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The Violent Crime Rate Decline: Towards an Explanation

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2002**

**Submitted to the Department of Criminology, University of Ottawa, in partial
fulfillment of the requirements for the degree of Master of Arts**

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Abstract

Academics and policy makers have taken note of what appears to be a decline in violent crime in the early 1990's in North America. In Canada, by 1999, the violent crime rate had decreased for the seventh consecutive year. Research has failed, to date, to fully account for this decline. In fact, there are many competing explanations found in the literature. With the exception of research by Kennedy & Veitch, (1997) Carrington, (2001) and Ouimet (2002), most of the research examining the decreasing levels of violent crime has been undertaken using American data. The purpose of this study is to answer the following research question: Which proposed explanations for the decline in rates of violent crime decline are most plausible? This paper examines four possible explanations for the recent decline in the violent crime including changes in the unemployment rate, demographic patterns, police staffing levels and reporting rates. This thesis concludes that the best explanations for the violent crime rate decline between 1993 and 1999 are the changes in the unemployment rate and the changes in demographic patterns as well as changes in the police workforce. Reporting rates have remained stable and thus cannot account for the violent crime rate decline. However, even these explanations fail to account for variation in crime rates over a larger period. Clearly, more sophisticated research is needed.

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Chapter One

INTRODUCTION

The systemic collection and dissemination of reliable annual statistical data on crime is a relatively recent venture in most, if not all countries. The United States has only been systematically collecting crime statistics since the 1930's, while Canada did not follow suit until 1962, with the creation of the Uniform Crime Reports (UCR). Since their inception, these statistics have become indispensable to the criminal justice system. If utilized properly, crime statistics can provide one of the most powerful tools available to social policy decision makers and academic researchers alike (Schmallegger, 2000:31).

It is often the case that attention is only given to significant increases or decreases in crime. It is therefore not surprising that academics and policy makers have taken note of what appears to be a decline in violent crime¹ in the early 1990's in North America. In Canada, by 1999, the violent crime rate² had decreased for the seventh consecutive year. Research has failed, to date, to fully account for this decline. In fact, there are many competing explanations in the literature. The proposed explanations for the decline in violent crime include increased incarceration levels, changing demographic patterns and changes in police force levels.

With the exception of research by Kennedy & Veitch, (1997) Carrington, (2001) and Ouimet (2002), most of the research examining the decreasing levels of violent crime has been undertaken using American data. The United States and Canada are similar in some respects, such as the fact that more than 90% of the 30 million Canadians live

¹ Violent crime is a category that includes the following Criminal Code offences: homicide, attempted murder, assault, sexual assault, other sexual offences, abduction and robbery

² Crime rates are based on 100,000 population (Tremblay, 2000:3)

within 100 miles of the U.S border, the popular culture is shared and the two countries share a generally comparable history of colonization (Lipset 1990 in Ouimet 2002:34). However, there are major differences noted by Lipset. He argues that Canada is a more egalitarian society than the United States and that Canadians are more tolerant towards others and more open to different races, religions or sexual orientations (Lipset, 1990 in Ouimet 2002:35) Therefore, it is inappropriate to assume that the explanations found in the research literature based on U.S data are generalizable to Canada. There is a need to examine explanations for the violent crime rate decline in Canada using Canadian data.

PRESENT THESIS PROJECT

The present research thesis sought to examine the trends in the violent crime rate in Canada and quantify the current decline. The purpose of this study was to answer the following research question: **Using Canadian data, which explanations for the violent crime decline are most plausible?** In order to examine this issue, this thesis concentrates on four possible explanations: changes in the unemployment rate, changes in demographic trends; changes in the police workforce, and changes in victim reporting behaviour. For each of these abovementioned factors, the data will be plotted against the violent crime rate in order to assess plausibility. In some instances, correlations will be calculated.

Due to the plethora of competing explanations for the violent crime decline, the principal hypothesis of this thesis is that there is a complex relationship between the various explanations. Most of literature examining the declining crime phenomenon does not claim that one explanation is solely responsible for the decline but rather that a

certain factor contributes to the decline in the violent crime rate. The purpose of this thesis is not to isolate the sole explanation for the declining violent crime rate but rather to determine the relative plausibility of different explanations.

This thesis is comprised of six chapters. Chapter One provides a broad introduction to the declining crime phenomenon and has stated the purpose of the thesis. Chapter Two provides a synopsis of the research literature exploring the explanations for declining violent crime rates. Chapter Three outlines the methodology used in the present research study. Chapter Four presents the overall crime trends. Chapter Five provides an evaluation of different explanations for the decline in violent crime rates. This thesis concludes with Chapter Six, a summary and discussion of the findings and conclusions.

Chapter Two

Literature Review

EXPLAINING CHANGES IN CRIME RATES

A review of the relevant research literature has uncovered widespread disagreement as to the explanations that account for the violent crime decline. The following section provides a discussion of the major explanations found in the literature. It is clear that many of the proposed explanations are inter-related. In order to facilitate a focused review, I have decided to include only those studies that refer to the current crime decline (in the 1990's). Studies discussing earlier crime declines and those focusing on general correlates of crime have been excluded.

This thesis takes as its point of departure the position that there has been a decline in violent crime rates in Canada. However, even this is not without controversy. There is some considerable debate among scholars on this issue particularly with regard to youth crime trends. For example, Gabor (1999, 2000) argues that we need to consider more than simply quantitative statistical analyses of crime data. His commentary forms part of the debate on this issue in Canada.

Establishing whether the decrease in official crime statistics reflects a genuine decline in offending is beyond the scope of this paper. This thesis accepts the position that the decrease in adult offending captured by the aggregate UCR does reflect a true decline in crime. However, the reader is cautioned at this point that some experts contest this position.

Potential Explanations

(1) The availability and accessibility of firearms

Many scholars claim that the availability of firearms is a contributing factor to violent crime levels (Blumstein and Rosenfeld, 1998; Blumstein, 2000; Johnson et al., 2000; Wintermute, 2000). For example, Garen Wintermute has undertaken a comprehensive examination of national police reported crime statistics focusing specifically on firearm related violence. He argues that firearm violence and firearm related crime accounts for nearly the entire current decrease in overall rates of serious violence, especially homicides, in the United States (Wintermute, 2000, p.45).

Wintermute's premise is that "the more guns there are, the more gun crime there is" (2000, p. 46) He cites numerous correlational studies which have established a strong relationship between gun availability and rates of gun violence³. Crimes committed with a firearm, as opposed to other weapons, are more likely to be completed (Rand 1990, 1994) and are more often fatal in their consequences. According to the United States Uniform Crime Reports (UCR) "assaults committed with firearms were 4.6 times as likely as assaults committed with a knife or similar weapon to result in a fatality" (FBI, 1999 in Wintermute, 2000, p.47).

Wintermute cites statistics from UCR that show two distinct trends. He compared firearm versus non-firearm involvement for the crimes of homicide, aggravated assault and robbery. At two distinct times, he examined the percentage of these crimes involving firearms. His data reveals that for all three-crime categories, there was a more substantial decline for those that were firearm related. Wintermute cites a list of approximately ten different interventions that he believed have contributed to declines in crime rates. These

³ The citations for the correlational studies include: Cook, 1981, 1991; Hawkins 1997; Reiss and Roth, 1993; Wintermute, 1997; Zimring and Hawkins, 1997

interventions range from the stiffening of penalties for gun related crimes, the limiting of the number of gun dealers, restrictions on buyers and bans or restrictions on the acquisition of particularly lethal models of firearms.

While Wintermute presented a seemingly compelling argument, his work was not an experimental design. He has presented the interventions that he believed to be a contributing factor in the decline, but he has not empirically tested their contributions. Therefore, it remains unclear as to what the relative contribution of each factor might be.

(2) Prison/Incarceration effect

“The rate of imprisonment in the United States has risen sharply over the past two decades, tripling from 1980 to the mid-1990s” (Blumstein and Beck, 1999 in Rosenfeld, 2000, p.143). It is plausible that this dramatic increase in prison populations would have an impact on the crime rate (since those who are at higher risk of offending, are perhaps being removed from the environment where they could offend). There is, however, a great deal of disagreement regarding the actual impact of incarceration on crime rates and it is almost impossible to determine whether or not decreases in crime should be attributed to the incapacitative effect of incarceration or to the deterrent effects of prison on potential prisoners (Blumstein, Cohen and Nagin, 1978).

Most of the studies looking at the influence of incarceration rates on changes in the level of homicide combine incapacitation and deterrence in a single measure and do not attempt to isolate their separate effects (Rosenfeld, 2000, p. 144). Those studies found small or insignificant results (Levitt, 1996; Marvell and Moody, 1994; Zimring and Hawkins, 1995; Fagan, Zimring and Kim, 1998)

Rosenfeld employed a distinct method to estimate the impact of the growth in incarceration on the homicide rate. His method assumes that:

incarceration averts homicides only through incapacitation (i.e., assumes no deterrence effects), makes no assumptions about other conditions affecting homicide, and requires measurements of only three quantities: yearly change in homicides, yearly change in prisoners, and the number of homicides those prisoners would have committed had they remained free. (2000, p. 145)

Rosenfeld made his calculations using a national data sample from figures obtained from the Bureau of Justice Statistics as well as the FBI's Supplementary Homicide Reports. He found that a "one-percent increase in prisoners is associated with a -1.5 percent change in total homicides" (2000, p.150). With an average growth of 67,000 prisoners per year in the 1990's, Rosenfeld determined that the growth in incarceration was an important contribution to the homicide decline of the 1990's. In fact, this growth accounted for more than one-fourth of the drop in total victims (2000, p. 148). This translates into a 15 to 20 percent decline in homicides based on incarceration effects. Research by Devine, Sheley and Smith 1988; Marvell and Moody, 1997 and Spelman, 2000 found similar results, claiming a 15-25% incarceration effect on the violent crime rate.

