Walker, 1994, p. 257). Walker (1994) states that people who go into drug treatment programs commit fewer crimes than they did before they sought treatment. In addition, French, McGeary, Chitwood, McCoy, Inciardi, and McBride (2000) found that both men and women were more likely to recidivate if they abused drugs. Despite controlling for age, gender, survey year, and degree of criminal activity, this relationship was reliably observed by French *et al.* (2000) across both gender and age, consistent with the current results of this study.

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Conversely, there is also evidence that drug use does not cause criminal activity, or repeated activity. According to the National Household Survey (USA), there existed 12.6 million people in 1991 that either used or abuse drugs, and few of them became addicts or career criminals. Rather, much of this drug use is recreational (Walker, 1994, p. 258). The difference between drug use and drug abuse may change depending upon the research definition. Both alcohol and drugs can be used recreationally; however both can be abused as well. According to Moelker (2004), a substance may become abused when the inherent risks involved are not taken into account, or the substance is taken for the wrong reasons, such as depression.

In addition, although there is a strong relationship between substance use, crime, and recidivism, drug use may be a critical result, rather than cause, of criminal behaviour (French *et al.*, 2000). In either case, drug use is an important factor when examining the link between crime and recidivism. "Alcohol is the drug that is most prevalent in individuals committing violence…Experimental studies have repeatedly demonstrated that alcohol causes an increase in aggressive behaviour, in both animals and humans" (Monahan, 2003, p. 34, quote from Miczec *et al.*, 1994).

1.32 Age and Recidivism

The age at which a person begins committing crimes is said to be predictive of future offending and recidivism. In particular, age at first offence in juveniles is said to be one of the greatest predictors of serious future offending (Piquero & Chung, 2001; Corapcioglu & Erdogan, 2004; Bonta *et al.*, 1995; Gendreau *et al.*, 1996; Heller & Ehrlich, 1984; Cottle, Lee, & Heilburn, 2001). A younger age at first offence may be

predictive of greater criminal activity simply because a person has a longer time frame to commit crimes, and the more crimes are committed by an individual, the more serious they tend to become over time (Sampson & Lauritsen 1994).

It should be noted, however, that a person's age at first offence might interact with other variables to determine recidivistic risk. For instance, low social status may decrease the age of an individual's first offence, and, in turn, onset may be enhanced by delinquent peers and labelling of one as deviant, especially in young men (Tolan & Thomas, 1995, p. 178).

Age and recidivism can be difficult and timely to study as many of the primary studies conducted to establish the link between age at first offence and crime have involved long and detailed longitudinal examinations, while the data synthesized in the current study involved primarily case-control studies, or short-term follow-up of adult, previously incarcerated individuals.

1.33 Marital Status and Recidivism

In adulthood, the major social tie is marriage (Teevan & Hewitt, 1995, p. 142). In men, marriage inhibits criminal behaviour (Sampson & Laub, 1990), and reduces the risks of suicide (Hasselback, Lee, Mao, Nichol, & Wigle, 1991), drinking problems (Temple, Fillmore, Hartka, Johnstone, Leino, & Motoyoshi, 1991) and mental illness (Williams, Takeuchi, & Adair, 1992). Although data was unavailable for women and thus could not be included in this study, previous studies suggest that these positive effects may not be present for women, due to loneliness among unemployed wives, as

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well as the stress from satisfying the demands of both work and home (Teevan & Hewitt, 1995).

1.34 Static-Dynamic Dichotomy

The static-dynamic dichotomy was first developed by Andrews and Bonta (1994) in order to identify risk factors of recidivism. Static factors (i.e., age, previous convictions, criminal history and age of onset) are aspects of the offender's past that are predictive of future recidivism but are not prone to change over time (Gendreau, *et al*, 1996, p. 575). Dynamic risk factors or otherwise referred to as criminogenic needs include antisocial personality, behaviours and values (Gendreau *et al.*, 1996, p. 575). These factors are used as targets for treatment because they are able to change over time. Dynamic factors were developed in order to rehabilitate rather than punish inmates. This concept is used to measure what types of behaviours place an inmate at the greatest risk of re-offending (Ward & Stewart, 2003). In other words, dynamic factors are seen as specific individual types of behaviours that can be altered at the cognitive behavioural level in order to reduce re-offending. Such risk behaviours are individually assessed and may include drug and alcohol use or abuse (Ward & Stewart, 2003, p. 127), or, an example of a criminogenic need outlined by Bonta *et al.* (1995, p. 283) is poor anger control.

1.4 Recidivism and Gender

Recidivism research has mainly been dedicated toward the knowledge of the male offender, there is still little known on the subject of the female offender. Female

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recidivism remains one of the most under researched topics involving women today (Bonta, Harman, Hann, & Cormier, 1996; Piquero & Chung, 2001). One of the underlying causes related to the misrepresentation of recidivism amongst women by the correctional system may be due to the standardization of many of the risk scales used to measure both recidivism and criminogenic needs. The scales used to measure a person's probability of recidivism are based predominantly on male offender populations (Bonta *et al.*, 1995). Since rehabilitation and reduction of recidivism are among the primary goals of any correctional institution, it is important to correctly establish what works best for both men and women in order to curb the phenomenon of reoffending. Moreover, once the factors underlying female recidivism are more clearly understood, programs can be tailored to target the specific needs of the female inmate.

One of the principal reasons for the lack of attention to women in the criminal justice system as a research topic is due to the perception of female offenders as a minimal risk to society. This apparent low risk is based primarily on the fact that women tend to pose a smaller risk to the general public in terms of violence toward strangers – it has been reported that almost 85 percent of the people arrested for violent crimes towards strangers are males (Scott, Schwartz, & VanderPlatt, 2000). In addition, men tend to have longer and more serious criminal histories than their female counterparts. For instance, a greater proportion of men are arrested for robbery, homicide, sexual offences, and property offences than women (Loucks & Zamble, 1994).

These statistics of female crime have lead to the widespread use of male data for research on both violent crimes and recidivism rates – women are rarely considered when looking at rates of crime (Giddens, 1991; Hannah-Moffat & Shaw, 2001; Hubbard, &

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Pratt, 2002; Piquero, & Chung, 2001; Rapp-Paglicci, Roberts, & Wodarski, 2002; Simourd & Andrews, 1994).

Although women tend to pose a smaller risk to society in terms of violent crime, they still have high rates of recidivism and thus must be included to obtain a comprehensive understanding of the underpinnings of this phenomenon. For example, Wilson, Quinn, Beville, and Anderson (1998) estimated that 50 to 85 percent of the incarcerated women in the United States recidivate upon release. In addition, the female inmate population in the United States has grown over 200 percent in the past decade, mainly due to the increase in female drug related offences. Currently, women are among the fastest growing population in the United States correctional system (Hubbard, & Pratt, 2002; Pelissier *et al.*, 2003; Piquero & Chung, 2001).

In Canada the number of incarcerated women has also increased. Between 1981 and 1998 women in Canadian prisons has increased by 62 percent (Correctional Services Canada, 2004). The most common reason for this increase was due to warrant committal by the courts, 79 percent to 92 percent of the women in Canadian prisons are there due to an outstanding warrant (Correctional Services Canada, 2004). The most frequent crimes committed by women in Canada are: theft (27.2 percent), violation of liquor acts (12.4 percent), assault (11.5 percent), and fraud (9.7 percent) (Borich, 1997, p. 15).

These statistics can create a strong impetus for uncovering the causes of female crime and the reasons for recidivism. Understanding the impact of gender on recidivism is critical since women may have different needs than men, especially in terms of treatment program success. For instance, many incarcerated women are identified as having a need for programs that target their mental health needs, as well as programs that

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will help them to overcome abusive histories. Furthermore, the population of incarcerated women is more diverse culturally and racially than the larger population of men (Hannah-Moffat & Shaw, 2001, p. 2).

1.41 *Double Deviance*

Women for the most part suffer from more intense societal scrutiny over criminal behaviour than men. Most women who commit crimes fall under a category called "double deviance" (Copeland, 1997, p. 186). Copeland was one of the first authors to use the term, which refers to women who fall outside of their perceived role as mothers, daughters and sisters and have now become criminals. Double deviance was originally used to describe the stigmatization that women drug addicts faced. In Copeland's study on female drug addicts, one of the most common reasons for not getting treatment is that women felt they were more stigmatized than men. "Women are looked down upon anyway and even more so when they have a problem that encompasses lack of moral and social restraint with overtones of sexual promiscuity and poor maternal instincts" (Copeland, 1997, p. 186).

Double deviance has its roots in the literature on stigmatization. Irving Goffman is one of the better-known authors on stigmatization. In his book *Stigma* (1963, p. 3) Goffman used the term stigma to "refer to an attribute that is deeply discrediting". Inherent to this idea is the notion that a stigma is something that deviates from society's perception of what is normal. One of the largest problems of being stigmatized is the label that is attached to an individual. This label can severely limit the individual's ability to fully participate in the everyday life of society, such as holding a job, having a

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home, getting access to any needed services and enjoying mutually supportive relationships with family and friends. In effect, the stigmatized individual who is denied legitimate social roles can eventually adopt a deviant social role, which can lead to repeated criminal activity. (Clinard & Meier, 1992, p. 107).

The term double deviance has now found its way into the literature on crime and recidivism. Wilson *et al.* (1998, p. 62) state that women tend to have very high rates of recidivism after leaving prison because of "double deviance". The authors describe this as women are faced with a societal perception of purity and goodness and if a woman should commit a crime, then she is said to be both stigmatized for committing that crime, as well for breaking the societal norm of how a woman should act. Women are expected to be more socially compliant than men, and although there are variations in this stereotypical expectation for women such as race, class, and community status, still none of these factors are as strong as gender (Julian, 1993, p. 345). Thus, women who are returning to the community after being incarcerated may face a stigmatization and hardship from the community, and lose the very support that is needed for success. This may happen by virtue of the label and can result in isolation from non-stigmatized groups in society.

1.5 Factors Which Affect Female Recidivism

Factors that may affect female recidivism are unique in several ways over their male counter parts. Take for instance childcare responsibilities. For this reason, female recidivism should be both targeted and treated independently from male recidivism.

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Bonta et al. (1995) found that age and past criminal history were predictive of recidivism in women (as is the case for men), however the type of offence (violent or non-violent offences) committed by women was not associated with recidivism. In addition, women who were dependent upon the government for assistance (welfare) or an illegal means of acquiring income had a higher rate of recidivism than those who were not dependent. Some of the variables that have increased the rates of recidivism in men were not found to be significant among women. These variables included a history of juvenile delinquency, use of a weapon involved in the offence, offence committed with peers, and alcohol and drug use (Bonta et al., 1995).

Wilson et al. (1998, p. 62) discuss how recidivism in women is often attributed to individual characteristics. According to Wilson et al (1998), the typical female offender is usually young, unskilled, not married, yet has children, is both economically and educationally disadvantaged, a high school dropout and of low socio-economic status. Although limited data is available regarding the female offender, the little data that does exist corroborates this profile (e.g., Bonta et al., 1995; Archwamety & Katsiyannis, 1998).

One of the leading causes of criminal behaviour (not necessarily recidivism) in women is past sexual abuse, usually committed at the hands of a family member or close relative (Bonta, 1998). According to Comack (1996, pp. 36-37), approximately 68 percent of women in the Canadian prison system have been sexually or physically abused at some point within their lives. This percentage rises drastically when looking at Aboriginal women in prison, close to 90 percent have suffered physical abuse and over 60 percent experienced sexual abuse, usually at the hands of family members.

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Although, some of the characteristics of female prisoners are the same as men, some important factors differ greatly. For instance women in prison are often mothers and the primary caregivers of their children. They are for the most part financially dependant, and more so than men unemployed at the time of their arrest. They may also have strong addictions to drugs and alcohol while others have physical and mental health issues (Hannah-Moffat & Shaw 2001). These differences are extremely important when looking at policy interventions for designing programs that will be more equipped to deal with women and their special needs.

1.6 Women's Experiences That Differ from Men's

In order to gain a clear understanding of male and female recidivism, one must first look at the types of crimes committed most often by women and men, the reasons why they commit crimes and the nature and extent to which women re-offend (Banks, 2003). This type of research is important because in order to create gender specific treatment programs, one must first know where and how men and women are different when committing crimes. According to much of the data on female crime, women most often commit property crimes, drug offences and fraud (Banks, 2003, p.42). Banks (2003, p. 42) also found that there is not a notable difference in crimes that pertain to assault, larceny-theft, driving under the influence of alcohol and drug offences between men and women. Thus, men and women tend to commit the above crimes equally.