It is apparent that the research investigating the incarceration/prison effect is inconclusive. Some studies have shown that incarceration can reduce crime rates by as much as a 25% (Rosenfeld 2000; Devine, Sheley and Smith 1988; Marvell and Moody, 1997 and Spelman, 2000) while others argue that the effect is negligible at best (Levitt, 1996; Marvell and Moody, 1994; Zimring and Hawkins, 1995; Fagan, Zimring and Kim, 1998)

(3) Drugs and alcohol

Many researchers (Blumstein and Rosenfeld 1998; Parker and Cartmill 1998; Grogger 2000; Johnson, Golub & Dunlap 2000) argue that the illegal drug market and the consumption of alcohol have an effect on crime rates. Grogger (2000) cites the emergence and subsequent dwindling of the crack cocaine market as an important factor. By most accounts, crack cocaine first emerged in the early to mid 1980's (Kozel, 1997). Grogger (2000) claims that a smaller amount of crack was needed than cocaine to achieve a similar high and crack was much less expensive to produce. Crack was a much cheaper alternative for both users and sellers (Grogger, 2000). Grogger argues that the economic benefits of selling crack cocaine, coupled with the poor labour market of the 1980's encouraged a greater number of young, unskilled individuals to participate in the drug market. After a careful review of the literature, it seems clear that the illegal drug markets and alcohol explanations are intertwined with other related explanations such as economic opportunity.

The major offshoot of the increasing crack market of the 1980's is the violence that ensued. Crack dealers often armed themselves with handguns to protect themselves and their product (Blumstein & Rosenfeld, 1998; Johnson et al, 2000). The presence of weapons caused those purchasing crack to perceive a need to arm themselves. With the proliferation of firearms, firearm-induced violence and deaths became more inevitable and thus increased.

Grogger argues that as the rates of violence rose, the productivity of individual dealers fell (Grogger, 2000, p. 286). With violence near record levels, participating in the drug trade became extremely hazardous. Grogger argues that this fact coupled with the improvement in wages beginning in 1993 may have influenced drug market participants

to shy away from the trade. With fewer drug market participants, the violent crime rate inevitably declined.

Johnson et al. (2000) also explore the role of drugs as a factor influencing the crime rate. They argue that the “recent decline in violence reflects fundamental transformations in drug use and sales” (2000, p. 164). Using a mainly qualitative approach complimented by the use of statistics, Johnson et al. describe the three major drug eras that have occurred in New York City. They state that

from 1960 to 1975, heroin injection was the drug practice of choice among hard-core drug users and abusers. Subsequently, the popularity of heroin waned and cocaine became the drug of choice. In the mid-1980’s, the practice of smoking crack emerged. Crack involved intensive use, which led to highly competitive drug markets and increasing violence in the 1980’s. The subculture of crack use calmed down in the 1990’s leading to a decline in violence. (2000, p. 196)

Johnson et al. claim that the drug of choice for the 1990’s is a blend of both marijuana and alcohol, which involves a less violent lifestyle than crack cocaine. Johnson et al. do not believe that the decreased use of hard drugs is solely responsible for violent crime declines. Johnson et al. also cite an increased eagerness to enter the legal workforce due to the expansion of the U.S economy as a contributing factor to the violent crime rate decline. (2000, p. 197)

Parker and Cartmill (1998) assert that the decline in homicide rates is related to decreased alcohol consumption. They used a multivariate time series analysis looking at the United States from 1934 to 1995. By comparing the variables of homicide rate and alcohol consumption over time, they found “a pattern emerged in which changes in alcohol consumption typically foreshadow[ed] changes in the homicide rate” (Parker and

Cartmill, 1998, p. 1373). The pattern was such that when alcohol consumption level declined, homicide rates followed a year later. The authors conclude that it would be unacceptable to claim that a decline in alcohol consumption is the fundamental or only reason why homicide rates are falling. However, their study “clearly raises the notion that alcohol consumption...[is] a testable and reasonable hypothesis for consideration (Parker and Cartmill, 1998, p. 1374).

(4) Changes in economic opportunity

Many scholars (Witkin 1998; Hoover 2000; Blumstein & Rosenfeld 1998; Grogger 2000) argue that a strong economy can cause a shift from illegitimate (i.e. crime) to legitimate work (paid employment in the workforce). This argument has been the basis of the economic opportunity theory explaining the declining crime rates of the early 1990's. Blumstein and Rosenfeld assert that “the role of opportunities in the legitimate labor [sic] market interacts in complex ways with changes in the illicit opportunity structure of distressed urban communities” (1998: 1210) They argue that groups at high risk for violent crime (such as racial minorities, teenagers and high school dropouts) have made substantial economic gains as a result of the increase in low skilled jobs in the early 1990's. In addition, these researchers believe that the combination of a decreasing crack market (illegitimate work) and an increase in low skilled jobs (legitimate work) reduced the economic attraction of crime for high-risk groups, thus reducing the crime rate. They do not cite the improvement in economic opportunity as their sole explanation for declining crime rates but rather propose it as a contributing factor.

Grogger (2000) also argues that improved economic conditions play a role in decreasing crime rates. He proposes a relationship between wages and crime as opposed

to unemployment levels and crime. Utilizing data from the Bureau of Labor Statistics' Annual Earning Files, Grogger demonstrates a sharp drop in real wages from 1979 to 1993 (2000: 283). However, starting in 1993, the downward trend in wages began to reverse and the median wage increased. The thrust of his argument is that the recent wage growth in low-skill labour markets is a contributing factor for the recent decline in violent crime rates (2000:267).

Grogger offers an economic formula⁴ to explain his theory about median wages and the violent crime rate. This formula contains variables such as: the amount of time devoted to the labour market, crime, leisure and the market wage. This model has a "simple participation rule: the agent will work if the wage is high enough, and a worker will commit crime if the returns [of] crime exceed the wage" (Grogger, 2000:270) Grogger found that on average, wages were fifteen percent higher among non-offenders than among offenders.

Therefore, studies have shown that increased economic opportunity, either through employment or increased wages may indeed be a factor in explaining the decrease in violent crime rates.

(5) Changes in demographic patterns

The changing demographic composition of North America has also been linked to the recent decline in crime rates (Blumstein and Rosenfeld 1998; Steffensmeier and Harer, 1999; Tremblay 2000; Rosenfeld 2000; Fox 2000; Carrington 2001; Karmen 2001; Ouimet 2002; Foote, 2000). "The role of demographic change as a determinant and predictor of crime rates was established by studies in the rise in American crime rates in the 1960's and their fall in the 1970's and 1980's" (Carrington, 2001: 332). The

⁴ See Grogger page 269 in Blumstein and Wallman (2000) for a more detailed explanation of the formula.

underlying principle of the demographic argument is that “all else [being] equal, violent-crime rates rise as the percentage of the population in the more violence-prone age-race-sex groups (that is, young adult males, especially minorities) expands” (Fox, 2000: 289). Conversely, the theory also states that as the high crime prone age groups decrease in size, so does violent crime.

A Canadian study by Tremblay (2000) used national crime and demographic statistics that looked at proportional changes to the Canadian population. He argues that the decline in crime rates has coincided with the decreasing proportion of persons aged 15-24 during this time period. Since 1991, the crime rate has decreased by 25% and the population 15-24 is down by 6%. This is significant since the 15-24 age category is responsible for committing a large number of offences. In 1999, persons aged 15-24 accounted for 30% of persons charged with violent crimes (Tremblay, 2000, p.5). Furthermore, Tremblay (2000) displays statistics showing an average increase of 2.5% in the 55+ age group. This is of great consequence since the 55+ segment of the population has the lowest involvement in crime. Hence “the growth of this segment of the population will certainly have an influence on criminality...over the years to come⁵” (Tremblay, 2000, p.5).

Research conducted by Fox (2000) attempted to quantify the contribution that changing demographic patterns had on crime rates. Fox analyzed American homicide patterns between 1991 and 1998. He plotted the homicide rate for each year, the percentage change in these rates over the 1991 base year, the “predicted” rates based on demographic change alone and the percentage change in predicted aggregate rates based on demographic change. He surmised that demographics alone could not account for the

⁵ Carrington (2001) while not accounting for the current decline, has undertaken research with Canadian data to project the impact of demographics on crime for 1999-2041

sharp decline in homicide rates. In fact, Fox argued that the impact of demographics on the homicide rate was in the range of only nine to sixteen percent.

Therefore, there is some indication in the literature that changing demographic trends may be a contributing factor in the declining crime rates, yet it is unclear as to what the magnitude of the impact is.

(6) The Effect of Policing

There are many researchers who believe that the decline in violent crime is at least partially attributable to changes in policing practices. For example, Marowitz writes that “the effectiveness of New York City’s aggressive zero-tolerance, order maintenance policing is both the most widely accepted and most hotly debated factor affecting the recent decline in the crime rate” (2000:10). Kelling and Bratton (1998) are supporters of the aggressive policing argument. Using the broken windows theory, (whereby if a window is broken in a building and is left unrepaired, it will not take long before all the windows in the building will also be broken (Marowitz 2000:8), they argue that assertive policing tactics in 1994 led to the decline in violent crime rates in New York City. Kelling and Bratton describe the change in crime rates in New York City since 1994. Their argument is somewhat unconvincing since they assert that police action *must* (emphasis added) have played a pivotal role in reducing crime as there are no credible alternatives available to contradict their belief (Kelling and Bratton, 1998, p. 1227).

Anderson (1997) indicates that increased community policing strategies such as increased foot patrols and crackdowns on minor offences must be responsible for the decreasing crime rates in New York City. He argues that homicide rates began to plunge after community-policing tactics were implemented. Blumstein and Rosenfeld (1998)

also cite policing policies as a factor in decreasing violent crime. They contend that policing programs aimed at removing guns from youth have caused a decrease in gun use, and that this has resulted in a reduction in the homicide rate.

Fagan, Zimring and Kim (1998) conclude that it is not plausible to attribute the decreases in non-handgun homicides in New York City to changes in police practices. They argue that the decline in non-gun homicides “starts too early and continues too evenly throughout the period under study to have any plausible linkage to changes that come into [New York City] two or three years into the 1990’s” (Fagan, Zimring and Kim, 1998:1319). Donohue (1998) concurs with Fagan et al. about new policing strategies not being responsible for the decline in violent crime. He argues that there have been major decreases in violent crime in other cities such as Los Angeles and Washington D.C where the policing strategies remained the same over the period in question (Donohue 1998: 1445)

There are also numerous studies claiming to demonstrate a link between police strength (number of police per population) and the crime rate. Deterrence theorists such as Levitt (1997) argue that more police officers result in less crime (negative effect). Researchers such as Koenig (1996) disagree and claim that more police officers result in more crime. Eck and Maguire tackle the possible link between numbers of police officers and declines in the violent crime rate. Of the 27 studies reviewed, there were 89 dependent variables tested. The results showed that of the 89 variables:

49.4% found no effect of police on crime, 30.3% found a positive effect of police strength on violent crime (i.e., more police results in more crime), 20.2% found a negative effect (i.e., more police results in less crime). Thus...there is not a

consistent body of evidence supporting the assertion that hiring more police is an effective method for reducing violent crime. (Eck and Maguire, 2000, p. 214)

Eck and Maguire also acknowledge a fundamental problem when looking at the relationship between police and crime. A chicken and egg dilemma can arise as it is difficult to “determine if more police reduce crime or if more crime increases police hiring” (2000, p. 209).

(7) Changes in reporting rates

Kennedy and Veitch (1997) examined the sharp decline in crime rates in Edmonton between 1995 and 1997. They hypothesized that decreased reporting on the part of crime victims could be a factor affecting the decreased crime rates in that city. By comparing a city wide victimization survey with UCR data for Edmonton, their study concluded that “reporting levels remained high (despite diversion of complaints to community stations) while crime rates [had] dropped” (Kennedy & Veitch, 1997:65) In other words, they concluded that there was no significant change in reporting to the police over the time period studied, thus reporting could not be a factor in the declining crime rates. However, one must be cautious in assessing their results as it is only at a city level. This is because the victimization survey used in the Kennedy and Veitch study “does not canvas a large number of respondents and so may not provide a sufficiently sensitive measure of changes in victimization” (Kennedy & Veitch, 1997:65)

Summary

A careful review of the research literature on the declining crime rates has generated many competing explanations for why crime is in fact on the decline, at least in

official statistics. Most researchers agree that there is a complex relationship between the explanations offered, and that it is extremely difficult to isolate the effects of each factor.

It is the purpose of this thesis to analyse just four of the factors that were mentioned in the literature review. These explanations include the economic opportunity, changes in demographics, changes in police staffing levels and changes in reporting. These factors will be analyzed in isolation from each other while keeping in mind that the interactions between the variables are important.

There are many reasons why only four explanations were chosen. Firstly, the aforementioned four explanations were mentioned repeatedly in the literature as being the possible explanations to account for the violent crime rate decline. Secondly, Canadian trend data for the twenty year period between 1979 and 1999 was available for these four explanations. Thirdly, I chose these four explanations in order to provide a diversified cross section of issues found in the literature.

Chapter Three

METHODOLOGY

OVERVIEW

The data essential for the completion of this study was obtained from six Statistics Canada surveys. These six surveys include the following: the Aggregate Uniform Crime Reports (UCR), the Incident Based Uniform Crime Reports (UCR2), the Labour Force Survey (LFS), The Annual Demographic Statistics (produced by the Statistics Canada Demography Division) the Police Administration Survey and the General Social Survey. This chapter will state the research questions, identify key concepts relevant to the study and provide a synopsis of the methodology employed by each of the surveys mentioned above. .

The following research questions will be addressed:

- a) What crime trends are apparent between 1979 and 1999 in Canada?
- b) How significant is the violent crime rate decline between 1993 and 1999?
- c) Which groups (by age and sex) were primarily responsible for committing most violent crime?
- d) Did all the specific violent crimes decline between 1993 and 1999? By how much?
- e) What were the trends in the unemployment rate between 1993 and 1999? Did the trends differ by sex? Or by age?
- f) What were the demographic trends between 1993 and 1999? Are there an increasing, decreasing or relatively stable proportion of the high-risk age groups?
- g) Did the rate of police per 100,000 population increase, decrease or remain stable between 1993 and 1999?

h) Has reporting of violent crimes to the police increased, decreased or remained stable between 1993 and 1999?

The Key research question is:

i) Are the unemployment, demographic, police strength or reporting explanations plausible based on Canadian data?

KEY CONCEPTS

Throughout this research project, a number of concepts will be referred to frequently.

Each of these concepts will be identified and briefly defined below:

- a) *Crime Rate*: Rate of police reported crime incidents per 100,000 population.
- b) *Violent Crime*: An offence category defined by Statistics Canada and which includes the Criminal Code offences of homicide, attempted murder, assault, sexual assault, other sexual offences, abduction and robbery.
- c) *Labour Force*: The number of civilian, non-institutionalized persons who during the reference week were employed or unemployed.
- d) *Unemployment Rate*: The number of unemployed persons expressed as a percentage of the labour force.
- e) *Police Officers*: Counts represent the “actual” number of sworn police officers as of June 15th of the fiscal year that is being reported (See Swol, 1999).

DATA SOURCES

Uniform Crime Reporting Survey

For this study I will be utilizing two sources of crime data. Both are drawn from the Uniform Crime Reporting Survey; however there are two levels of detail captured by the Uniform Crime Reporting Survey (Tremblay, 1999:14).

A) Aggregate Uniform Crime Reports Survey (UCR)

The first source is the *Aggregate Uniform Crime Reports Survey*⁶. In continuous use since 1962, the aggregate-based UCR survey records the number of incidents reported to the police. This includes the number of reported incidents, number of actual offences, number of offences cleared by charge or cleared otherwise, number of persons charged (by sex and by adult/youth breakdown) and number of youths not charged. The aggregate UCR survey does not capture any data on victim characteristics or other variables relating to the crime incident or the perpetrators.

The aggregate UCR survey classifies incidents based on the most serious offences within the incident. This is generally the offence that carries the highest maximum sentence prescribed by the *Criminal Code*. Violent offences, however, always take precedence over non-violent offences (Tremblay, 1999:14). In addition, violent incidents are scored differently than other offences. That is, a separate offence is recorded for each victim, with the exception of robbery offences. This is done to avoid inflating the number of victims of a robbery since there are usually many individuals present in places such as banks and convenience stores where robberies take place.

In relation to survey coverage, the Aggregate UCR survey has close to 100% coverage in terms of police respondents' compliance. In rare occurrences where the police force is unable to submit data to the Canadian Centre for Justice Statistics (hereinafter referred to as the CCJS), estimates are calculated for the force in question (Tremblay, 2000: 14-15).

⁶ The methodology of the UCR survey has been paraphrased from *Crime Statistics in Canada* (Tremblay, 2000).

B) Incident-based Uniform Crime Reporting Survey (UCR2)

The second source for crime data is the *Incident-based Uniform Crime Reporting Survey (UCR2)*, which became operational in 1995 alongside the UCR. UCR and UCR2 data are collected simultaneously and are converted from incident-based to aggregate counts at the end of each calendar year. Unlike the aggregate UCR survey, the UCR2 survey captures more detailed information about criminal incidents that have been reported to the police. This increased level of detail includes age and sex characteristics of both the victims and the accused.

The UCR2 survey does not have 100% coverage across Canada, and therefore, is not geographically representative of Canada as a whole. As of 1999, this level of detailed data was only being collected from 164 police services in seven provinces. This figure represents only 46% of the national volume of police reported actual Criminal Code offences (Tremblay, 1999:14), yet new police forces are being converted to the UCR2 each year. The UCR2 also contains a trend database. This trend database contains data from the 106 police services that have contributed data to the UCR2 every year since 1995 when it became operational. The police services included in the trend database accounted for 41% of the national volume of police reported crime in 1999.

Labour Force Survey⁷

The Labour Force Survey (LFS) is a household survey, which is carried out monthly by Statistics Canada. This survey classifies the working age population (those aged 15 and over) into three categories: employed, unemployed and not in the labour force. The LFS is conducted in approximately 54,000 households across Canada. Not

⁷ The following description of the labour force survey is derived from Guide to the Labour Force Survey, Catalogue 71-543-GIE, February 2001:16

everyone in Canada has the opportunity to be included in this survey. Those persons who are excluded include residents of the Northwest Territories, Nunavut, residents of Indian Reservations, hospitals, penitentiaries and long term care facilities. Full-time members of the armed forces are also excluded. The LFS follows a rotating panel sample design where households remain in the sample for six consecutive months (Guide to the labour force survey, 2001:16). Demographic and employment information is obtained about every person living in the selected household.

Annual Demographic Statistics

The demographic estimates utilized by Statistics Canada are either categorized as intercensal or postcensal (Annual Demographic Statistics, 2000:200). The intercensal estimates are comprised of estimates between census years while postcensal estimates refer to the non-census years after the most recent census. Of the two types of estimates, the intercensal estimates constitute the more accurate population measure⁸.

Police Administration Survey

The Police Administration Survey conducted by the CCJS is the primary mechanism for the collection of national statistics relating to personnel and expenditures from municipal, provincial and federal police forces (Swol, 1999, p.6). All municipal, provincial and the Royal Canadian Mounted Police provide information for this survey with a few exceptions. These exceptions include the Canadian Security Intelligence Service, Ports Canada, railway and military police.