Banks (2003) found that according to the Canadian Bureau of Justice, 22 percent of all crimes committed in 1998 were at the hands of women, of that 22 percent

approximately 17 percent were for violent crimes, with the highest rate of 20 percent was for aggravated assault. However, more serious crimes such as murder, rape, manslaughter the rate fell to only 1 percent. Men almost exclusively were convicted for the majority of homicide offences, and when women are convicted for homicide it is almost always aimed toward a male partner such as a husband, ex-husband, and boyfriend (Banks, 2003, p.42).

1.61 Separations from Families

Separation from families is an important aspect of an experience of incarceration for women, more so than men. Data indicates that four out of five women are mothers and three out of five men are fathers (Banks, 2003). In addition, women are for the most part the sole guardians of the children. Thus women may have an added stress over men while incarcerated because they may be concerned for the welfare of their children. Banks (2003) has outlined some stress factors that women face regarding their children once incarcerated. Primarily women are concerned about how their absence will affect their children's well being and secondly, the financial difficulties the family will face once the mother is incarcerated. In addition, many mothers fear that they will have to tell their children about their incarceration, and what had occurred in order for them to be there. Many women lose legal guardianship over their children once incarcerated. Since some women are the primary caregivers, once incarcerated, the children may be left in the hands of foster care.

Moreover, once a woman is released from prison, they then encounter the stress of having to re-establish their role as mother, and the difficulty of this task is said to

depend on the length of time served in prison (Banks, 2003; Wilson *et al.*, 1998). This difficulty is summed up well by Sugar and Fox (1990, p.16), as they quote a female inmate as saying, "I had to learn to be a mother all over again but this time with bigger children. I can't relate to them now I have no patience".

1.7 Violence

Arguably, the domain of criminal conduct in which there is the largest gender divide is in the use of violence. This disparity underscores the importance of studying both violent and non-violent recidivism in both genders. Throughout the literature there have been many different explanations as to why violent behaviour exists. Much of the rhetoric on violent behaviour encompasses trying to understand the personality characteristics of the individual offender. Thus, the main focal points for studying violent behaviour are by looking at pathological personality disorders and abnormal psychology. According to Holmes and Holmes (1996, p. 36) there are five basic components that make up an individual's tendency towards violent behaviour: biology, culture, environment, common experiences and u ique experiences. One of the main reasons violent offenders should be singled out fr othe ffenders is that their behaviours are said to be individually unique a _ dependant upon gender. Many of these unique qualities are said oe found in a person's values and m (Holmes & Holmes 1996). In addition, according to Athens (1980), people h ld violent self-images te u to react to situations in a violent manner.

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There is a difference between aggression and violence, according to Sumner, (1997, as cited by Comack & Balfour, 2004, pg. 52) "Aggression is an action we accept, violence is an action we do not normally condone". Aggression in men has become so common that that it is now seen as an expression of masculinity (Comack & Balfour, 2004). When a young man is confronted by another male and violence occurs they can also be acting out a particular "masculine script" (Comack & Balfour, 2004, p. 51). A masculine script is a type of action (aggressive behaviour), that may lead to violence. Comack and Balfour (2004) refer to a masculine script as a way of resolving interpersonal conflicts or as a way of protecting their honour. This is a behaviour that is most common in men and not women. Moreover, violent aggression is heightened by an audience (such as peers) and the use of alcohol (Comack & Balfour, 2004).

It is commonly claimed that the best predictor of future violence is a violent history (Lang, Holden, Langevin, Pugh & Wu, 1987, p. 181). Outlined below are some of the behavioural factors leading to violent criminal behaviour in men according to (Lang et al., 1987). These included hostility, self-consciousness, a lack of prosocial skills (i.e., the opposite of antisocial behaviour – constructive and non-detrimental means of attaining social status and integration), family behavioural problems, and personality traits such as extroversion, neuroticism and psychoticism. However, detailed discussion of all of the behavioural predictors of violent behaviour is beyond the scope of this study. As such, discussion of violence will be restricted to those areas in which there appears to be the largest gender differences.

For the most part women tend to be less violent than men and women have less violence in their past and current criminal behaviour than men. Women are usually

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convicted of fewer crimes, and have a less extensive criminal background than their male counterparts. In addition, the crimes women are most often convicted of are minor offences (Austin & Irwin, 2001; Shaw, 1994). The most common types of crimes committed by women according to Comack (1996, p. 17), are crimes against the person such as assault, robbery and manslaughter, crimes against property, which include theft, fraud and shoplifting, public order offences such as mischief and arson, and drug and alcohol related offences such as drunk driving. Furthermore, many of the women who are convicted of a serious violent crime such as murder, their victims are usually long-term partners, rather than a stranger on the street, thus violent females tend to pose a less serious risk to the general public (Austin & Irwin 2001).

Felson (2002, p. 24) states that one of the reasons why men tend to be more violent than women is due to gender differences in self-image. Gender differences in aggression and violence are partly due to gender role identities. For instance, men and boys tend to place more importance on power, courage, and risk-taking behaviours. As a result, if a man's identity is under attack, he is more likely to respond violently than a woman would in the same situation. Much of the violence committed by men can be attributed to their desire to control others and the situation around them. According to Felson (2002), both men and women use control in stressful situations, however, men tend to control through violence whereas women tend to control the situation verbally. Men also tend to have higher amounts of impulsive behaviour than women. Impulsive behaviour usually occurs when an individual is under an emotional state, highly stressed or under the influence of drugs or alcohol (Felson, 2002, p.214).

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Alcohol use is said to be strongly associated with the male identity. Men are reported to drink and get drunk twice as often as women (Felson, 2002, p.25). The majority of violent criminal acts are committed under the influence of substances such as drugs and alcohol. These criminal acts may be a direct result of substance use that may increase the probability, and intensity of aggressive behaviour (Hillbrand, Foster & Hirt, 1991, p. 419). Since substance use is intimately tied to both violence and gender, studying the consumption of these substances may provide critical insight into some of the determinants of the gender divide regarding violent criminal behaviour.

1.71 Violence as a gendered concept

As outlined above, there are several important ways in which violence can be viewed as a distinct phenomenon across the genders. Given these differences, what can be said about the origins of these differences within society? To some extent, these origins may lie in the social construction of gender, and in violence itself as a gendered concept.

Gender is socially constructed, and because of this people tend to classify individuals and groups into specific categories in order to understand them (Gilbert, 2002). Such broad categorization becomes problematic, however, when dealing with women and aggression or violence. Violent behaviour in women tends to fall outside of the "normal" realm of how a woman should act. In turn, this violation of the social norms regarding the role of the woman in society may critically affect the prospects of violent women for rehabilitation and reintegration into society. Thus, analysis of the

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social discourses violent women face may be critical to understanding women, violence and recidivism.

The gender differences surrounding the social discourse of violence may be profound – affecting many aspects of a violent woman's experience with the criminal justice system from conviction to sentencing, as well as their prospects upon release.

In general, social tolerance for aggression is gendered (Gilbert, 2002). Men who are either aggressive or violent are seen as exercising their masculinity, whereas women who are violent are seen as mad, crazy, or masculine, contradicting social ideals of femininity (Gilbert, 2002). Many people see women as not being capable of violence, so their crimes are either sexualized (prostitution), or women are constantly seen as the victims, rather than the predators (Gilbert, 2002). Women have had a mixed societal view point over the years, leading to the perception that:

> We have, then, women as innocent, gentle, caring, nurturing, and
>
> incapable of committing violence – the angel, the mother, the virgin,
>
> the Madonna, and yet still the 'other'. We also see women as evil,
>
> sexual, dangerous, the vampire, the black widow, the whore, the
>
> vamp, the 'other'. The woman who is capable of aggression and
>
> violence becomes the masculine woman, the lesbian, the 'other'
>
> (Gilbert 2002, p. 1293).

This gender difference in the tolerance of society for violence leads to very different outcomes for violent women in the criminal justice system when compared to men. These differences typically manifest in one of two ways. This abhorrent behaviour

on the part of a woman may lead to a much more lax treatment in the courts, due to the perception of woman as "normally" non-violent individuals. An example of this view can be seen in a quote by a criminal court judge "...it's difficult to send a mature woman to prison. I keep thinking....hey! She's somebody's mother" (Julian, 1993, p. 343).

Alternatively, the perceived abnormality of violence among women may lead to violent women being treated with complete disregard. As Gilbert (2002, p. 1294) states, these crimes raise a societal fascination because women are seen as crossing the line of gender and engaging in masculine activities. This, in turn, may increase both violent crime by women and the rates of their recidivism because they are not getting the help that is so needed.

This violation of gender norms may, in turn, have lead to the distinct lack of research on understanding, the preventing and the policy implications surrounding the violent criminal behaviour of women. Gilbert (2002, p. 1275 as quoted by Ann Campbell 1993) stating that:

> maleness and aggression have become linked to the point where it
> is easy to forget about women's aggression. It takes place far less
> often than men's, and rarely makes headlines. It is private,
> unrecognized and frequently misunderstood. [This discrepancy
> exists despite the fact that] It looks and feels different from
> men's...

Gilbert (2002) states that in order to understand that both men and women are in fact capable of violence there needs to be a change within the negative discourse used to deal with women and violence. If this discourse does not change, then women who are violent will never

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receive the proper treatment (either in or outside the penal system), nor will research evolve in terms of properly understanding why women are violent and what we as a society are going to do about this growing phenomenon.

1.8 Research Rationale

Based on the discussion outlined above, it seems clear that there exists a need for analysis of the predictors of recidivism, since scales used to measure a person's probability of recidivism are based predominantly on male offender populations, and thus ignore potential gender differences. This lack of data exists despite the fact that women have high rates of recidivism. Moreover, an analysis of the determinants of recidivism in females may be timely since the number of incarcerated females has recently increased dramatically in both the United States (e.g., Wilson et al, 1998) and Canada (Correct* ∙l Services Canada, 2004).

A pervasive argument can be constructed for both the technique and the subject matter of such a synthesized examination. This argument is based on the promise for this research in future prevention of recidivism, the utility of meta-analysis as the optimal technique for such an analysis, and what particular research questions are suited to analytic investigation.

1.82 Meta-Analysis as an Optimal Methodolo*

Meta-analysis is a technique * ∙ι a long history and growing popularity. Although the term meta-analysi* was first used in 1976 at the American Educational

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Research Association (Rosenthal & DiMatteo, 2001), the synthesis and analysis of previous research dates back to 1904, when Karl Pearson (1904), statistically pooled several findings to establish the effectiveness of inoculation against smallpox. Despite this groundbreaking analysis, the meta-analytic technique has only gained general acceptance and popularity within the past 30 years. Much of this recent recognition stems from the many advantages that this technique affords.

A meta-analysis can be seen as more than simply a statistical technique, rather,

> ...it is a methodology for systematically examining a body of research, carefully formulating hypotheses, conducting an exhaustive search and establishing inclusion/exclusion criteria for articles, recording and statistically synthesising and combining data and effect sizes from these studies, searching for moderator variables to explain effects of interest and reporting results... (Rosenthal & DiMatteo 2001, p.62).

Using the meta-analytic method, eligible research studies are viewed as a population to be systematically sampled and surveyed. Individual study results, along with any moderator variables (e.g., race, gender and age) are then quantified and coded, and assembled into a database that is statistically analyzed (Lipsey & Wilson, 1993). The main statistic presented in a meta-analysis is the mean effect size, which is meant to reflect the average individual effect size across the sample of studies included in the synthesis, as indexed with the effect size estimate d (Cohen, 1988). Through the use of this index, meta-analysis provides tools for the analysis of both the magnitude and

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consistency of effects. A meta-analysis in this case will prove to be useful in that it will help overcome some of the controversy found throughout this body of literature.

A meta-analysis is a useful tool in order to study recidivism for many reasons. Rosenthal and DiMatteo (2001, pg. 59) summarize these advantages as:

> (a) revealing the "landscape" of a research domain, (b) keeping statistical significance in perspective, (c) minimizing wasted data, (d) becoming intimate with the data summarized, (e) attending carefully to how independent and dependent variables are measured and operationally defined, (f) asking focused research questions, and (g) finding moderator variables.

Moreover, they make a convincing claim that any of the limitations of meta-analysis are also inherent to (and fewer in number than) traditional, non-quantitative, narrative reviews of the literature. As summated by Rosenthal and DiMatteo (2001, p. 69),

> At this point in the extensive proliferation of research…anyone who is considering a review of the literature has little justification for not doing it quantitatively. All the valuable aspects of narrative reviews can be preserved in meta-analysis, and quantitative features can be added.

1.83 Research Questions

Given the clear need for a synthesis of the accumulated data concerning recidivism, and the advantages of approaching such a synthesis using quantitative, rather than conventional, review techniques, the specific goals of this analysis can be outlined. The current analysis will be guided by four essential questions:

(1) To what degree can actuarial (i.e., demographic/historical) variables expose a "profile" that can distinguish violent and non-violent recidivists to provide unique predictors of violence?

(2) To what degree can these same variables distinguish those offenders most likely to recidivate, independent of violence?

(3) How are these predictors of both violence and recidivism affected by gender?

(4) How do moderator variables across studies (i.e., study characteristics such as the country in which the sample was drawn or the length of time that participants were followed longitudinally) affect the results that these studies typically report?

Addressing these questions promises to add critical data to understanding the complex interplay between gender and violence and their impact on the probability that an incarcerated individual will reoffend.

2. MATERIALS AND METHODS

Standard meta-analytic techniques will be employed in this review of the literature on the effects of gender and recidivism (see Cooper & Hedges, 1994; Hedges & Olkin, 1985; Rosenthal, 1995; Wolf, 1986). If this analysis shows consistency in any variables across studies, it may provide a more secure foundation from which to argue for specific types of treatment or rehabilitation programs. In addition, a meta-analysis provides tools for the analysis of magnitude and consistency of effects, as indexed with the effect size estimate d (Cohen, 1988). This index is meant to reflect the degree to which the dependant variable is present in the sample group or the degree to which the

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null hypothesis (a statement that there is no relationship between variables) is false (Cohen, 1988). As violent offences appear to reflect gender differences, violent and non-violent offences will be separated. In mathematical terms, d is the difference between two means in pooled standard deviation units. The effect size would be equal to the average recidivism rates for violent offenders versus the average recidivism rate for non-violent offenders, divided by the pooled standard deviation. This will be done twice, once for men and then once for women. The pooled standard deviation can best be explained as nothing more that a weighted average of the two groups.

Eligible research studies (see below for criteria) are viewed as a population to be systematically sampled and surveyed. Individual study results, along with any moderator variables (e.g., race, gender and age) are then quantified and coded, and assembled into a database that is statistically analysed (Lipsey & Wilson, 1993). In addition, correlating moderator variables with the effect size can separate relationships of subject or study characteristics that may influence the magnitude of the effect size between groups.

2.1 Study Inclusion Criteria

Studies were included provide they met a number of criteria. Foremost, studies had to include recidivism rates for men and women, or only men or only women, as well as demographic variables (e.g., age, race, education) independently for both men and women. In addition, the above statistic had to have separate estimates given on violent crime, for example, if a study was unable to distinguish between violent and non-violent crime it was excluded. For the purpose of this study violent crime will be considered as

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any crime against a person, such as robbery, assault, and homicide, use of a weapon and threats of violence (Bonta *et al.*, 1998). Studies that have used a complete breakdown of all violent crimes (e.g., Archwamety & Katsiyannis, 1998) were preferred because it was simpler to extract all violent crimes. However, all studies were used in which a detailed breakdown of both gender and violence was present, in total there were 49 published studies that fit this criteria and were used for this meta-analysis.

When considering violent crime, sexual assault, violent sexual assault and molestation were excluded. This exclusion was necessary for two reasons beyond limiting the study to a feasible amount of data. Foremost women are almost non-existent in the literature for committing violent sexual assaults; rather, they are almost exclusively the victims of such acts. In addition, the recidivism rates for sexual offences are harder to measure because of the high rate of unpredictability of the statistic (many of which are vast underestimates), because so many of the cases go unreported by the victim (Matthews & Pitts, 1998, pg.5). Additional inclusion criteria were that studies were original studies written in English and published in peer-reviewed journals, and included statistics that lend themselves to conversion to Cohen's *d* (see below).

2.2 Literature Search

The systematic literature review began with a manual search through journals publishing a high volume of relevant papers as recommended (Cooper & Hedges, 1994). This was completed with every issue year by year covering all relevant publications from 1970 to 2004 for the following journals: *British Journal of Criminology, , Criminology,*

Crime and Justice, Probation Journal, Prison Journal, Psychological Bulletin, Journal of Substance Abuse and Treatment, Journal of Child and Family Studies, Journal of Deviance, Journal of Psychology, Law and Psychiatry, Crime and Delinquency, The American Journal of Criminology, The American Journal of Social Psychiatry, Journal of Interpersonal Violence, Journal of Consulting and Clinical Psychology, Psychiatric Research, Child Abuse & Neglect, science, and Forensic Science International. In addition, to reduce the likelihood of bias in the manual search, potential studies were also located using the *PsychInfo, Medline, Pub med, Sociofile, and Science Citation Index* databases. The key words used in the database search were "recidivism", "recidivism and violent crime", "violent crime and women", "gender differences and crime", "re-offending", "assault", "men and assault", "men and violent crime", "women and assault", "women and violent crime", "gender differences and prison", "failure" and "recidivist". As well a full investigation was done on all of the references of each article. Research began in February 2004 and ended in December 2004. Studies were obtained through the libraries of Lakehead University, the University of Toronto, and through interlibrary loan.

The current analysis resulted in 65 effect sizes calculating contrasts between violent recidivists and non-recidivists (including 57,863 males and 19, 967 females), and 60 effect sizes contrasting violent recidivists with non-violent recidivists (including 16, 112 males and 2,255 females). These effect sizes were calculated from the 49 published studies that met the criteria for inclusion in the present analysis (see Appendix A).

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2.3 Dependent Variables

In all studies that met the preceding inclusion criteria, several dependent variables were recorded. The purpose was to include as many variables as possible from the studies, and if one study has more than one variable, then the effect size of each variable went into this analysis. Some published meta-analyses have opted not to include multiple contrasts from a single study (e.g., Kulik & Kulik, 1982; Harris & Rosenthal, 1985), while several others have (e.g., Smith & Glass, 1980; Glass, McGaw, & Smith, 1981). The current study will include multiple contrasts based on many different variables. In the formula below, violent recidivists were always used as the experimental group, such that positive effect sizes indicated that violent recidivists were (on average) greater than their comparison group (i.e., either non-recidivists or non-violent recidivists) on the dependent variable. All measures were quantified and analysed at the aggregate (rather than individual) level. In addition, the full study reference and any moderator variables were recorded for moderator variable analysis (see below). Each dependent variable was extracted from its original reference and quantified as detailed below.

2.31 Proportion of Recidivists

The number of recidivists was quantified using the proportion of the entire study population that fit within each of the contrasted categories (i.e., violent recidivists vs. non-recidivists, and violent recidivists vs. non-violent recidivists). This was done in all studies in which random populations were used. In this case, random population is meant

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to describe a population which was selected and followed prior to release, with no knowledge beforehand of which individuals would recidivate and which individuals would not (i.e., longitudinal studies rather than case-control studies in which recidivists and non-recidivists were selected *a priori*).

2.32 Criminal History

The degree of criminal history was quantified based on indexes of the number of previous crimes. This index typically took the form of number of previous convictions, although indexes based on the number of arrests, or more complex indices taking into account the severity of the crime were also seen. Although these indexes may be distinct, the use of a method of standardization (i.e., conversion to an effect size statistic) makes these disparate indexes comparable, as long as they are measuring the same construct (in this case, the amount/degree of previous criminal activity).

2.33 Violent Criminal History

In any cases in which criminal history was separated by the type of offence, violent offences (i.e., any non-sexual offences against a person, such as assault, battery, weapon offences, etc.) were recorded separately from general (i.e., non-violent) ones. As was seen in reports of criminal history in general, violent criminal history was typically quantified as the number of previous convictions, although other indices were also seen (e.g., the number of arrests or severity of previously committed crimes).

2.34 Drug Use

In most cases, drug use was quantified based on the proportion of each population (i.e., violent recidivists, non-violent recidivists, and non-recidivists) that had self-reported histories of substance use or abuse. This variable was also occasionally quantified based on the proportion of individuals in some form of drug-treatment program.

2.35 Alcohol Use

In any cases in which substance use among each population (i.e., non-recidivists, violent recidivists, and non-violent recidivists) was recorded with distinct breakdown of alcohol use vs. the use of other drugs, effect sizes were calculated separately based on the amount of alcohol use. This was typically reported as the amount of alcohol consumed by individuals in these groups, or the proportion of people in each of these groups with self-reported alcohol problems.

2.36 Employment

Employment history was recorded, typically as the number of years employed over a limited time span (typically 1-5 years) prior to arrest or conviction. This variable was also occasionally quantified on an ordinal scale intending to reflect the consistency of each individual's employment history. Thus, these scales typically ranged from categories such as "never employed" to "having stable employment".

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2.37 Marital Status

This variable was quantified as the proportion of individuals within each group that were married (and occasionally including unmarried participants who report having a spouse and living as common law) vs. those that were not.

2.78 Education

The level of education was recorded as the total number of years of schooling. That is, for those participants with grade- or high-school education, the latest grade completed was recorded. In those participants with post-secondary education, the number of years of post-secondary education plus 12 (the number of years of primary and secondary school) was recorded.

2.39 Socio-economic Status

Socio-economic status was typically quantified based on the mean pre-incarceration income level. This variable was also occasionally quantified based on an ordinal scale (e.g., poverty, low-middle class, middle class, upper-middle class, etc.) based on consolidated information about the stability of employment and job description.

2.310 Age

The mean age of individuals within each group (i.e., non-recidivists, violent recidivists, and non-violent recidivists) at the time of their index offence (i.e., age at first offence) was quantified in years for calculation of effect sizes.

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2.311 Antisocial Personality

This factor was typically quantified based on the mean scores from evaluation and/or standardized testing by psychological or other staff prior to trial. Data from such tests are typically reported in terms of effect sizes. Antisocial behaviour was also sometimes quantified based on a *post hoc* scoring of the records of each inmate's behaviour during incarceration.

2.312 Sentence Length

The length of the latest sentence served (i.e., the sentence currently being served at the time that participants are recruited for longitudinal examination) was quantified by number of months for calculation of effect sizes.

2.313 Depression

Similar to scores for anti-social behaviour, depression was quantified either via the mean scores from evaluation and/or standardized testing by psychological or other staff prior to trial, or from scoring of the records of each inmate's behaviour during incarceration.

2.4 Effect Size Calculation

If the research paper met the preceding criteria, the *d* statistic (Cohen, 1988) was derived for each comparison from means and standard deviations whenever they were present using the following formula (see Wolf, 1986):

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$$d = \frac{\overline{x_1} - \overline{x_2}}{Sd_{pooled}}$$

In the above formula, $\overline{x_1}$ denotes the experimental group (violent recidivists)

mean while $\overline{x_2}$ denotes the control group mean (non-violent recidivists). The pooled

standard deviation is Sd_{pooled}.

In addition to descriptive statistics (which allow the researcher to organize data in

a meaningful way), effect sizes were calculated from exact values for statistical tests [i.e.,

χ^2, t, F (one-way only) – see Wolf, 1986]. Inferential statistics allow the researcher to

make decisions about the characteristics of a population based on observations (i.e.,

statistically significant differences) of that population. All effect sizes were calculated

using the Effect size calculator (freely available for download at

http://mason.gmu.edu/~dwilsonb/ma.html), created by Dr. D. B. Wilson.

It is important to note that there exist many options for calculating effect sizes,

such as the logged odds-ratio (Lipsey & Wilson, 2001), and Rosenthal's r (Rosenthal &

DiMatteo, 2001). However, the most widely-used methods for effect size calculations

are based on the same family of variables – Cohen's d, and Hedge's g, and Glass's Δ (see

Rosenthal & DiMatteo, 2001, p. 71, for formulae and explanations). Although all of

these methods are widely used, Cohen's d has a distinct advantage over these other

means of effect size calculations. While all of these methods use the difference in the

mean of two groups in the numerator of their equation, only Cohen's d uses a pooled

estimate of the variance in the denominator.

This provides Cohen's *d* with a distinct advantage over measures such as Glass's Δ, which only uses the control group variance in the calculation. In situations in which the variance of the two groups is dramatically different, Glass's Δ will systematically over-estimate the size of the effect. In many cases, such as when dealing with clinical populations, it is known that the variance of the experimental group will be far larger than that of "normal" controls, and so Cohen's *d* is typically the measure of choice in these types of analyses (where one group will be very different from the other group). Based on this strength, Cohen's *d* was chosen for the current meta-analysis. Since there is very little data on many of these groups (especially female recidivists), it is probable that the variance of each of these groups will be dramatically different (at least there is no basis to assume comparable variances) and thus Cohen's *d* remained the ideal measure to use here.