⁸ For a more detailed description of the methodology used to compile Canada's demographic data please see the annual demographic statistics Catalogue no. 91-213-XIB

The survey collects data about personnel and police expenditures. Personnel counts are established on permanent, full time and part time employees. Part time employees are converted into full time equivalents. For example, five employees working eight hours a week would be considered one full time employee. The personnel counts include all sworn officer as of June 15th of the calendar year (See Swol, 1999, p.6). The police expenditures include the actual operating expenditures such as salaries, wages and benefits, accommodation costs, fuel and maintenance. This figure does not include capital expenditures such as revenues and recoveries.

General Social Survey (GSS)

The GSS is a survey that is conducted annually that “monitors changes in Canadian society and provides information on specific policy issues of current or emerging interest” (Mihorean et al., 2001: 74). Every year there is a specific topic that is covered. Regular topics include time use, technology and victimization. In 1988, 1993 and again in 1999, Statistics Canada asked surveyed respondents about victimization. The objectives of the survey were:

to provide estimates of the incidence of eight offence types, to examine factors related to the risk of victimization, victims' willingness to report crimes to the police, reasons for not reporting, and to measure public perceptions of crime and the criminal justice system (Mihorean et al. 2001: 74)

Data collection for the GSS occurs through the process of interviews and the input of data into a standard questionnaire. The sampling procedure used was random digit dialling in each province. Only persons who were 15 and over were included in the survey.

Households that did not have a telephone or individuals who were institutionalized were excluded from the survey. The 1999 GSS had a response rate of 81%.

Methodological Limitations

There are several limitations of this study that need to be identified. First, this study looked at the changes in the independent and dependent variable over a specific twenty-year period in order to assess possible associations. Since quantifiable correlations were not undertaken, the results of this study may not necessarily be generalized to other research. In addition, associations between independent and dependent variables do not preclude the influence of a third unidentified variable (Palys, 1997: 347). Furthermore, since this research is limited to the period between 1979 and 1999 only, the findings of this study may not reflect the factors influencing crime trends during other periods.

The Uniform Crime Reporting Surveys (UCR and UCR2) are subject to various sources of error. These surveys rely on public reporting rates to the police as well as police detected crime. Therefore the UCR does not account for the dark figure of crime. Second, the UCR surveys are affected by police discretionary power and changes in policies and practice in relation to how data are captured (Mihorean et al, 2001:5). The effect of these limitations cannot be easily quantified.

There are limitations associated with victimization surveys such as the GSS. First, there is the possibility of sampling errors. These are the differences between estimated values for the sample and actual values for the population (Mihorean et al, 2001:5). Second, there are non-sampling errors. Examples of non-sampling errors include: the

inability of respondents to accurately recall events, refusal by respondents to report and errors in the coding and processing of data (Mihorean et al. 2001: 5).

Limitations of the LFS include both sampling and non-sampling errors. Non-sampling errors for the LFS could occur when interviewers misunderstand questions or when answers may be incorrectly entered into the questionnaire (Guide to the Labour Force Survey; February 2001; 20). Since the LFS produces estimates based on information collected from a sample of individuals, sampling errors may occur. An example of a sampling error in the LFS is the standard error. The standard error is “a valuable piece of information because it indicates the extent to which sample estimates will be distributed around the population parameter (Maxfield and Babbie; 1998: 215)

This project has relied on a variety of surveys for the data component. Despite the benefits from such a multi-faceted analysis, there are drawbacks to using various data sources. These drawbacks include the fact that the limitations of each data source, such as sampling errors, response rates etc. from each source become compounded.

Finally, since the author was relying on previously collected data from various Statistics Canada surveys, the author had no input into the methodology of each survey. Therefore there was no influence as to which variables would be collected. In addition, the author had to rely on surveys in which there was trend data available for each variable. As a result, I was not able to perfectly match variables found in the literature with variables found in previously collected Statistics Canada surveys. For example, some age cohorts were grouped differently in the literature than they were by Statistics Canada.

Chapter Four

RECENT CRIME TRENDS IN CANADA

This chapter summarizes the recent crime trends in Canada. The Canadian crime trends are drawn from the aggregate-based Uniform Crime Reports (UCR) and the incident-based Uniform Crime Reports (UCR2). As previously mentioned, UCR data are based solely on police-reported crime. The data shown in this chapter will provide insight into the crime trends of the twenty-year period between 1979 and 1999. In particular, the analysis will focus on violent crime trends, highlighting the major decline between 1993-1994 and 1999-2000. Data will also be presented pertaining to the age and gender of those persons accused of violent crimes. For the purpose of this study, violent crime includes homicide, attempted murder, assault, sexual assault, other sexual offences, abduction and robbery.

General crime trends

In 1999, 2.36 million Criminal Code incidents, excluding traffic and drug incidents, were reported to the police and recorded by the UCR survey. These incidents translated into a crime rate⁹ of 7,733 per 100,000 population (Table 1 and Figure 1). The overall crime rate in Canada peaked in 1991 and has steadily declined since then, almost returning to 1979 levels by 1999 (as shown in Figure 1). In 1999, the crime rate was 25.2% lower than the 1991 peak. During this decline, annual drops ranged from 0.9% to 5.0% (Table 1). There were no annual increases during the 1991-1999 period.

⁹ Crime rates are based on 100,000 population (Tremblay, 1999, p.3). They are calculated using yearly population estimates from Statistics Canada, Demography division.

The crime rate in Canada is comprised of three main categories: violent incidents, property incidents, and “other Criminal Code” incidents shown in Table 2 and Figure 2. Violent incidents include offences such as homicide and sexual assault. Examples of Property offences include theft and Break and Enter. “Other Criminal Code” offences include such crimes as (but not exclusively) prostitution, arson, mischief, bail violations and disturbing the peace. These offences are mainly against justice administration, ‘quality of life’ (disturbing the peace) and public or private property (mischief) (Tremblay, 1999, p. 10).

In 1999, the violent crime rate was 955.5 incidents per 100,000 population as shown in Table 3. Figure 3 shows that violent crime declined in the year 1998-1999 for the seventh consecutive year. In fact, since the peak year of 1992, the violent crime rate declined 11.8% by 1999. These annual declines have ranged in size from 0.3% in 1993 to 3.7% in 1995. This decline in the violent crime rate is unprecedented since 1962 when the UCR began. Prior to this decline “the violent crime rate had increased for 15 straight years” (Tremblay, 2000: 6). The violent crime decline over the period of 1993-1999 is the dependent variable in this study. Therefore data will be displayed in graphical format for the twenty-year period between 1979 and 1999; but will be in tabular format for the violent crime decline between 1993 and 1999 only, since this is the principal focus of this thesis.

The two other categories that make up Criminal Code incidents also declined over this period as seen in Table 2 & Figure 2. Since their peak year of 1991, Property Crime rates are down 30.8% while the rate of Other Criminal Code offences are down 19.6%.

At this point we turn to examine specific offences and offence categories.

Specific offences involving violence

Homicide

In 1999-2000, police across Canada recorded 536 homicides¹⁰. This translates into a homicide rate of 1.8 per 100,000 population as shown in Table 5. The homicide rate was at its peak in 1982, 1983 and 1985 when it was 2.8 per 100,000 population. Since the violent crime decline began in 1993, the homicide rate has ranged from 2.2 per 100,000 in 1993 to its current low of 1.8 per 100,000. This drop from 2.2 per 100,000 population to 1.8 per 100,000 population converts into an 18.2% reduction in the homicide rate between 1993 and 1999. Table 5 demonstrates that homicides made up a very small proportion (0.2%) of all violent incidents in 1999. This is consistent in each year between 1993 and 1999 where homicides have made up 0.2% of all violent offences.

Attempted Murder

In 1999, police recorded 685 incidents of attempted murder across Canada. These incidents translate into an attempted murder rate of 2.3 per 100,000 population as shown in Table 4. Since the start of the violent crime decline in 1993, the attempted murder rate has ranged from a high of 3.4 per 100,000 population in 1993 to a low of 2.3 per 100,000 in 1999. This is a decline of 32.4%.

As with homicide incidents, attempted murder incidents made up a very small proportion of less than one percent (0.2%) of all violent incidents in 1999 (Table 5). Since the start of the violent crime decline, attempted murder made up 0.3% of all violent incidents each year until 1999 when it decreased further to 0.2%.

¹⁰ The category of Homicide includes first and second degree murder as well as manslaughter and infanticide (Tremblay, 1999, p.6)

Sexual Assault

There were 27,173 sexual assault¹¹ incidents in Canada in 1999 recorded by the police. This translates into a sexual assault rate of 89.1 per 100,000 population as shown in Table 4. This rate hit its peak in 1993 when it was at 135.6 per 100,000 population. The decline between the 1993 rate and 1999 rate was a substantial 34.3%. The largest annual decrease was noted in 1995 when the sexual assault rate dropped by 11.7% from the previous year. The smallest annual decline was noted in 1997, when it dropped 0.1% from 1996. Sexual assaults¹² made up 9.3% of all violent incidents in 1999 as demonstrated in Table 5. In 1992 and 1993, the proportion of all violent incidents that were sexual assaults was at its peak, comprising 12.5%. Since the violent crime decline, the number of sexual assaults as a proportion of all violent incidents has become progressively smaller, decreasing by 0.1% to 1% per year.

Assault

There were 233,465 assault incidents¹³ reported to the police in Canada in 1999. These incidents translate into an assault¹⁴ rate of 765.7 per 100,000 population seen in Table 4. The peak year within the twenty-year period for assaults was in 1993, when the rate was 830.9 per 100,000 population. As the volume of violent crime began to decline, the assault rate has ranged from a high in 1993 of 830.9 per 100,000 population to its low of 765.7 per 100,000 population. This converts to a 7.8% decline in the assault rate

¹¹ In order to be able to compare sexual assault data historically between 1979 and 1999 this analysis groups together sexual assault Level 1, 2 and 3 and other sexual offences.