2.5 Effect Size Weighting

In order to accurately average across studies that have large differences in the size of their samples (and thus their sampling error), it is necessary to weight the effect sizes gathered (Lipsey & Wilson, 2001). An effect size based on a larger sample is a more "precise" estimate of the population effect size, by virtue of the fact that the estimate from the larger sample size contains less sampling error. Hedges (1982) has shown that the optimal paradigm for weighting effect sizes across studies is by the inverse variance. This weighting incorporates the standard error (SE), which is a direct index of effect size

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precision. The inverse variance weight (w) for each study is given by the formula (see Hedges, 1982):

$$w = \frac{1}{SE^2}$$

Where the standard error of Cohen's d is given by:

$$SE = \sqrt{\frac{n_1 + n_2}{n_1 n_2} + \frac{d}{2(n_1 + n_2)}}$$

In the above formula, n_1 denotes the number of subject in the experimental population (i.e., either violent or non-violent recidivists), while n_2 denotes the sample size of the control (i.e., non-recidivist) group. Within this weighting paradigm, the mean weighted effect size and its associated SE are given by the following formulae:

$$\bar{d} = \frac{\sum(w \times d)}{\sum w} \qquad\qquad SE_{\bar{d}} = \sqrt{\frac{1}{\sum w}}$$

And the statistical significance of the combined effect size estimate is given by a Z-test:

$$Z = \frac{\overline{d}}{SE_{\overline{d}}}$$

2.6 Homogeneity of Variance Analysis

Homogeneity analysis tests the assumptions that all of the effect sizes are estimating the same population mean. If the distribution of the effect sizes is heterogeneous, then there are real differences between studies, that is, studies estimate different population mean effect sizes. Thus, a single mean effect size is not a good descriptor of the distribution. This is based on the statistic Q (see Lipsey & Wilson, 2001), which is distributed as a χ^2 (df = number of effect sizes-1):

$$Q = \sum w_i (d_i - \overline{d})^2$$

Gender differences are of particular interest in the current analysis. In order to assess the potential differences between these two groups, an analog to the one-way ANOVA utilizing Q (see Lipsey & Wilson, 2001) will be used to assess the homogeneity within each category (men versus women) and to assess whether a significant amount of variance is explained by this dichotomy. Briefly, a separate Q is assessed for each gender (i.e., male and female) individually. The sum of both group Qs = Q_{within} (df = number of effect sizes -2), while the $Q_{between} = Q_{total} - Q_{within}$ (df = 1). This procedure allows for

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both an assessment of the homogeneity of variance and the utility of the broad gender categorization implemented presently.

2.7 Moderator Variable Analysis

Effect sizes in which a significant amount of heterogeneity remained after partitioning the variance according to the procedures above were subjected to moderator variable analysis according to the methods of Lipsey and Wilson (2001). Briefly, this is done using an inverse-variance weighted regression. That is, a weighted least-squares multiple regression using the inverse variance weight (i.e., w as described in section 2.5) as the weighting factor. Put simply, this is a regression where each case is weighted based on the amount of sampling error in each study. A regression analysis was conducted (also based on Q), to assess the effects of moderator variables. In this analysis, Q is partitioned into a Q for the regression model (indicating if the model explains a significant portion of the variance across effect sizes), and a residual Q (indicating if the remaining variability across effect sizes is homogeneous).

The moderator variables used in this study were education, age, sentence length, follow-up, and ethnicity.

2.71 Ethnicity

In any case in which the ethnic composition of the sample was reported in a study, this factor was recorded. The ethnicity of a particular study was quantified based on the proportion of the sample population of each study that was Caucasian, Black, Hispanic, Asian, Aboriginal and "other". Thus, six moderator variables were created, consisting of

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each of the ethnic groups described, and the proportion of each sample that was a member of that particular ethnic group was regressed individually against any heterogeneous effect sizes. In order to prevent issues of multicollinearity, the "other" variable was not entered into the regression, since the proportion of subjects fitting the category of "other" is simply one minus the sum of the proportions of all other ethnic classifications.

2.72 Nationality

The nationality of a study was recorded based on the country in which the study was conducted. These nominal variables were "dummy-coded" for subsequent regression analysis (see Neter, Kutner, Wasserman, Nachtsheim, & Neter, 1996, for a detailed description of dummy-coding in multiple linear regressions). Nationality was divided into three categories, labelled "USA", "Canada", and "Other"

For both "USA" and "Canada", studies originating from that country were designated as "1", while studies originating from any other country were designated "0". Any study originating from a country other than Canada and the USA (i.e., England, Finland, Sweden, and Turkey) was used as a reference category. For nationality, two dummy variables, one is USA (if based on American population =1, otherwise = 0) and the other is Canada (if based on Canadian population =1, otherwise =0), have been used in the regression analysis.

2.73 Follow-up

The length of follow-up was quantified in terms of the number of months from the beginning of a study to the end (in the case of longitudinal data). In the instance that there was not a longitudinal study, the number of months were recorded based upon that particular researcher's discretion (as each study may be different) as to the amount of time over which a person's criminal record was followed.

3. RESULTS

As stated in section 2.2, the current analysis has produced 65 effect sizes contrasting violent recidivists with non-recidivist, and 60 effect sizes contrasting violent recidivists with non-violent recidivists. The results of the comparisons between each pair of groups (i.e., violent recidivists vs. non-recidivists as well as violent recidivists vs. non-violent recidivists) will be detailed in turn below. Within each broad category of contrasts, the analyses will begin with an assessment of the homogeneity of the variance within each of the variables described in section 2.3 (i.e., proportion of recidivists, criminal history, etc.). Following this analysis, the magnitude and direction of effects which are homogeneous across gender will be described. Any variables which demonstrated significant heterogeneity will be further examined. Initially, these factors will be analysed for any potential effects of gender. Further moderator variable analysis will then be conducted for any factor which either shows no significant gender difference, or remains significantly heterogeneous following gender analysis. Finally, any effect

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sizes which are available only for males will be described and (if heterogeneous) will be further analysed for the effects of any moderator variables.

3.1 Violent Recidivists vs. Non-Recidivists

3.11 Global Homogeneity of Variance Testing

Formal testing for homogeneity of variance revealed several distinct clusters of effect sizes (see Table 1). For drug use, the distribution of effect sizes was found to be homogeneous ($p_{Qtotal} > 0.05$ – see Table 1), indicating that these factors affect the probability of recidivism equally for both men and women. That is, while they appear to have a significant impact on an individual's risk of recidivism, they do so regardless of gender.

Unfortunately, in a second group of variables (i.e., alcohol use, antisocial behaviour, depression, marital status, employment, sentence length, and education), effect sizes were only available for males, and thus gender effects could not be assessed.

A third group of variables [i.e., proportion of recidivists, criminal history (both general and violent), socio-economic status, and age] show significant global heterogeneity (as indicated by a significant Q_{total} – see Table 1), indicating the need for further analysis. Each of these clusters of variables will be analyzed in turn below.

Table 1. Homogeneity of Variance and ANOVA-Equivalent Tests for Violent Recidivists
vs. Non-Recidivists.

	Q_{TOTAL}	df	$Q_{BETWEEN}$	df	Q_{MEN}	Df	Q_{WOMEN}	df
Violent Recidivists vs. Non- Recidivists								
Number of Recidivists	758.937***	23	139.242***	1	475.614***	16	144.081***	6
Criminal History	28.910**	12	1.353	1	--		--	
Violent Criminal History	--		--	1	26.138***	4	--	
Drug Use	6.831	4	--	1	--	--	--	
Alcohol Abuse	--	--	--	1	1.216	1	--	
Education	--	--	--	1	6.282	3	--	
Socio-economic Status	--	--	--	1	23.472***	2	--	
Age	164.129***	9	16.471***	1	129.464***	7	18.193***	1
Antisocial Behaviour	--		--	1	28.641***	3	--	
Depression	--		--	1	0.828	1	--	
Marital Status	--		--	1	0.152	1	--	
Sentence Length	7.396*	1	7.396*	1	--		--	
Employment	--		--	1	0.835	1	--	

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

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3.12 Magnitude and Direction of Effects which are Homogeneous across Gender

Examination of the effect sizes suggest that drug use is the factor which most consistently differentiates violent recidivists from non-recidivists, regardless of gender or other moderating factors ($d_{drug} = 0.278$, p < 0.001 – see Table 2). Thus, it seems that criminals who recidivate violently have more history with addictive substances. In addition, criminal history displayed a large positive ($d = 0.375$ – see Table 2) and a highly significant (p < 0.001 – see Table 2) relationship to violent recidivism which shows no significant gender differences ($Q_{between} = 1.353$; p = 0.245). Thus, it seems that those individuals with a greater history of criminal activity are more likely to recidivate violently, regardless of gender. However, this variable exhibited significant heterogeneity, and thus weighted regression was conducted to examine other moderator variables. Unfortunately, none of the moderator variables examined significantly explained the variance in this factor. Thus, a random effects model (see Lipsey & Wilson, 2001) was fit to this data.

In addition, sentence length showed no predictive ability in discriminating violent recidivists from non-recidivists (see Table 2). However, this variable exhibited significant heterogeneity, and without a greater number of available studies (n = 2), it is not possible to examine gender differences or the effects of other variables.

3.13 Gender Differences

An ANOVA-equivalent test was conducted to assess the degree in which the variance of heterogeneous variables could be accounted for by gender – one of the main contrasts within the current analysis (see Table 3). The proportion of recidivists showed

a significant gender difference ($Q_{between}$ = 139.2423; p < 0.0001 – see Table 1). When the effect sizes were separated on the basis of gender, a significant negative relationship was observed for both genders, although this effect was larger for women (d_{men} = -0.421, d_{women} = -0.962 – see Table 3). Despite the significance, regression must be conducted, since significant heterogeneity remained after separating the effect sizes based on gender (Q_{men} = 475.61416, Q_{women} = 144.081, p < 0.001 – see Table 1). In men, the variance in the proportion of violent recidivists was accounted for by changes in race (as indexed by the proportion of each study sample that is white), as well as the length of follow up, across studies (Q_{model} = 80.543, p < 0.001 – see Table 4). Thus, studies with the largest minority populations as well as the longest follow-up period report the greatest number of violent recidivists. However, it is likely that other unavailable moderator variables exist, since significant heterogeneity remained following moderator analysis ($Q_{residual}$ = 5.759, p < 0.001)

In women, follow-up also significantly predicted (Q_{model} = 15.051, p < 0.01 – see Table 4) the proportion of violent recidivists, but with the opposite trend – studies with the shortest follow-up found the greatest relative proportion of violent recidivists. It is important to note that this effect does not mean that there are fewer female violent recidivists over longer periods of time. The number of violent recidivists is not diminishing *per se*, as these are **independent** effects observed across a large number of studies. Across studies, the longer women are followed within a study the less likely they are to recidivate violently.

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Table 2. Effect Sizes Detailing Actuarial Differences Among Violent Recidivists vs. Non-Recidivists.

Variable	N_d[1]	Weighted[2]	Z
Proportion of Recidivists	24	**-0.529 (0.018)**	**-28.833***
Criminal History	13	**0.375 (0.036)**	**10.363***
Violent Criminal History	5	**0.290 (0.070)**	**4.127***
Drug Use	5	**0.278 (0.046)**	**6.078***
Alcohol Abuse	2	**0.272 (0.107)**	**2.546***
Education	4	0.058 (0.070)	0.828
Socio-economic Status	3	-0.116 (0.084)	-1.375
Age	10	**-0.096 (0.036)**	**-2.646****
Antisocial Behaviour	4	0.068 (0.074)	0.919
Depression	2	0.013 (0.100)	0.131
Marital Status	2	**-0.391 (0.108)**	**-3.622***
Sentence Length	2	0.129 (0.157)	0.824
Employment	2	-0.016 (0.106)	-0.1546

[1] N_d provides the total number of included effect sizes.

[2]   Data presented as mean weighted effect size (standard error).

* $p < 0.05$

** $p < 0.01$

***$p < 0.001$

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A similar trend was seen in age, which also showed a significant gender difference ($Q_{between}$ = 16.47; p < 0.001 – see Table 2). When effect sizes were separated based on gender, age showed no ability to differentiate male violent recidivists from non-recidivists (see Table 3), but showed a significant negative relationship (d = -0.282, p < 0.001) with violent recidivism in women. Thus, female violent recidivists tended to be younger than their non-recidivist counterparts. However, due to significant residual heterogeneity (Q_{men} = 129.464, p < 0.001; Q_{women} = 18.193, p < 0.001 – see Table 1), regression analysis was conducted. In men, the country in which the study was conducted in, as well as the follow-up length significantly predicted this variance (Q_{model} = 14.026 – see Table 4). Thus, while violent recidivists tend to be older than their non-recidivist counterparts, this difference was smallest in studies with the longest follow-up periods. This difference also tended to be smaller in studies conducted in the U.S.A. than in other countries (i.e., Canada, England, Finland, Sweden, and Turkey). Unfortunately, significant heterogeneity remained following the regression which could not be linked to any moderator variables ($Q_{residual}$ = 24.624 – see Table 4).