¹² One has to consider that the legal definition of sexual assault changed in 1993. This could have influenced a change in reported sexual assault incidents in 1993.

¹³ In order to be able to compare assault data historically between 1979 and 1999 this analysis groups together Assault Level 1, 2 and 3 and other assaults.

¹⁴ One has to consider that the definition of assault changed in 1993. This could have influenced a change in reported assault incidents in 1993.

between 1993 and 1999. The largest annual decline occurred in 1995 when the assault rate decreased by 3.4% from 1994. Assaults comprised over three quarters (80.1%) of all violent incidents in 1999 (Table 5). Since the violent crime decline, this is the only offence category that has been increasing in proportion. This growth has ranged from a 0.1% increase in 1996 to a 1% increase in 1994.

Robbery

In 1999, there were 28,745 robbery incidents reported to the police, a robbery rate of 94.3 per 100,000 population as demonstrated in Table 4. The robbery rate peaked in 1991, when it was 118.6 per 100,000 population. Since the violent crime decline began, the robbery rate has not been falling every year. In 1993, the robbery rate was 104.4 per 100,000; it decreased 4.3% in 1994 but was up slightly in 1995 and 1996 by 3.4% and 3.8% respectively. Overall, robbery fell 9.7% from 1993 to 1999.

In 1999, robberies accounted for just under ten percent (9.9%) of all violent incidents (Table 5). Robberies made up their largest proportion of violent incidents in 1981 and 1982 when they comprised 16.2% of violent incidents. Before the violent crime decline began in 1993, robberies made up 9.7% of violent incidents. During the violent crime decline, robberies as a proportion of violent incidents fluctuated between 10.7% and 9.6%.

Abduction

Since abduction only became a Criminal Code offence in 1983, data is only provided beginning in 1983. In 1999, there were 726 abductions reported to the police in Canada while the abduction rate was 2.4 per 100,000 population (Table 4). The abduction

rate peaked in 1992 when it was 4.3 per 100,000 population. Since violent crime began to decline in 1993, the abduction rate has been declining every year. There were no annual declines between 1996 and 1997 when the rate remained 3.3 per 100,000 population. Overall, the abduction rate has fallen by 42.9% since 1993, the largest decline of any violent offence category. Abductions made up a very small (0.2%) proportion of violent offences in 1999 (Table 5). In 1985, 1984 and 1988, abductions made up their largest proportion of violent offences at 0.5%. Since 1993, they comprised 0.4% to 0.2% of violent incidents.

Specific offences that are responsible for the declining rate of violent crime

The trends for each of the principal violent offences have been presented. Now it is time to explore the source of the overall decline in the violent crime rate over the period in question. In order to answer this question the following analysis was performed. The 1999 violent crime rate (955.5) was subtracted from the 1993 violent crime rate (1080.7). This number (125.2) became the denominator and represented 100%. The 1999 offence proportions were then subtracted from the 1993 proportions for each offence category. The change in proportions for each offence category became the numerator, and were divided by 125.2 to get the percent contribution for each offence.

Figure 4 reflects the relative decline of each offence category while also giving an indication of which offences have contributed the greatest to the decline. The 11.6% decline¹⁵ in the violent crime rate was largely driven by a decline in assault offences which accounted for over half (52%) of the decline, sexual assault offences accounted for

¹⁵ It is important to put this statistic in context. Although the almost 12% decline in the violent crime rate reverses a trend going back to 1979, the magnitude of this decline is relatively modest- on average, only 2% per year. The decline in the violent crime rate pales in comparison to the decline in property crime rates, which were much more substantial.

37.1% and robbery offences accounting for 8.1% (Figure 5). Abduction accounted for approximately one percent (1.4%) while attempted murder and homicide were 0.9% and 0.3% respectively. It is not surprising that assaults have the greatest effect on the violent crime rate since they have historically accounted for approximately three quarters of all violent crimes (Table 5).

Profile of those accused of violent offences

The purpose of this section is to provide the reader with a profile of those accused of violent offences by presenting age and gender specific crime rates for 1999-2000¹⁶. UCR2 data are available from 1996-1999, however, since each year includes a different number of reporting police services, it was decided that it would be problematic to average the years 1996-1999.

Age and gender specific crime rates are drawn from data collected by the Incident-Based Uniform Crime Reporting (UCR2) Survey¹⁷. In 1999, these data included a sample of 164 police agencies representing just under half (46%) of the total national volume of crime (Tremblay, 1999: 5). An analysis of age specific crime rates (see Table 6) shows that the younger the accused's age, the more likely it is that they will be accused of a violent offence¹⁸. Persons aged 15-24 account for 30.2% of all violent offences captured by the UCR2. This is followed by persons aged 25-34 (25.9%), persons aged 35-44 (23.1%), persons aged 45-54 (9.0%) and those persons 55 and over (4.3%).

¹⁶ The year 1999-2000 was chosen in order to provide the most recent snapshot

¹⁷ These crime rates are calculated using the age distribution of accused from UCR2 based on the age of population for all census sub-divisions pertaining to UCR2 survey respondents (Tremblay, 1999: footnote 34).

¹⁸ Please note that the numbers do not add up to 100% due to rounding and the exclusion of persons aged 14 and under.

In every specific violent crime category except sexual assault, persons aged 15-24 are the most often accused. Persons aged 15-24 are accused of 49.7% of robberies, 42.6% of homicides, 42.4% of attempted murders, 37.2% of abductions and 30.0% of assaults. For sexual assault it is slightly more likely that the person accused will be aged 35-44 (22.4% of accused) than 15-24 (22.0% of accused). It is interesting to note that persons accused of sexual assault are spread more evenly among the youngest three age groups than they are for the other violent offences.

Table 7 demonstrates that males account for over three quarters (83.9%) of all violent incidents. In terms of specific offence categories, males are accused of almost all (97.5%) sexual assaults, 93.6% of all homicides, 90.8% of robberies, 88.6% of attempted murders, 87.7% of abductions and 81.9% of assaults. It is clearly evident that males are disproportionately accused of violent offences, relative to the percent of males in the general population (see demographic trends section for more detail).

Table 8 isolates this trend by age groups. It shows that in all violent crime categories with the exception of sexual assault, males aged 15-24 are the most likely (25.1%) to be accused. Males aged 25-34 (21.9%) are the next likely to be accused of violent offences followed by males ages 35-44 (19.6%), males aged 45-54 (7.8%) and finally those aged 55 and over (3.8%).

When broken down by age group and offence category, a similar picture emerges. Males aged 15-24 are accused of most robberies (45.4%), attempted murders (39.9%), homicides (39.7%), abductions (31.9%) and assaults (24.1%). Sexual assault is the only exception whereby males aged 35-44 are more likely (21.9%) to be accused than males aged 15-24 (21.4%). Also of note is that males aged 25-34 are also accused of (21.3%) of

sexual assaults followed by males aged 45-54 (12.5%) and males 55 and over at (9.6%).

Sexual assault is the most evenly distributed offence among all the age groups.

For female accused by age groups and offence categories (see table 9) females aged 15-24 are most often (5.2% of total) accused of violent crimes. Females aged 15-24 are accused of 5.8% of all assaults, 5.2% of abductions, 4.3% of robberies, 2.9% of homicides, and 0.7% of sexual assaults. The only exception to the above is that females aged 25-34 are most often accused for the offence of attempted murder (4.3%) followed by females aged 15-24 (2.4%).

In summary, this section has provided evidence isolating the male age group of 15-24 as being very high risk for offending in almost all violent crime categories. Males aged 15-24 commit 25.1% of all violent crime. The male age group of 25-34 is also at high risk for offending. This group commits 21.9% of all violent crime. In total these two age groups commit almost half of all violent crime (47%).

Summary of crime trends

The overall crime rate in Canada peaked in 1991 and has steadily declined since then, almost returning to 1979 levels by 1999. Violent crime declined in the year 1998-1999 for the seventh consecutive year. This decline in the violent crime rate is unprecedented. Prior to this decline “the violent crime rate had increased for 15 straight years” (Tremblay, 2000: 6). All the major violent crime categories decreased between 1993 and 1999. Assault and sexual assault had the largest contributions to the violent crime decline. The male age group of 15-24 as well as the 25-34 group is at very high risk for offending in almost all violent crime categories. Having provided a portrait of

crime in Canada, we turn to the central focus of this thesis, namely, evaluating different explanations for the decline in the violent crime rate.

Chapter Five

EVALUATION OF EXPLANATIONS FOR THE DECLINE IN THE VIOLENT CRIME RATE

This chapter will evaluate the different explanations for the decline in the violent crime rate. Data relating to each explanation will be presented followed by a discussion.

(1) Unemployment rate

The following section will describe and highlight Canada's unemployment rate. The unemployment rate¹⁹ will be broken down by age and gender, paying close attention to the high-risk groups (with respect to crime) of males aged 15-24 and 25-34 years. Table 10 and Figure 5 display the unemployment rate in Canada from 1979 to 1999. It is apparent that the unemployment rate has varied considerably since 1979. The lowest unemployment rate is evident in 1979 and 1980 when it was 7.5%. The peak year was in 1983 when the unemployment rate was 11.9%. Since the violent crime decline began in 1993, the total unemployment rate (the unemployment rate for both sexes) has been declining every year except in 1996 when there was an increase of 2.1 percent. Since 1993, the annual decreases in the unemployment rate have ranged from a decrease of 9.6% in 1995 to a decrease of 5.2% in 1997. The unemployment rate of 7.6% in 1999 was 33.3% less than the unemployment rate of 11.4% in 1993.