In addition, sentence length showed a significant ge   ifference ($Q_{between}$ 7.396, p < 0.05 – see Table 1). Which tells us that when the   izes were sep   ted based on gender, sentence length showed no significar   ience   violent recidivists and non-recidivists in men, but in w   .en a significant positive relationship was observed (d = 0.623). Thus, those   men serving longer sentences in prison were more likely to recidivate violen   . Unfortunately, a lack of sufficient sample size (n = 2) precluded more detailed regression analysis.

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3.14 Male-Only Effects

For several variables, effect sizes were only available for males. Of these variables, two differentiated violent recidivists from non-recidivists – alcohol abuse and martial status. Alcohol abuse showed a positive ($d = 0.272$ – see Table 2) and significant ($p < 0.05$ – Table 2) relationship with violent recidivists. Thus, violent recidivists (when compared to non-recidivists) have a greater history of alcohol use and/or abuse. Conversely, marital status showed a significant negative relationship with violent recidivism ($d = -0.391$; $p < 0.001$ – see Table 2). Moreover, this variable was the largest effect seen, with the exception of changes in the proportion of recidivists (see Table 2). Thus, it seems that violent recidivists are far less likely to be married than non-recidivists.

Similarly, violent criminal history has a significant positive ($d = 0.290$; $p < 0.001$ – see Table 2) effect on violent recidivism. Moreover, this relationship was significantly heterogeneous ($Q_{total} = 26.14$; $p < 0.001$ – see Table 1), and thus required subsequent regression analysis. This analysis revealed that the duration of follow-up explained this variance ($Q_{model} = 4.557$, $p < 0.05$ – see Table 4). Thus, violent recidivists have a greater violent criminal history than non-recidivists, and studies with longer follow-ups show this difference in greater magnitude. Unfortunately, significant heterogeneity remains in this distribution ($Q_{residual} = 4.108$; $p < 0.05$ – see Table 4), which cannot as yet be explained.

In addition, several of these variables, such as education, antisocial behaviour, socio-economic status, depression, and employment showed no significant relationship with violent recidivism (see Table 2). However, since antisocial behaviour exhibited significant heterogeneity ($Q_{men} = 28.641$; $p < 0.001$ – see Table 1), there may be unknown moderator variables affecting this aspect of recidivism.

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Table 3. Effect Sizes Detailing Actuarial Differences among Violent Recidivists vs. Non-Recidivists Parsed By Gender.

	Men				Women			
	$N_d{}^1$	Weighted[2]	Z	95% CI[3]	$N_d{}^1$	Weighted[2]	Z	95% CI[3]
Proportion of Recidivists	17	-0.421 (0.021)	-20.538***	-0.461/-.381	7	-0.962 (0.041)	-23.426***	-1.043/-0.882
Age	8	0.021 (0.046)	0.451	-0.070/0.112	2	-0.282 (0.058)	-4.824***	-0.396/-0.167
Sentence Length	1	-0.239 (0.207)	-1.154	-0.645/0.167	1	0.623 (0.240)	2.597**	0.153/1.093

[1] N_d, N_{EXP}, and N_{CONT} provide the total number of included studies, experimental subjects, and control subjects (respectively) for each morphological parameter.

[2]   Data presented as mean weighted effect size (standard error).

[3]   Range is presented as minimum/maximum unweighted effect size

* $p < 0.05$

** $p < 0.01$

***$p < 0.001$

Table 4. Inverse Variance Weighted Regression Analyses of Heterogeneous Effects in Violent Recidivists vs. Non-Recidivists.

Variable	Proportion of Recidivists (men only)	Proportion of Recidivists (women only)	Violent Criminal History (men only)	Age (men only)
Model				
Q_{MODEL}	80.543***	15.051***	4.557*	14.026***
$Q_{RESIDUAL}$	5.759*	0.968	4.108*	24.624***
Predictors				
Constant	1.939 (0.267)	-0.222 (0.291)	-0.330 (0.272)	0.371 (0.128)
Z	7.274***	-0.760	-1.215	2.878**
USA^2				-0.476 (0.154)
Z				-3.089**
Caucasian	-7.601 (0.881)			
Z	-8.6290***			
Follow-up	0.007 (0.001)	-0.024 (0.006)	0.00S (0.004)	-0.007 (0.00⁻)
Z	6.015***	-3.880***	2.135*	-3.187**

[1] Presented as unstandardized estimate (standard error).

2 See section 2.72 for a description of how this variable was dummy-coded

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

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3.2 Violent Recidivists vs. Non-Violent Recidivists

3.21 Global Homogeneity of Variance Testing

Similar to the results contrasting violent recidivists with non-recidivists, formal

testing for homogeneity of variance revealed several distinct clusters of effect sizes (see

Table 5). For one demographic variable (drug use), the distribution of effect sizes was

found to be homogeneous across genders, indicating that this factor affects the

probability of recidivism equally for both men and women.

Unfortunately, in a second group of variables (i.e., education, socio-economic

status, age, antisocial behaviour, marital status, and employment), effect sizes were only

available for males.

A third group of variables (i.e., proportion of recidivists and violent criminal

history) show significant global heterogeneity (as indicated by a significant Q_{total} – see

Table 5), indicating the need for further analysis. Each of these clusters of variables will

be analyzed in turn below.

3.22 Magnitude and Direction of Effects which are Homogeneous across Gender

When comparing violent recidivists with non-violent ones, the only variable

which showed a homogeneous distribution between genders was drug use ($Q_{between}$ =

0.6604, p > 0.05). Unfortunately, the aggregated data indicate that this variable is unable

to distinguish violent and non-violent recidivists ($d = 0.098$, p > 0.05 – see Table 6).

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Table 5. Homogeneity of Variance and ANOVA-Equivalent Tests for Violent Recidivists vs. Non-Violent Recidivists.

	Q_{TOTAL}	df	$Q_{BETWEEN}$	df	Q_{MEN}	Df	Q_{WOMEN}	Df
Violent Recidivists vs. Non-violent Recidivists								
Number of Recidivists	327.078***	21	2.843*	1	319.402***	17	4.833	3
Criminal History					60.678***	4		
Violent Criminal History	.40.385***	4	12.088***	1	28.297***	3	--	
Drug Use	64.433***	6	0.6604	1	--		--	
Education	--		--	1	27.570***	3	--	
Socio-Economic Status	--		--	1	5.109	2	--	
Age	--		--	·1	21.363***	5	--	
Antisocial Behaviour	--		--	1	1.005	1	--	
Marital Status	--		--	1	2.508	1	--	
Employment	--		--	1	3.957*	1	--	

* $p < 0.05$

** $p < 0.01$

***$p < 0.001$

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3.23 Gender Differences

Although the proportion of recidivists showed a significant difference between violent and non-violent recidivists (d = -0.790, p < 0.05 – see Table 6), this variable exhibited a significant gender difference ($Q_{between}$ = 2.84; p < 0.05 – see Table 5). When the effect sizes gathered from each gender are analysed separately, a significant negative effect size is observed in both men and women, although this effect is marginally larger in women (d_{men} = -0.780, d_{women} = -0.944 – see Table 7). Moreover, while this relationship seems unaffected by moderator variables in women (Q_{women} = 4.883, p > 0.05 – see Table 5), there was significant heterogeneity in men (Q_{men} = 319.402, p < 0.001 – see Table 5). Due to heterogeneity, a regression analysis was conducted, suggesting that the variance in this variable is accounted for by race (Q_{model} = 7.454, p < 0.01; $Q_{residual}$ = 0.225, p > 0.05 – see Table 8). Thus, while the proportion of violent recidivists is generally much smaller than the proportion of non-violent recidivists across both male and female samples, this difference is smaller in males in general and significantly smaller in male samples that include a larger Caucasian sample.

Violent criminal history showed a significant gender difference ($Q_{between}$ = 12.09; p < 0.001 – Table 5). In fact, these effect sizes show differences in opposing directions depending on whether the analysis was restricted to men or women (d_{men} = 0.571; d_{women} = -1.560 – see Table 7). Thus, while male violent recidivists have a greater violent criminal history than their non-violent recidivist counterparts, females show the opposite trend – violently recidivistic females have less violent criminal history. That is, women with more violent criminal history tend to recidivate with non-violent crimes (See discussion section 4.51 for more detail).

Table 6. Effect Sizes Detailing Actuarial Differences Among Violent Recidivists vs. Non-Violent Recidivists.

	N_d[1]	Weighted[2]	Z
Violent Recidivists vs. Non-violent Recidivists			
Proportion of Recidivists	22	**-0.790 (0.023)**	**-34.348*****
Criminal History	5	**0.509 (0.070)**	**7.271*****
Violent Criminal History	5	**0.544 (0.069)**	**7.848*****
Drug Use	7	0.098 (0.055)	1.782
Education	4	-0.040 (0.063)	-0.629
Socio-economic Status	3	-0.070 (0.061)	-1.148
Age	6	0.001 (0.070)	0.020
Antisocial Behaviour	**2**	**0.410 (0.162)**	**2.539***
Marital Status	2	0.006 (0.163)	0.038
Employment	2	-0.129 (0.155)	-0.831

[1] N_d provides the total number of included effect sizes.

[2] Data presented as mean weighted effect size (standard error).

* $p < 0.05$

** $p < 0.01$

***$p < 0.001$

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3.24 Male-Only Effects

The majority of data that was available in male populations (i.e., education, socio-economic status, age, marital status, and employment) showed no ability to significantly discriminate violent recidivists from non-violent recidivists (see Table 6). However, several variables (i.e., education, age, and employment) showed a positive significant heterogeneity (see Table 5), and thus may require further investigation for other underlying moderator variables.

Two variables in which data was only available for men (criminal history and antisocial behaviour) revealed a significantly difference between violent from non-violent recidivists. Antisocial behaviour showed a significant ($d = 0.410$; $p = 0.011$ – Table 6) and homogeneous ($Q_{men} = 1.01$, $p > 0.05$ – Table 5) relationship with violent recidivism. Thus, violent recidivists are more likely to display antisocial behaviour. Criminal history also significantly distinguished these two groups ($d = 0.509$, $p < 0.001$ – see Table 6), although with a heterogeneous distribution ($Q_{men} = 60.678$, $p < 0.001$ – see Table 5). Subsequent regression analysis revealed that this variance is accounted for by sentence length ($Q_{model} = 8.943$, $p < 0.01$ – see Table 8). Thus, it seems that violent recidivists have, on average, a greater criminal history than non-violent recidivists, and this difference tends to be larger in studies that examine populations of prisoners serving longer sentences.

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Table 7. Effect Sizes Detailing Actuarial Differences Among Violent Recidivists vs. Non-Violent Recidivists Parsed By Gender.

	Men				Women			
	N_d[1]	Weighted[2]	Z	95% CI[3]	N_d[1]	Weighted[2]	Z	95% CI[3]
Proportion of Recidivists	18	-0.780 (0.023)	-33.313***	-0.826/-0.734	4	-0.944 (0.095)	-9.993***	-1.130/-0.759
Violent Criminal History	4	0.571 (0.070)	8.192***	0.435/0.708	1	-1.566 (0.611)	-2.564*	-2.763/-0.369

[1] N_d, N_{EXP}, and N_{CONT} provide the total number of included studies, experimental subjects, and control subjects (respectively) for each morphological parameter.

[2] Data presented as mean weighted effect size (standard error).

[3] Range is presented as minimum/maximum unweighted effect size

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Table 8. Inverse Variance Weighted Regression Analyses of Heterogeneous Effects in

Violent vs. Non-Violent Recidivists.

Variable	Proportion of Recidivists (men only)	Criminal History (both genders)	Drug Use (both genders)	Education (men only)	Socio-economic Status (men only)
Model					
Q_{MODEL}	7.454**	8.943**	5.605*	26.231***	4.639*
$Q_{RESIDUAL}$	6.947	1.000	0.858	1.339	0.470
Predictors					
Constant	-1.245 (0.099)	-0.218 (0.264)	-3.043 (1.492)	0.665 (0.152)	0.222 (0.149)
Z	-12.593***	-0.827	-2.040*	4.387***	1.493
Caucasian	0.796 (0.292)				
Z	2.730**				
Sentence Length		0.102 (0.034)			
Z		2.991**			
Age			0.118 (0.050)		
Z			2.367*		
USA				-0.860 (0.168)	-0.351 (0.163)
Z				-5.108***	-2.154*
Canada				-0.784 (0.266)	
Z				-2.948**	

[1]   Presented as unstandardized estimate (standard error).

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

4. DISCUSSION

4.1 General Discussion

It is evident from the profiles presented that differences between individuals incarcerated for both violent and non-violent offences exist in varying magnitudes. Despite these variations, however, a profile of several actuarial variables can be associated with increased or decreased tendency for future violent and non-violent recidivism.

In general, the violent recidivist can be distinguished from other groups (i.e., non-violent recidivists and non-recidivists) largely via their criminal history. The greatest amount of violent recidivism was associated with the greatest degree of criminal history. This is especially true of violent criminal history, which remained the strongest predictor of a violent recidivist compared to both reference groups. In addition, antisocial · personality traits seemed to have distinguished violent from non-violent recidivists, but does not distinguish violent recidivists from non-recidivists. This may be because, in a large number of the studies synthesized, the non-recidivist group was composed of individuals that were imprisoned for violent first offences (explained in more detail below). Given this profile, discussion can now return to the original questions guiding this meta-analysis.

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4.2 Unique Predictors of Violence

One of the key questions guiding the current meta-analysis concerns whether there exist unique predictors that differentiate the violent recidivist from his/her non-violent counterpart. By dealing with a population made up entirely of convicted criminals, one can parse out those factors that are uniquely predictive of violence (i.e., factors which differentiate violent recidivists from **both** non-violent recidivists and non-recidivists) versus those which are uniquely predictive of recidivism (i.e., factors which differentiate violent recidivists from non-recidivists and **not** non-violent recidivists). More simply stated this analysis will attempt to examine how these predictors may be unique to violence *per se*, rather than to recidivism *per se*. Each of these types of predictors will be dealt with below.

Within the results described above, there exist a number of factors that appear to be very strong predictors of violent recidivism. These factors include criminal history, violent criminal history, and anti-social behaviour.

Among these variables, the strongest predictor of violent recidivism is a history of violence (see Table 2). This finding supports previous assertions that the best predictor of future violence is a violent history (Lang *et al.*, 1987). These data, however, cannot speak to the origins of such a violent history. Such a critical understanding is likely to come only from detailed qualitative analysis with a group of these individuals. These data do, however, underscore the notion that there is an inherent "profile" of the violent person that is constructed long before the index offence.

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Anti-social personality was a significant predictor of violent recidivism in males (see Table 1). A much larger meta-analysis conducted by Gendreau *et al*, (1996) had similar findings. That is, anti-social personality traits distinguished violent recidivists from non-violent recidivists. Underscoring the notion described above, much of the literature on anti-social behaviours begins with adolescent behaviours. For instance, Piquero and Chung (2001), state that there is continuity in anti-social behaviour from birth to adulthood. Anti-social behaviour in adolescence is said to be one of the largest risk factors in determining the future of criminal behaviour in women (Piquero & Chung, 2001).

This notion is supported by the fact that personality traits such as antisocial tendencies/behaviours are also able to predict which individuals are likely to commit a large number of violent offences. These personality traits are likely the product of learning early in the life course (Holmes & Holmes, 1996). Such results, again, support much of the focus of recent research on understanding personality characteristics of individual offenders. Many of these unique qualities may be found in a person's values and morals (Holmes & Holmes, 1996). For instance, according to Athens (1980), people who hold violent self-images tend to react to situations in a violent manner. It is important to note that in my study antisocial personality traits did not differentiate violent recidivists from non-recidivists, and thus does not qualify by the above description, as a unique qualifier of violence. This, however, may be due to a number of reasons.

In addition to the differences that researchers may have in defining recidivism, there are many different ways to measure, define, and quantify antisocial behaviour. This variation is made more problematic because many different disciplines conduct research

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on personality traits, each with different terminology and ideological traditions. For example, in studies where the assessment of anti-social personality was conducted by a psychologist or other healthcare professional, the assessment of an individual as "anti-social" is typically based on a rigid set of criteria, all of which the person must have in order to qualify as anti-social. In contrast, in studies where researchers are merely quantifying personality traits rather than using these data as the basis for a psychological diagnosis, researchers may use far less stringent definitions of what constitutes an anti-social person. Drawing a convincing link between anti-social personality traits and recidivism may be further complicated by the fact that, in many studies on the subject, both groups committed violent index offences. These differences may explain why these two largely violent groups (i.e., violent recidivists and non-recidivists, many of whom are violent offenders) could be differentiated from non-violent recidivists, but were not differentiated from each other. This further supports the notion that personality traits such as anti-social tendencies may be a distinct hallmark of violent predispositions as a discrete phenomenon, whether or not this violence manifests itself in repeat offences.

4.3 Recidivism and Gender

One of the most intriguing observations to be made form the current data involves those variables that show distinct dynamics for men and women. Several variables, such as violent criminal history (when considering violent recidivists vs. non-recidivists), as well as marriage, age and sentence length (when considering violent vs. non-violent recidivists) provide such unique predictions.

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4.31 Violent Criminal History

These gender differences are most profound for violent criminal history, which show different trends for men and women. In men, those with the greatest violent criminal history are among those most likely to recidiviate with violence. This finding is similar to a larger meta-analysis conducted by Gendreau *et al* (1996). In women, those with the least violent criminal history were the most likely to commit violent crimes in the future.

Several salient gender differences based on gender role norms may aid in explaining this effect. Foremost among physical differences across gender, women are at a physical disadvantage in comparison to men. Individuals are most likely to engage in violence when they feel/believe that they are dealing with a physically weaker opponent. As, generally, most men are physically stronger than most women, they are more likely to be in situations where they believe their opponent is weaker. Thus, this is the situation in which the individual is most likely to instigate violence (Felson, 2002, p. 56).

Moreover, women tend to be less impulsive than men (Hannah-Moffat & Shaw, 2001), which is a predictor not only of violence in general, but situations in which a person will instigate violence towards a more powerful opponent. In addition, women may also be more likely to engage in "one-time" violent offences, such as killing an abusive husband or boyfriend (Hannah-Moffat & Shaw, 2001).

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4.32 Marriage and Recidivism

As mentioned in section 1.33 most previous studies on recidivism have found a connection between marital status and recidivism. Based on the data in this study (See Section 3), the largest predictor of recidivism in general is marital status, at least in men. Those individuals who are married tend to have less risk of repeat offending than those without spouses. The underlying reasons for this association may lie in social control theories. Variations of these theories proposed by both Walter Reckless (1967) and Hirschi (1969) have stated that, in general, people can be shielded against tendencies towards deviance if they have a strong social network (i.e., peers, school, and family). Although several types of bonds (for instance, what Hirschi termed attachment, which is the development of interest in others and social conscience) are primarily developmental in origin (passed via school and parent-child relationships), some of these bonds may be learned over the course of a person's life span.

4.33 Age at First Offence

Another significant gender difference was discovered in this study when considering the age of an individuals first criminal offence. This supports many previous reports (see section 1.32) that early onset of criminal behaviour (age at first offence) is predictive of more serious criminal activity later on in life (e.g., Piquero & Chung, 2001; Tolan & Thomas, 1995). Those individuals who began committing crimes at an earlier age were found to have the highest risk of re-offending. Thus, the earlier a person starts criminal behaviour the more serious it may become, regardless of gender.

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In general, women with a younger age of onset tend to be the most likely to recidiviate violently. This effect was not seen for men. This link between age of first offence and recidivism has been observed previously by several researchers (see Tolan & Thomas, 1995, and Gendreau *et al*, 1996 for discussion). However, previous studies have either examined only men or found similar effect for both men and women (Tolan & Thomas, 1995). The current results of this study, however, suggest that the effect is, in fact, non-existent for men, and predictive of future violent crime only in women. This effect, however, may not be accurately assessed using the current methods.

This type of population, while optimal for most of the variables examined here, may not be best when examining such developmental influences. Considering these discrepancies, however, it can still be concluded that the effect of age of first offence is, in fact, larger for females than males. Two possible explanations exist for this gender difference. Males with early onset [typically before the age of 12 (Tolan & Thomas, 1995, p. 157)] may have lower recidivism rates than females with an early age of first offence. By contrast, the greater effect of age on female violent recidivism may be the result of lower recidivism rates among the female late-onset cohort than the male. Put simply, this data suggests two possibilities. Among those with the earliest age of first offence, women are far more likely to recidivate violently than men. Alternatively, among those offenders with the latest age of first offence, women may recidivate less.

In explaining these options, it is important to note that an effect size describes the magnitude of a **difference** between two groups, not the group means themselves. Thus, one cannot conclude with conviction which of these two options reflects the true dynamics of age and violent recidivism without further research.

4.34 Sentence Length

Another significant gender difference found in the current analysis concerns the link between sentence length and future recidivism. In men, sentence length had no significant relationship to recidivism. However, the present data suggest that women serving longer sentences are at a greater risk for violent recidivism. The root of this gender difference may lie in Copeland's (1997) notion of double deviance. Double deviance states that when a woman has been incarcerated for a long period of time, many may lose their ties with the community, whether this is with peers, friends, or family. These social ties are said to be one of the most important factors in rehabilitation (Copeland, 1997). One of the biggest reasons for this is that women fall under the pre-conceived notion of female subservience. Women are "supposed" to be complacent, compliant people, and thus when they commit a crime, they are stigmatized twice, and may lose their community connections.

This previous point relates to another social factor that may contribute to the effect of sentence length on recidivistic violence in females – the fact that violence is an inherently gendered concept. That is, there is an inherent gendered nature to the discourse used to deal with women in the criminal justice system. For example, because the conceptualization within society of what attributes and behaviours are typically labelled masculine versus feminine are not equipped to incorporate the concept of female violence, the view of the woman within society has typically underscored the "anti-violent" nature of women (Gilbert, 2002, p. 1293). Thus, instead of learning about the

true nature of female violence and attempting to deal with this problem, society will deal with this problem through negative stereotypes. For example, society tends to classify women who are violent with negative connotations such as mad, bad, butch or lesbian – generally labelling her as different from "normal" women (Gilbert, 2002, p.1272).

Thus, when a women is arrested and serves time in prison, these labels create negative stereotypes that create an environment that infringes upon a woman's ability to reintegrate into a "normal" definition of her role as a woman in the world – and, thus, her ability to reintegrate into society in general. According to Gilbert (2002, p. 1295 as quoted by Inness 1999),

> if masculine attributes, such as toughness, and feminine
>
> attributes, too, are conceived as free-floating signifiers that refer
>
> to either a male or female body, our whole culture is
>
> destabilized [by the presence of a violent woman] because it is
>
> based on what are perceived as the essential differences between
>
> men and women.

Moreover, these stereotypes will tend to follow her long after leaving prison. Thus, because of the gendered nature of our conceptualizations regarding violence, a woman who is violent may be treated much worse (by the criminal justice system) than a man imprisoned for a similar offence. This isolation as punishment for the violation of social norms regarding gender may create an environment that leaves the violent female vulnerable to further violence and recidivism.

Given this possible link between the violation of social norms and recidivism, why then is there a strong relationship between violent recidivism and sentence length?

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It may be possible that these stigmatizations (i.e., labels which masculinize violent women or otherwise label them as abhorrent) operate along a continuum. Thus, those serving longer sentences (who presumably committed more serious violent crimes, and thus more seriously violated the social norms surrounding gender), are the ones most isolated for their violations, and are thus at the greatest risk for recidivistic violence. In addition, these negative stereotypes may interact with other, external factors that inhibit the reintegration of women into society, such as the loss of social ties (i.e., to both family and friends) as well as a lack of resources.

Another reason may be because of a breakdown of the family. Women who are released from prison may face new and unexpected parenting challenges, such as, loss of contact with their children or loss of legal guardianship. Many women can face severe strain and stress, both emotional and financial.

Women are far more likely to be living near the poverty line, and thus may be more likely to commit crime as a means of providing for themselves or their children.

In Canada women make up more that half of the people living below the poverty line (Boritch, 1997). One of the main reasons for this economic disparity between men and women may be due to long standing gender-based roles which have denied women many of the same opportunities as men (Boritch, 1997). Most of these opportunities surround both economical and independent financial freedom. In the case of divorced families a woman's income can decline up to 40 percent (Boritch, 1997, p. 14). In addition, 82 percent of single parent households are headed by the mother (Boritch, 1997, p. 14).

Aboriginal women are considered the most socially and economically marginalized segment of the Canadian population (Boritch, 1997). When a woman comes in conflict with the law, especially Aboriginal women, this becomes a glaring example of gender and racial inequality within Canadian society (Boritch, 1997, p. 14). Moreover, once a woman is released from prison, especially with a longer sentence the economic and financial responsibilities, childcare responsibilities and lack of community support can be overwhelming.

Finally, treatment programs are predominantly designed after research conducted with men, and thus may be improperly designed for women (Bonta et al., 1995). Some of the biggest issues that women face exclusively are sexual abuse histories and lack of family skills, since women are typically the primary caregivers for their children. In addition, many women find it difficult to find proper employment after being incarcerated, mainly due to stigmatization or "double deviance". Because treatment programs predominantly do not deal with these issues, women are not being properly rehabilitated, and thus have higher recidivism rates than men.