When the unemployment rate and the violent crime rate are plotted on the same graph, (shown in Figure 6) it becomes clear that the total unemployment rate and the violent

¹⁹ The unemployment rate is the number of unemployed persons expressed as a percentage of the labour force. In addition, the labour force is the number of civilian, non-institutionalized persons who during the reference week were actively seeking employment in the previous four weeks.

crime rate both began to decline within one year of each other. The violent crime rate began to decline in 1993 while the total unemployment rate began to decline in 1994. However, prior to the violent crime rate decline, the unemployment rate and the violent crime rate moved in opposite directions.

Figure 7 describes the total unemployment rate broken down by age groups. The age groups displayed are the same age groups used in the UCR2 finding section. It is apparent that the unemployment rate in Canada follows a similar pattern to that of the UCR2 crime findings. The UCR2 shows that the younger the person the more likely he or she will be charged with a violent offence. Similarly, the younger the person, the more likely he or she will be unemployed.

Table 11 and Figure 7 also presents the changes in the unemployment rate by age groups. In the twenty-year period between 1979-1999 the unemployment rate peaked in 1983 for persons aged 15-24 at 19.2% and persons aged 25-34 years at 12.0%. In the same period, the unemployment rate peaked for the three other age groups ten years later in 1993. In 1993, the unemployment rate was the highest for those persons aged 35-44 years at 9.6%, persons aged 45-54 years at 8.5% and for persons aged 55 and over at 9.2%.

Since the violent crime rate began to decline in 1993 the unemployment rate has not consistently declined in all age groups. For persons aged 15-24, the unemployment rate was 14% in 1999 compared to 17.1% in 1993. This translates into a decrease of 18.1%. However, the unemployment rate did not decline each year and was up slightly in 1996 and 1997 when it increased 4.1% and 5.9% respectively.

Persons aged 25-34 had an unemployment rate of 7.3% in 1999 down from the 12.1% rate in 1993. This change in the unemployment rate translated into an almost 40%

(39.7%) decrease between 1993 and 1999. The unemployment rate for persons 25-34 decreased every year between 1993 and 1999 with the exception of 1996 when it remained unchanged.

In 1999, the unemployment rate for persons aged 35-44 years was 6.4%. This was down one third (33.3%) from the 1993 rate of 9.6%. The unemployment rate for persons aged 35-44 declined each year between 1993 and 1999 with the exception of 1996. The 1996 rate was up slightly (4.9%) from the previous year. The unemployment rate for persons 45-54 followed a similar pattern to that of the 35-44 age group. The 1999 rate for persons aged 45-54 years was 5.6%. This was a decrease of just over one third (34.1%) from the 1993 rate of 8.5%. The unemployment rate for the 35-44 age group decreased each year between 1993 and 1999 with the exception of 1996 when the rate increased 2.6% from the previous year.

The largest decrease in unemployment rates between 1993 and 1999 is evident in the 55 and over age group. The unemployment rate of 9.2% fell to 5.5% in 1999. This translated into a decrease of 40.2%. In fact the group of persons aged 55 was the only age group, which has seen the unemployment rate decline every year since 1993.

Table 12 and Figure 8 illustrates the male and female unemployment rates in Canada from 1979-1999. Figure 8 clearly shows that there is not much variation in the male and female unemployment rates. From 1993 to 1999, the male and female unemployment rates have followed the same gradual decline. Therefore it is reasonable to concentrate on the changes in the unemployment rates for the high crime risk groups: males aged 15-24 and 25-34.

Table 13 as well as Figure 9 show the unemployment rate for males broken down by age groups. The peak year of the unemployment rate for males aged 15-24 occurred in

1982 when the rate was 20.6%. *From 1993 to 1999, the rate dropped from 19.6% to 15.3%. This translates into a decline of 21.9%.* The rate did not decline each year between 1993 and 1999. The unemployment rate for males aged 15-24 years increased 3.7% and 1.2% respectively in 1996 and 1997.

The peak year of the unemployment rate for males aged 25-34 took place in 1992 when it was 13.3%. There was a significant decline in the rate between 1993 and 1999 however, when the rate fell from 12.9% to 7.6%. This translated into a 41.1% decrease. The unemployment rate fell each year between 1993 and 1999 except in 1996 when it increased 1.0% from the previous year.

Figure 10 shows that the unemployment rate for males aged 15-24 and 25-34 years as well as the violent crime rate began to decline at approximately the same time in the early 1990's. Although the concurrent decline is interesting, prior to 1989 the two variables did not move in the same direction.

Since the male age groups 15-24 and 25-34 are the high crime prone age groups (according to the UCR2 survey) it was decided to do some measures of relationship between the age groups and the violent crime rate. In order to do so the Pearson's correlation co-efficient was used. Two different periods were looked at; between 1979 to 1999 and 1993 to 1999. All correlations will be found in table 18.

The correlation (table 18) between the unemployment rate for males 15-24 and the violent crime rate was 0.15 for the 1979 to 1999 period. However, for the period of 1993-1999 there was a strong correlation of 0.94 significant at the 0.01 level. The results of these two correlations suggests that the unemployment rate for males 15-24 and the violent crime rate are very likely related in the 1993 to 1999 period. However there

appears to be no relationship evident in the years prior to the violent crime rate decline between 1979 and 1992.

The correlation between the unemployment rate for males 25-34 and the violent crime rate in the 1979 to 1999 period was 0.44, significant at the 0.05 level. There was a much stronger correlation evident between these variables in the 1993 to 1999 period. Between 1993 and 1999, the correlation between the unemployment rate for males 25-34 and the violent crime rate was 0.98, significant at the 0.01 level. It appears that there is a positive relationship between these two variables over the twenty year period that is much stronger over the violent crime decline period.

Discussion of the unemployment rate explanation

Many researchers such as Karmen (2000), Donohue (1998), Witkin (1998), Ouimet (2002), Grogger (2000) have argued that improved economic conditions have had an effect on the violent crime rate. The theory is that improved economic conditions (i.e. employment, higher wages, increase in low skilled jobs) would encourage individuals to choose legitimate (i.e. paid employment) as opposed to illegitimate (i.e. proceeds from crime) means. In times of economic downturn, illegitimate means may be more attractive than legitimate means. Grogger (2000) stated that the improved labour market conditions and especially the increase in median wages caused people to decrease their activity in the drug trade and to increase their activity in the legitimate economy (the labour market). Furthermore, Ouimet (2002) has also argued that an improvement in employment rates was at least partially responsible for the decline in crime. For this reason, I decided to examine an indicator of labour market.

The unemployment rate variable was chosen as a measure of economic health because it is an indicator of “tightness in the market for labour” (Grant, 1999:117) In other words, it is an indicator of how difficult or how easy it is to obtain employment in the stated period. The following hypothesis was advanced: “In theory, a direct relationship should exist between unemployment rates and crime rates; they should rise and fall in tandem” (Karmen, 2000: 207).

The most significant changes in the unemployment rate were the great decreases for males aged 25-34 and males aged 55 and over between 1993 and 1999. Between 1993 and 1999, the decrease for males 25-34 was 41.1%, an interesting result since this cohort committed a disproportionate amount (21.9%) of all violent crimes. The decrease in the unemployment rate for this group during the same period that the violent crime rate declined is consistent with the hypothesis that economic conditions affect the violent crime rate.

For males 55 and over, the decrease in the unemployment rate during the same period was 38.3%. Since males 55 and over commit only 3.8% of violent crime, this large decrease in unemployment should not be expected to affect the violent crime rate significantly, even if there is a causal link between unemployment and the violent crime rate.

Strong positive correlations emerged between the unemployment rate for males 15-24 and 25-34 (0.94 for the former and 0.98 for the latter) and the violent crime rate between 1993 and 1999. Both of these variables followed the same pattern, both declining in this period. However prior to 1993, the unemployment rate for males 15-24 and males 25-34 and the violent crime rate moved in opposite directions. Yet the correlational analysis found a weak relationship of 0.15 for the former and 0.44 for the

latter. The data shows that the unemployment rate for males 15-24 and the violent crime rate does not have a relationship between 1979-1992 and a very strong positive relationship between 1993 and 1999. However, the unemployment rate for males 25-34 and the violent crime rate had a weak positive relationship between 1979 and 1999 and a very strong positive relationship between 1993 and 1999. Since the data points to a relationship mainly found in the 1993-1999 period, and the fact that correlational analysis does not infer causality, one cannot infer causality definitively between these two variables.

In order to draw plausible inferences about causality, Freeman (1994) suggests that you can look at the same individual in different periods. Freeman cites a study by Farrington, Gallagher, Morley, St. Ledger & West (1986), which evaluated the timing of criminal activity among young men in the UK (in Freeman: 17). Farrington et al. wanted to answer the question of whether the men in his study were more likely to commit a crime when they were employed or unemployed. They found support for the commonsensical notion that "crime rates [were] higher during periods of unemployment than during periods of employment" (Farrington et al in Freeman, 1994:17) This does not prove, but certainly, suggests that unemployment plays a causal role in criminal activity (Freeman, 1994:17).

Hale and Sabbagh (1991 cited in Freeman, 1994: 9) have also investigated the link between unemployment and crime. Using statistical models that measure the change in the crime rate regressed on the change in unemployment from the current and the previous year, they found that changes in the unemployment rate are associated with changes in crime. This is consistent with the theory that unemployment is responsible for increases in crime rates. It is interesting to note that changes in unemployment a year

earlier have essentially no effect on crime (Hale and Sabbagh 1991 cited in Freeman, 1994:9-10).

It is difficult to establish a causal relationship between unemployment and crime because much of the research literature reviewed supports a positive link while many studies find no evidence to support a positive link. One study exploring the link between unemployment and crime was undertaken by Cantor et al. (1994). Using a regression model and US data, Cantor et al. came to the conclusion that changes in unemployment for the current year were associated with changes in crime rates in the opposite direction (Cantor et al. 1994 cited in Freeman, 1994:10). This finding is consistent with the argument that an increase in unemployment reduces crime rates. In summary, the literature on economics as a causal explanation of the declining crime rates is mixed.