4.4 Proportions of Recidivists across Studies

As stated in the introduction, many factors can affect the base rates of recidivists vs. non-recidivists within studies. An examination of some of these factors has revealed some of the most complex relationships within the analysis.

As stated in the results, most random samples drawn throughout the literature examined found relatively few violent recidivists. That is, a far greater proportion of

both non-violent recidivists and non-recidivists were found in a typical sample of inmates randomly selected for follow-up. This difference, however, was affected by a number of moderator variables for men and not women.

In men, the number of violent recidivists was significantly affected by the racial composition of the sample. This was true whether the proportion of violent recidivists was compared against non-violent recidivists or non-recidivists. The current data reveal that samples which contained a greater proportion of Caucasians had the smallest difference in the proportion of violent offenders. Although these effect size reports the **relative** difference, rather than absolute values, it may be reasonably concluded that Caucasian samples had the least violent recidivists, since this same trend was found regardless of which control group was examined (i.e., non-violent recidivists or non-recidivists).

When considering this association, it may be useful to examine urban dynamics, rather than race *per se*, when looking at race, poverty and violent crime. Crime is not necessarily a factor of a person's skin colour, but rather a factor of marginalization caused by society. It is important to note that urban dynamics was developed in an American context, and may not have similar outcomes in different countries. However, urban dynamics will be looked at since the majority of studies in this meta-analysis were American, thus, justifying this train of thought.

Violence has been linked to low socio-economic status and the residential instability of many neighbourhoods. Concentration effects such as macro-social forces (segregation) and community level factors such as poverty impact the residents living in

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areas that are overwhelmingly disadvantaged (McNulty, 1999). Thomas McNulty

(1999), best describes urban dynamics as:

> ...a residential process in which blacks are at a substantial
>
> disadvantage. This argument is assessed from an individual-level
>
> vantage point that sees the race-violence relationship in terms of
>
> the inability of blacks, regardless of class level, to gain access to
>
> communities on par with similar situated whites. Thus, blacks are
>
> more commonly found in social contexts in which the conditions
>
> that both promote criminal violence and undermine the
>
> mechanisms of social control that discourage it are more
>
> pronounced (p. 26).

A study conducted by Sampson, Raudenbush, and Earls, (1997) looked at

collective efficacy and its link to decreasing violent crime in neighbourhoods. Collective

efficacy can be defined as "...social cohesion among neighbours combined with their

willingness to intervene on behalf of the common good..." (Sampson et al., 1997, p.

918).

The authors state that rates of violent crime are not solely the attribute of

demographic characteristics of the individual; rather they proposed that the differential

ability of neighbourhoods to realize the values of both their fellow residents and maintain

effective social controls will help to decrease rates of crime (Sampson et al., 1997). This

can be thought of as a type of neighbourhood watch, thus when people still have some

sense of pride over where they live, crime in that neighbourhood will decrease. However

forms of decay such as graffiti, run down buildings etc. are usually places where crime is more common.

In order to understand the link between poverty and violent criminal offending and re-offending, one must look at the reasons why there is a link between poverty and violent crime. There is much research done on the link between minority status and violence, but the question is why or how living in an impoverished area may lead to violent criminal behaviour. One of the best ways of attempting to understand how area demographics are able to affect a person's behaviour is through place stratification theory. The underling premise of place stratification is:

> that hierarchies of race and place intersect to generate distinct
>
> residential outcomes among racial/ethnic groups. Specifically, this
>
> model hypothesises that there are inequalities in residential
>
> outcomes beyond that which can be explained by compositional
>
> differences among group members- a stratification that matches
>
> closely the stratification of racial/ethnic groups in American society
>
> (McNulty, 1999, p. 27).

Place stratification is defined by Alba and Logan (1993) as: "[r]acial/ethnic [*sic*] minorities are sorted by place according to their group's relative standing in society, [limiting] [*sic*] the ability of even the socially mobile members to reside in the same communities as comparable whites" (Alba & Logan, 1993, as cited by Charles, 2003; p. 182).

Thus what may happen is that many ethnic people are located in neighbourhoods in which has a lack of job opportunities, poorer schools, and high levels of poverty. This

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in turn, tends to segregate people from better opportunities (McNulty, 1999). This research states that blacks are less likely than whites to escape economic distress (McNulty, 1999), and that the higher unemployment rates for blacks increases the probability of moving into lower income neighbourhoods. The stronger the residential segregation between blacks and whites (i.e., whites moving away from blacks), the less likely that black people will move into largely white areas. This is perhaps an explanation as to the race-crime relationship. An increased concentration of disadvantage opportunities may lead to violent crime (McNulty, 1999). Take for example Robert Merton's strain theory (1968), which briefly states that equal opportunities are made for all people, however in more disadvantaged neighbourhoods many opportunities are lacking, thus a person feels strain (or stress) and commits a crime in order to gain certain material possessions that they would otherwise not have.

However to recognize that a lack of legitimate opportunities alone is responsible for crime is only half of the equation. In order to understand violence one must also look at the cultural messages that tend to influence people in a violent manner (Comack, Chopyk, &Wood, 2002, p.248). Violence may be social in context, meaning that individuals may use violence as a means of power and control over another person. According to Comack *et al.* (2002, p. 246) "individuals who use violence make choices, but those choices are conditioned or contoured by their social location: in particular, by their race and class as well as their gender". An example outlined by Comack *et al.* (2002) states that Aboriginal people are overrepresented within the Canadian penal system; one reason for this is due to the large numbers of arrests based on violence between intimate partners and family members. One possible explanation for these high

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statistics may go back to colonization, economic hardship, and the impact of the residential school system. When coupled with the lack of legitimate opportunities, racism, and marginalization, such conditions easily result in violence toward family members (Comack *et al.*, 2002, p. 246).

Another way in which violence may be social in context is by looking at violence as being normative (Comack *et al.*, 2002). Violence is apart of a normative understanding of masculinity. Many men are also acting out the masculine scripts that they are shown everyday on movies, television and games. Boys are also not reprimanded in the same way as girls because violence for boys is more socially acceptable.

When considering women, however, it was found that race had no effect on whether a woman would recidiviate violently. In fact, across both of the comparisons made (i.e., vs. both non-violent recidivists and non-recidivists), women tended to have higher rates of violent recidivism than their male counterparts. This, however, may be due to a racial skew within the literature concerning female recidivists. Across the data set compiled here, male recidivists (both violent and non-violent combined) were comprised of 48.8 percent whites, 47.3 percent blacks, 1.6 percent aboriginal, and 19.8 percent other ethnic backgrounds. In women, however, only 15.0 percent of those individuals included in the studies were Caucasian, while 84.0 percent were blacks, less than 1 percent were aboriginal, and 2.0 percent were from other ethnic backgrounds.

This racial skew, however, may not be an experimental bias – rather, it may reflect the inherent racial skew of the female incarcerated population. More than half the women who are in prison in the United States are of African or Hispanic origin. Banks

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(2003, p.), states that 83,668 women were in prison in the United States in the year 2000. Of these women, 44 percent were African American; this is a surprising statistic considering African American women only made up 13 percent of the U.S. population in 2000. In the five-year period from 1986 to 1991, the number of African American women incarcerated rose 828 percent, mainly for drug offences.

Within the Canadian prison system Aboriginal women make up 17 percent of the entire prison population. This statistic drastically increases when looking at the Prairie Provinces where Aboriginal women make up 55.8 percent of incarcerated women. This is equally surprising since Aboriginal women make up only 3 percent of the Canadian population (Correctional Services Canada, 2003).

Another possible cause of this racial skew may be due to fact that women of a visible minority may have fewer social opportunities. Several lines of evidence suggest that these women are marginalized not only based on their race, but also their gender (Hannah-Moffat & Shaw, 2001). Thus, these women may have higher rates of recidivism due simply to the lack of equal opportunity available to them after their release.

Another significant gender difference was observed when examining the impact of follow-up period as a moderating factor in recidivism rates (Table 4). In general, studies examining male parolees for longer periods of time reported a smaller number of violent recidivists. In contrast, studies following female parolees reported a greater proportion of violent recidivists with longer follow-up periods (Table 4). It should be pointed out, however, that these effect sizes are small (ranging from 0.007 in men to 0.024 in women – less than 3 percent of the original effect in the proportion of recidivists). As such, although this finding may identify a novel direction for future

research, it cannot yet be concluded with confidence that this effect reflects the true dynamics of gender and recidivism.

4.5 Insignificant Factors

The results of this meta-analysis describe not only which factors successfully predict recidivism, but also those that do not. Several factors fit this description – for employment history, education level, and socio-economic status, there appears to be no relationship with either recidivism or violence. It is important to note, however, that these factors may be significant predictors of **initial** criminal behaviour, however, when dealing with a population made entirely of convicted criminals, these factors do not separate individuals who do not recidivate from those that do.

4.6 Limitations of the Research

A large number of effect sizes have been reported in the current analysis, revealing substantial new information and suggesting new directions for research. Despite these data, a number of limitations inherent to this analysis warrant discussion – the sample size of the meta-analysis, the lack of quantitative data in general, the relationship between these data and criminal behaviour as a phenomenon distinct from recidivism, the design of individual studies, unobserved criminal behaviour, and how researchers define recidivism.

4.61 The Size of the Meta-Analysis

In terms of a meta-analysis, the current study is relatively quite small, however as mentioned above, several factors have contributed to this dilemma. Primarily, there is a lack of data pertaining to women offenders in general, especially violent female offenders. Secondly, this particular study dealt with a very limited population, for example all studies which included sexually based crimes were omitted. Although this is a small population for examination, the point of a meta-analysis is to summarize the state of knowledge on a particular topic. Admittedly this meta-analysis is limited to how it can be generalized. However, this may be a result of shortcomings in the knowledge and data pertaining to female offenders and not this particular analysis. Although this meta-analysis only had 49 studies, one must keep in mind that it expanded across several different countries, thus, it is representative of what we know thus far about female offenders and recidivism. While the limitations of the sample size cannot be ignored, this study does provide an initial benchmark for later studies that consider links between gender and violence in recidivism.

4.62 Availability of Quantitative Evidence

Although the literature in this field is considerable, the vast majority of the articles screened did not contain sufficient quantitative data (as described in the methods) to calculate an effect size. While this is not necessarily a problem for the current study, this limitation does have implications for future research.

A sample of the otherwise eligible studies that were rejected based on a lack of descriptive data will be outlined as examples. This is by no means a critique of these

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studies, rather an illustration of why a large proportion of eligible studies were excluded. The first of these examples is a study conducted by Porter, Birt and Boer (2001). To the author's credit, this manuscript contains a wealth of data that is relevant to the current meta-analysis (e.g., data on age and antisocial behaviour). However, no statistics are reported that lend themselves to conversion to an effect size (i.e., Cohen's d). The only indication of the descriptive data comes from a series of survival-curve graphs within the study, and the only indication of significance testing is from multivariate test (in this case, Cox regression) that cannot be converted to effect sizes. This is a typical layout found in many of the reports examined. Future research should bear in mind the need for the thoughtful reporting of quantitative measures, including exact test values or complete descriptive statistics.

Another example of typical data reporting can be drawn from a study by Loza and Loza-Fanous (2001). To the credit of Loza and Loza-Fanous, the manuscript is highly detailed, with distinct reports for violent and non-violent recidivists, along with reporting of the exact values of all statistical tests. Unfortunately, raw data could not be extracted because this analysis used the scores of a standardized test (in this case, the self-appraisal questionnaire). Although actuarial variables make up these tests scores, only the scores themselves were given.

In addition, a number of otherwise eligible articles dealt with experimental treatment programs as alternatives to prison (e.g., boot camps). One example of this type of study is by Alarid, Burton, and Cullen (2000). This study is otherwise an excellent manuscript – it contains a great deal of actuarial data separated by gender that would otherwise be a very useful addition to the meta-analysis. Unfortunately, this data had to

be excluded, since this population was already in a specialized treatment program, and thus did not deal with a typical "mainstream" recidivistic population. Inclusion of such data would run the risk of biasing the results due to including a sample that is not representative of the typical prison population.

Finally, there is a lack of quantitative data pertaining to women. Many of the published studies on recidivism have included females in their studies – however, the majority of studies have combined males and females together with little consideration for gender differences. Such inclusions have ranged from 1.2 percent in Martinez (1997), through 8.1 percent in Heller and Ehrlich (1984), to 49.3 percent females (Piquero, 2000). There are, however, studies on crime and recidivism that looked at only one gender. Putkonen, Komulainen, Virkkunen, Eronen, and Lonnqvist, (2003) studied female repeat offending, while Bonta et al. (1997), conducted two separate studies addressing the issues of predicting criminal recidivism in female offenders. Loza and Green (2003), looked at males only for violent crime and Glover, Nicholoson, Hemmati, Bernfeld, and Quency, (2002) measured violent recidivism in males only. The large number of studies (as described above) that do not distinguish between males and females limits the number of studies that could be used for this research. This paucity of research into the gender differences of male and female offenders is of concern, since women are the fastest growing population in the United States prison system.

In Canada, the numbers of women within the penal system are not as high as those in the United States. However, the population of the United States is approximately ten times the size of the Canadian population. Thus, one must keep in mind the population differences between countries when looking at statistics.

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4.63 Relationship to Criminal Behaviour

Related to the previous point, although the large number of effect sizes provides convincing evidence that actuarial variables may predict a profile of both violent and non-violent recidivism, the link between these profiles and the factors underlying the beginnings of criminal behaviour is difficult to establish as it is blurred by a lack of quantitative evidence. Such an understanding would come from similar analyses of initial criminal behaviour, rather than recidivistic crime. Although research on the predictors of recidivism does aid in some respect the development of better programs targeting criminogenic needs, this evidence cannot be used as a tool for assessing many of the causes underlying the origins of criminal behaviour. Successful treatment programs within the penal system need to target not only the underpinnings specific to repeat offenders, but also those factors that lead to initial criminal behaviour.

Since the factors predicting **initial** criminal behaviour are arguably identical within both groups (since both recidivists and non-recidivists are convicted criminals), this type of research is not able to capture these differences that lead to the onset of the criminal behaviour within these three groups.

In order to draw a convincing link between the onset of criminal behaviour and recidivism using quantitative methods, the ideal paradigm would be through reporting differences in actuarial variables between violent or non-violent recidivists and a "normal" control population, defined as a group of individuals without criminal or violent histories. Such an analysis, however, would be inherently problematic. There are many potential definitions of a "normal" population, and obtaining accurate data would be

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difficult. In the absence of criminal records, a researcher would have to rely heavily on self-reports, which may be inherently biased based on the demand characteristics of the study. A participant that has a criminal history, but no arrest record, may have a strong bias towards underreporting any past criminal behaviour for fear of possible repercussions from their admission. With the exception of developmental studies (where the behaviour of the participants is monitored throughout most of the course of the study by parents and schools), it is also difficult to conduct such a study longitudinally with adult populations. These difficulties may underlie why such studies, to the knowledge of the author, do not exist. Such an adult longitudinal study of the factors underlying the origins of criminal behaviour, although difficult to conduct and costly, may provide critical data for the creation of community programs to target prevention of at-risk groups rather than solely focus on the rehabilitation of those who are already imprisoned.

4.64 Study Design

A third limitation in the current study is one that is common to all meta-analyses. By its nature, a meta-analysis is restricted by the design of the original source studies which are being aggregated. In practical terms, this issue only presented significant limitations in two respects – the length of time that participants were observed following release from their index offence, and the lack of data regarding differences in the severity of the offences committed.

Foremost, short follow-up studies are likely to underestimate true rates of recidivism, since more people are shown to recidiviate over longer periods of time (e.g., Eisner, 2002; Matthews & Pitts, 1998). With few exceptions, such as a study by

Martinez (1997) which followed participants for 168 months, and Bonta *et al*. (1995), who followed a group of women for 10 years, the majority of the studies examined used relatively short follow-up periods. Thus, the actual rate of recidivism may be much higher than reported here. Future longitudinal studies on recidivism need to follow their participants for longer periods of time.

A second limitation related to study design was encountered due to the lack of data concerning the severity of the crimes committed. Because all of the data analysed took the form of aggregated statistics, the severity of the second crime committed by a recidivist relative to their index offence cannot be determined on an individual basis. If, for instance, a person is re-convicted of a crime that is relatively minor in comparison to their index offence, this may arguably constitute successful treatment of that offender. Although by the nature of the reported data this individual would not be distinguished from a recidivist who committed two equally severe crimes. This is especially relevant in the case of non-violent recidivists, since an unknown proportion of these individuals may be re-incarcerated for committing survival crimes due to the marginalization that many parolees (especially women) face (for more discussion on this, see section 4.63).

4.65 Unobserved Criminal Behaviour

Unobserved criminal behaviour remains a considerable obstacle to any criminological research. Unfortunately, since some proportion of crimes will go unobserved, all that can be done is to take into account that the rate of crime and recidivism may be much higher than recorded. Since this is an issue which affects all criminological research, this does not constitute a significant issue for the current study.

In any study on recidivism, both the first or second criminal event may go unobserved, and thus, they are unknowable.

4.66 Defining Recidivism

As stated in section 1.11, one of the most fundamental problems faced when studying recidivism lies in how to define this term. As there is not a universal definition of recidivism, the definition of what constitutes re-offending is greatly dependant upon who is conducting the research. This variance, in turn, has the potential to impact greatly on a correctional system's decisions in implementing treatment/rehabilitation programs, since recidivism rates are commonly used to measure treatment program success. Despite this problem, varying definitions of recidivism are unlikely to affect the outcome of this meta-analysis. In fact, these varying definitions of recidivism may actually increase the degree to which the results can be generalized – incorporating a broad range of definitions may result in conclusions that are not susceptible to change based on subtle changes in how one defines recidivism.

4.7 Future Directions

In addition to encapsulating the state of knowledge on a particular topic, one of the most important functions of meta-analytic syntheses is to examine gaps in the current knowledge and suggest avenues for further research (Wolf, 1986). The current analysis has uncovered several such gaps, and based on these, several suggestions for continued research on the actuarial correlates of recidivism can be offered.

Foremost, this meta-analysis confirms and supports what other researchers have found and commented on, mainly, there is not enough data concerning women and recidivism. Moreover, this lack of data is most acute when considering women who commit violent crimes. This gap in the literature has been discussed at several points herein. As such, it will not be elaborated upon here. As a fundamental starting point, studies are needed that examine violent female offenders over prolonged follow-up periods (i.e., 6 years or more) in order to examine, both quantitatively and qualitatively, the predominant causes of relapse in the female offender. Both quantitative and qualitative methods are important for understanding women, crime and recidivism. Quantitative methods allow a researcher access to a much larger data set, but qualitative methods allows for a smaller in-depth, personal analysis of the problems facing women, and can lead to important findings regarding treatment of women and factors affecting recidivism and crime in general.

In addition, atten͏ ͏ ͏ ͏ ͏ rs common to male and female offenders (which were examined in the current study), but also those aspects in the life history that are idiosyncratic to the female offender, such as parenthood, lack of marketable job skills, and sexual and physical abuse histories.

Another avenue for further research would be to look at the policy realm affecting women. Reduction of recidivism is an important public policy objective, thus, rehabilitative programs offered in prison need to change. For example, better parenting classes need to be implemented so women who are mothers are better able to deal with the hardships of returning to parenthood. Research must also look into the amount of securitization that women face after leaving prison (double deviance); this may ultimately

lead to loss of job opportunities, and community support resulting in re-offending due to loss of legitimate opportunities. As well, programs need to take into account the sexual and physical abuse histories of many women. Programs must be available to aid in the educational and skill training of men and women, and special emphasis must be placed on employment, especially for women who are often the primary caregivers of children. In addition, research should look into the success rate of these programs in order to establish a reduction in recidivism rates.

With this information, programs can be developed which are based on criminogenic and mental health needs particular to women, rather than based on models developed using male populations. In turn, these new, targeted programs need to be followed and assessed in order to establish their efficacy in female populations.

5. CONCLUSION

As stated in the introduction, the study of recidivism is critical to optimizing the correctional system in general. Although there is still a great deal to be learned about recidivism, especially women recidivists, there exist many limitations inherent to studying crime and recidivism (i.e., defining recidivism, unobserved criminal behaviour, and opportunity and offending). The meta-analytic technique is uniquely capable of accounting for some of the inconsistencies typically seen across studies attempting to predict violent recidivism. Fortunately, the current meta-analysis revealed several novel relationships between recidivism, demographic variables, and gender. Given these

results, attention can now be turned to the original research questions posed in section 1.83:

(1) *To what degree can actuarial (i.e., demographic/historical) variables expose a "profile" that can distinguish violent and non-violent recidivists to provide unique predictors of violence?*

This study found that increased violent recidivism was associated with increased criminal (and especially violent) history; however this variable predicted future violent recidivism equally well in both men and women. Age showed no ability to differentiate violent recidivists from non-recidivists. As well, antisocial personality traits may also distinguish violent recidivists from non-violent recidivists.

(2) *To what degree can these same variables distinguish those offenders most likely to recidivate, independent of violence?*

The largest predictor of recidivism in general is marital status, at least in men. Those individuals who are married tend to have less risk of repeat offending than those without spouses. The underlying reasons for this association may lie in social control theories (see discussion above). The current findings also reveal that both alcohol and drug use were significantly linked to an increased risk of recidivism in general. The link between substance use and recidivism may manifest itself in several ways – such as through drug-defined crimes (e.g., possession and selling), drug-related offences (in which people are financing their drug habit). Although there is a strong relationship between substance use, crime, and recidivism, drug use may be a critical result, rather

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than cause, of criminal behaviour (French *et al.*, 2000). In either case, drug use is an important factor when examining the link between crime and recidivism

In addition, age was found to be predictive of recidivism. Those individuals who began committing crimes at an earlier age were found to have the highest risk of re-offending. Thus, the earlier a person starts criminal behaviour the more serious it may become, regardless of gender. This supports many previous reports that early onset of criminal behaviour (age at first offence) is predictive of more serious criminal activity later on in life.

(3) How are these predictors of both violence and recidivism affected by gender?

Arguably, one of the most important components of this study was the analysis of gender and violence. Gender has always been a critical aspect of crime, punishment and rehabilitation. Gender becomes a greater concept when looking at violence. As stated in the discussion, violence is an inherently gendered concept. This may be one of the reasons why violence and women have been virtually forgotten within the research on crime, and recidivism.

Despite the limited data available on female offenders, several actuarial variables have been shown to affect recidivism in a distinct fashion for males and females. Such significant gender differences have been found in the link between the risk of recidivism and (a) violent criminal history, (b) age at first offence, as well as (c) sentence length. The fact that these significant differences were observed within a limited body of literature further underscores the potential that there are many, as yet undiscovered, ways in which the life histories of people who have been incarcerated effect (and are effected by) gender.

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(4) How do moderator variables across studies (i.e., study characteristics such as the

country in which the sample was drawn or the length of time that participants were

followed longitudinally) affect the results that these studies typically report?

Several variables examined in the current meta-analysis were significantly

affected by moderator variables. When considering contrasts made between violent

recidivists and non-recidivists, the proportion of male violent recidivists across studies

was accounted for by changes in race as well as the length of follow up, across studies.

Thus, studies with the largest minority populations as well as the longest follow-up

period report the greatest number of violent recidivists. In women, follow-up also

significantly predicted the proportion of violent recidivists, but with the opposite trend –

studies with the shortest follow-up found the greatest relative proportion of violent

recidivists. Thus, across studies, the longer women are followed within a study the less

likely they are to recidivate violently. In addition, age differences between violent and

non-violent male recidivists were significantly affected by the country in which the study

was conducted in, as well as the follow-up length. Thus, while violent recidivists tend to

be older than their non-recidivist counterparts, this difference was smallest in studies with

the longest follow-up periods. This difference also tended to be smaller in studies

conducted in the U.S.A. than in other countries (i.e., Canada, England, Finland, Sweden,

and Turkey). In addition, while violent recidivists generally have a greater violent

criminal history than non-recidivists, and studies with longer follow-ups show this

difference in greater magnitude.

When considering contrasts between violent and non-violent recidivists, several

significant moderator variables were also observed. While the proportion of violent

recidivists is generally much smaller than the proportion of non-violent recidivists across both male and female samples, this difference is smaller in males in general and significantly smaller in male samples that include a larger Caucasian sample. In addition, while violent recidivists have, on average, a greater criminal history than non-violent recidivists and this difference tends to be larger in studies that examine populations of prisoners serving longer sentences.

This study has not only confirmed several known predictors of recidivism, but revealed several new factors, especially in relation to gender and violence. It cannot be stresses enough that more research is needed on women, violence and re-offending. It is the obligation of society to provide effective means of rehabilitation and treatment for those individuals who violate social norms. Although this is a laudable goal, the tremendous gap in our collective understanding of the female offender has made the prospect of meeting this obligation problematic. With the addition of the data from the current study, along with future research targeting the female offender, society may make substantial progress towards meeting this most fundamental obligation.

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7. APPENDIX A

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