Although the data indicates that the unemployment rate for males aged 15-24 and males aged 25-24 and the violent crime rate followed a very similar pattern of decline between 1993 and 1999 and were highly correlated, it remains unclear as to whether or not it is reasonable to infer causality between unemployment and crime. The decline in unemployment is a plausible explanation for the decline in the violent crime rate.

Unemployment rates fell most dramatically among those aged 25-34 and 55 and over between 1993 and 1999. It is interesting to note that these two age cohorts represent the 'tails' of the labour force age distribution. These are exactly the same cohorts that economic theory predicts will be most affected by changes in economic conditions: "when firm-specific human capital [training] is important, the firm maximizes its profits by laying off from both ends of the age distribution" (Lazear, p. 173). The oldest workers are going to retire soon, so the firm has the least to gain from keeping them employed. The company has also made the least amount of investment (through training)

in its youngest employees, so fewer returns on investment are there to lose. Both cohorts also reap the greatest benefits when firms begin hiring because the cohorts in the middle of the age distribution are usually close to fully employed²⁰.

Another issue that should be considered is that once someone is convicted of a crime, they are likely to remain outside the workforce, since employers are less likely to hire people with a criminal record. However, this factor is unlikely to be responsible for changes in the aggregate crime rate. This issues does not necessarily illustrate a problem with the argument that unemployment is causally related to crime. If one argues that adverse employment options cause people to commit crime (or continue to commit crimes), then we should expect an increase in crime when unemployment is high and a decrease when unemployment is low irrespective of how many current criminals are permanently unemployed. In other words, it is possible that all the changes in the crime rates are coming from those who chose not to commit crimes in good economic times (crimes which they would have committed in bad economic times).

(2) Changes in demographic patterns

The second potential explanation for the decline in the violent crime rate involves demographic changes. This section explores demographic patterns in Canada between 1979 and 1999 paying close attention to the 1993-1999 period. In 1999, there were over 30 million people (30.4) in Canada. Persons aged 15-24 made up 13.5% of the population (Table 14). Those individuals 25-34 comprised 14.6% of the population. 35-44 year olds were 8.8% of the population while 45-54 year olds were 8.2%. Persons aged 55 and over comprised 13.4%.

²⁰ These cohorts have the greatest job security because the firm has invested a lot in them through training and there is a sufficient amount of time for them to earn returns for the investing firm. In short, their future contribution to the firm is expected to be greater than their future salaries.

Table 15 and Figure 11 show the demographic trends in Canada. Figure 12 reveals that the 15-24 age group has been gradually decreasing in proportion since 1979. The 25-34 age group was growing until 1990 when it began to decline. The 35-44 age group has been increasing since 1979. The 45-54 group was relatively stable until 1989 when it began to increase. The 55 and over group has been increasing since 1979.

Each age group will now be discussed in further detail. In 1999, the rate of persons aged 15-24 was 13,523.9 per 100,000 population. Since 1979, the rate of individuals aged 15-24 per 100,000 population has declined every year except for a small increase in 1999. The greatest decline occurred between 1987 and 1998 when the rate of persons aged 15-24 decreased by 4%. Since the violent crime rate began to decline in 1993, the 15-24 age group has declined 2.6%.

In 1999, there were 4,454,009 persons aged 25-34, a rate of 14,606.5 per 100,000 population. Between 1979 and 1990 this age cohort increased each year between 0.4% and 2.0%. The rate of persons aged 25-34 began to decline in 1990 and continued to decline until 1999. Since the violent crime rate began to decline in 1993, the 25-34 age group has declined 15.6%.

Persons ages 35-44 totalled 2,687,402 in 1999. This translates into a rate of 17,284.5 per 100,000. This age cohort has been increasing every year from 1979 to 1999. These annual increases have ranged in size from 0.4% to 4.1%. Since the violent crime rate began to decline in 1993, the 35-44 age group has increased 6.5%.

In 1999, the cohort of persons aged 45-54 amounted to 2,500,796 persons, translating into a rate of 13,808.9 per 100,000 population. The age category of persons aged 45-54 shrunk between 1979 and 1985. In 1987 this age category began to grow and continued its growth until 1999. The annual growth ranged from 0.6% to 4.6%. Since the

violent crime rate began to decline in 1993, the proportion of persons aged 45-54 has increased 18.6%.

Persons aged 55 and over made up 4,088,734 of the population in 1999, translating into a rate of 21,378.9 per 100,000 population. The 55 and over age cohort has increased every year from 1979 to 1999. These increases have ranged from 0.3% to 1.5%. Since the violent crime rate began to decline in 1993, the 55 and over age group has increased 5.4%.

Trends in male demographics follow a very similar pattern to that of the general demographic trends. Table 16 and Figure 12 show that since 1979, the rate of males aged 15-24 per 100,000 population has been declining every year except for a small increase in 1999. The greatest decline occurred between 1987 and 1998 when the rate of persons aged 15-24 decreased by 4.1%. Since the violent crime rate began to decline in 1993, males aged 15-24 has declined by 2.5%.

In 1999, the rate of males aged 25-34 was 14910.7 per 100,000 population. Between 1979 and 1990 this age cohort was increasing each year between 0.5% and 1.8%. The rate of persons aged 25-34 began to decline in 1990 and continued to decline until 1999. Since the violent crime rate began to decline in 1993, the 25-34 age group has declined 15.5%.

The rate of males aged 35-44 was 17,515.4 per 100,000 population in 1999. Males aged 35-44 have been increasing every year from 1979 to 1999. These annual increases have ranged in size from 0.5% to 3.9%. Since the violent crime rate began to decline in 1993, the rate of males 35-44 years old has increased by 6.9%.

In 1999, the age cohort of males aged 45-54 translated into a rate of 13,902.2 per 100,000 population. The age category of males aged 45-54 shrunk between 1979 and

1985. In 1987 males 45-54 years old began to grow and continued to grow until 1999. The annual growth ranged from 0.6% to 4.1%. Since the violent crime rate began to decline in 1993, the proportion of males 45-54 years old has increased 17.9%

Males aged 55 and over comprised a rate of 19,601.7 per 100,000 population in 1999. The males 55 and over age cohort has increased every year from 1979 to 1999. These increases have ranged from 0.3% to 1.5%. Since the violent crime rate began to decline in 1993, the 55 and over age group has increased 6.1%.

UCR2 data isolated males aged 15-24 and 25-34 as a high risk for committing violent offences. Figure 13 illustrates the male demographic trends for the above-mentioned cohorts and the violent crime rate on the same graph. It is clear that the decreases in the violent crime rate and the two high risk age cohorts did not begin at the same time. Males aged 15-24 have been a shrinking group since 1979, decreasing 2.5% since 1993. The greatest and steepest decline is apparent in the male 25-24 group. This group has been decreasing in size since 1990, but since 1993, this group has shrunk by 15.5%.

Correlational analyses were also done for the rate of males aged 15-24 and 25-34 and the violent crime rate (see table 18). The correlation between the unemployment rate for males 15-24 and the violent crime rate was -0.97 significant at the 0.01 level for the 1979 to 1999 period. However, for the period of 1993-1999 there was a strong correlation of 0.94 significant at the 0.01 level. The results of these two correlations suggest that the rate for males 15-24 and the violent crime rate are strongly positively related in the 1993 to 1999 period. However there appears to be a strong negative relationship evident in the years prior to the violent crime rate decline between 1979 and 1992.

The correlation between the rate for males 25-34 and the violent crime rate in the 1979 to 1999 period was also negative, at -0.21, however not statistically significant. However, a similar result emerged as there was a very strong positive correlation of 0.95 significant at the 0.01 level evident between these variables in the 1993 to 1999 period. It appears that there is a negative relationship between the rate of males aged 25-34 between 1979 and 1992 and a strong positive relationship over the violent crime decline period.

Discussion of demographic trends explanation

The demographic theory states that "all else [being] equal, violent-crime rates rise as the percentage of the population in the more violence-prone age-race-sex groups (that is, young adult males, especially minorities) expands" (Fox, 2000: 289). Conversely, the theory also states that as the high crime prone age groups decrease in size, so does violent crime. However, the findings of this thesis agree with this theory in the 1993-1999 period only. The correlations between the rate for males 15-24, the rate of males 25-34 and the violent crime rate were negative in the period of 1979-1992. The correlation for rate of 15-24 and the violent crime rate was -0.97 significant at the 0.01 level for the 1979 to 1999 period. This was a very surprising result since it counteracts earlier hypotheses that suggest that the violent crime rate and the rate of males aged 15-24 (the high crime prone age group are positively related). This finding suggests that as the rate of 15-24 increases, the violent crime rate decreases. These correlations suggest that the above hypothesis is only holds true for the violent crime rate decline period.

In terms of general demographic trends, the findings of this paper replicate earlier findings by Tremblay (1999) and Foote (2000). These researchers found that Canadian

demographic data showed that Canada has an aging population. The cohort of males aged 45 to 54 has been growing since 1988, while the proportion of males aged 55 and over has gradually been increasing since 1979. This finding supports the demographic argument “given the rather low proclivity of this elder group towards violence” (Fox, 2000:312).

The fact that the male 55+ group has grown 6.1% since violent crime rates began to decline in 1993 is also consistent with the demographic argument. The other major finding which supports the demographic trends theory is that the two most violent crime prone groups have been shrinking. The cohort of males 15-24 has been declining every year since 1979 and the cohort of males 25-34 has been declining since 1990. Since 1993, the decline in the male 15-24 cohort has been 2.5% while the decrease has been much steeper in the 25-34 group at 15.5%

There are, however, some proponents who argue that changes in the age structure have only a limited impact on aggregate crime rates (Levitt, 1999; Fox, 2000). Levitt and Fox do not dispute the premise that there is a relationship between age and criminal involvement, rather they argue that changes in demographics cannot solely account for declining crime. Levitt argues that “changing age structure can explain crime fluctuations of no more than 1% per year...No evidence is uncovered to support the claim that per capita criminal activity is an increasing function of cohort size” (Levitt, 1999: 592). Therefore, there is evidence to suggest that changing demographic patterns do partially account for declining violent crime, however to what extent remains unknown.

Unlike unemployment, “demographic forecasts extending one or possibly two decades into the future can project with a high degree of accuracy the population in crime-prone age groups (Fox, 2000: 309). Using current Canadian data, Carrington

(2001) has undertaken such a study that forecasts the estimated changes in the crime rates due to demography alone. He projects that by 2026, the rate of crime against the person (i.e. violent crimes) will have fallen to 86 percent of its 1999 level (Carrington, 1999: 346).

If the demographic explanation for decreasing crime rates is correct, then demographic-based forecasts of crime can become a self-fulfilling prophecy. If the police forces establish their hiring and staffing levels in response to demographic based forecasts of crime, then they would increase staffing levels prior to projected growth in the high crime cohorts. Conversely, the police would lower their staffing levels in anticipation of a decrease in the high crime cohorts. Under these circumstances it would not be surprising to see increases in the crime rate follow increases in police staffing levels and decreases in the crime rate following decreases in staffing levels. If police staffing levels are linked to demographics and if police staffing levels influence the crime rate. It may be that the change in police staffing is causing the change in the crime rate, and that demographics and the crime rate have no causal relationship despite the positive associations observed in the data. In order to demonstrate that there is a causal relationship between demographics and the crime rate; one would have to show that police staffing decisions were independent of demographic forecasts during the period being studied.

(3) Trends in policing

This section examines changes in policing staffing levels as a possible explanation for the declining violent crime rate. One variable that could be affecting the

police reported violent crime rate is a change in police manpower. Table 18 and Figure 15 show the number of police per 100,000 population.

Table 17 and Figure 14 shows that between 1979 and 1981 the number of police officers per 100,000 population grew slightly from 202.4 to 203.7 per 100,000 population. This rate decreased in 1983 until 1985 when it began to increase again until 1991. Since 1993, the rate has decreased every year and is down 8.5%. In fact, as of 1999, the level of police manpower was at the lowest level in the entire 1979-1999 period. Therefore it is implausible to assert that an increased police workforce is deterring crime and thus affecting the violent crime rate. When the police per population and the violent crime rate are plotted on the same graph (figure 15), it is evident that both variables began to decline in 1993 and continued to do so until 1999.

The correlation (table 18) between the police per population and the violent crime rate in the 1979 to 1999 period was -0.42, not statistically significant. However, there was a very strong positive correlation of 0.97, significant at the 0.01 level evident between these variables in the 1993 to 1999 period. Once again, a very interesting picture emerges. The police per population variable was weakly negatively related to the violent crime rate between 1979 and 1992. Yet, a very strong positive relationship is found between the two variables during the violent crime decline period. This would suggest that the police staffing levels may have different effects on the violent crime rate in different periods of time.

Discussion of changes in police staffing levels as a possible explanation

This thesis found two very interesting results. Firstly, police manpower (measured by the police per 100,000 population variable) has been declining since 1993 and is

strongly positively correlated with the violent crime rate between 1993 and 1999. Secondly, that policing staffing levels are weakly negatively related to the violent crime rate in the period of 1979-1992 before the violent crime rate decline. Therefore, the theory about an increase in police manpower causing a deterrent effect and accounting for a decrease in violent crime is not plausible according to the findings of this study. However, the results do agree with Koenig (1996 cited in Kennedy and Veitch, 1997:53) who argues “that police strength per capita is associated over time with higher crime rates”. Therefore, it follows that fewer police per capita, as found in this thesis, would be consistent with lower crime rates.

Many researchers claim that changes in policing have contributed to the decline in violent crime (Eck and Maguire, 2000; Anderson 1997; Blumstein and Rosenfeld 1998; Kelling and Bratton 1998; Witkin 1998). Most authors claim that tough on crime approaches like order maintenance, zero-tolerance enforcement techniques, community policing and increased staffing levels have caused violent crime rates to decline. Many of these studies rely on aggregate data as well as ethnographic accounts of the decreasing crime. Since changes in policing (such as enforcement and changes in policies) are difficult to measure empirically, this study examines the change in police manpower over the twenty-year period.

The findings about the relationship between police strength and the violent crime should be noteworthy for policy makers. “Recent research shows that both police executives and the public believe that increasing the number of police to be an important and effective method for reducing crime” (Maguire and Pastore 1995; McEwen 1995; National Association of Police Organizations 1997, 1999 cited in Eck & Maguire 2000: 208). The findings of this thesis suggest that the decline in violent crime (in the 1993-

1999 period) is at least independent of police strength as violent crime declined alongside police strength. This suggests that a decreased police workforce is a plausible explanation for the violent crime rate decline.

The findings of this thesis are also consistent with the results of research by Eck and Maguire (2000). Eck and Maguire undertook an extensive review of twenty-seven studies that examined the effects of police strength on violent crime. They found that “to date [they] are not aware of a single empirical study that supports the claim that increases in the number of police officers are responsible for recent decreases in violent crime” (Eck and Maguire, 2000:209). Moreover, the lack of evidence supporting this claim is also muddled by the fact that it is difficult to unravel the relationship between police and crime (Eck and Maguire, 2000:209), as some authors such as Koenig (1996) claim that increases in police staffing are related to increases in crime rates. The coincidental decline in violent crime rates and police strength is consistent with Koenig’s hypothesis. If Koenig is correct that would imply that there is an unknown optimal police staffing level, because a police staff of zero is very unlikely to result in a crime rate of zero. It would be interesting and valuable for future research to attempt to quantify the optimal police staffing level.

Another topic that is worthy of discussion is the efficacy of police reported crime statistics. Some researchers such as Quinney (1975) and Gurr (1981) argue that a decrease in police reported crime does not indicate an actual decrease in crime but rather it indicates a change in police charging policies or a decrease in police resources. Gurr states that

Official data on crime, weighted by population, are *prima facie* indicators of levels of public disorder, defined as the extent of public concern about crime

(indexed by indicators of crime known to the police) and the extent of official efforts at crime control (indexed by data on arrests and convictions)...In the aggregate, we can think of crime data as the product of two different conditions. One is behavioural [sic]: the volume of criminal acts. The other is institutional: the activities of the agencies which define and maintain public order. (1981:106)

In this quote, Gurr claims that it is possible for there to be a disconnect between crimes committed and the reported crime rate. For example, actual crime could remain constant, while the crime rate could fluctuate as a response to changes in police resources and charging policies. Although Gurr's paper concludes that "it is...likely that the [crime] trends reflect, in a somewhat distorted way real and profound changes in aggregate social behavior [sic]" (1981:118) he states that this conclusion cannot be accepted beyond a shadow of a doubt. If this discrepancy is real, then an implication for the police is that their success of should not be measured by examining the changes in the crime rate. Criminologists should rely more on victimization surveys when trying to get an accurate picture of crimes committed (not just crimes that were reported to the police). In the next section, it is shown that a widely used Canadian victimization survey indicates that violent criminal incidents declined while reporting of violent incidents remained constant. This means that the dark figure of crime has not grown, and that Gurr's concerns are unfounded.

(4) Changes in reporting

This section evaluates the explanation that changes in crime reporting rates account for the decline in the violent crime rate. This analysis will employ data from the General Social Survey (GSS), a national victimization survey, conducted in 1993 and

1999. The violent crime rate is based on police reported data collected by the UCR Survey. Considering that not all crimes are reported to the police

one way to estimate the extent of unreported crime [i.e. the dark figure of crime] is through victimization surveys...Because the GSS asks a sample of the population about their personal crime experiences, it captures information on crimes that have been reported to the police, as well as those that have gone unreported (Mihorean 2000:4)

No trend data are available for reporting rates in the General Social Survey (GSS). The GSS only surveyed respondents about reporting rates in 1988, 1993 and 1999.

Furthermore, due to the major changes made to the definition of both assault and sexual assault questions in 1993, the 1988 data are not suitable for comparison with the data collected in 1993 and 1999 (Besserer & Trainor, 2000:3)

According to the GSS, the police are most likely to learn out about victimization incidents from the victims themselves (Mihorean et al. 2000: 40). In 1999 and 1993, the GSS found that the victim was responsible for notifying the police about all types of victimization incidents approximately three quarters of the time. In 1999 and 1993, the police were notified about the remaining one-quarter of incidents by reports made by family, friends, neighbours and by police detection. Due to the fact that victims report most of the incidents to the police, some have speculated that a decline in victim reporting would cause the rates of police reported crime to decline. However the data described below does not support this hypothesis.

The GSS asks respondents about eight crime categories²¹ that include both violent and non-violent incidents. Since this thesis is concerned with the violent crime

²¹ The eight crime categories include robbery, assault, break and enter, motor vehicle theft, theft of household property, theft of personal property, vandalism and sexual assault.

rate, the focus will be solely on reporting of violent incidents. While the GSS makes it clear that victims are usually responsible for reporting incidents to the police, the rate of victim reporting for violent incidents has fallen dramatically since 1993. "Between 1993 and 1999, victim reporting of violent incidents fell from 74% to 59%", a decline of 15%. (Mihorean et al. 2001:40) However, overall reporting of violent incidents to the police remained unchanged between 1993 and 1999 (Mihorean et al. 2000:40). Therefore, this major decline in victim reporting has been offset by a major increase in reporting by other sources. Thus, overall reporting to the police has remained stable and cannot therefore account for the decline in the violent crime rate. Unreported violent crime has decreased in tandem with reported violent crime.

Discussion of reporting changes

The results from the GSS are consistent with those found by Kennedy and Veitch (1997). Kennedy & Veitch found no significant changes in reporting rates during the crime decline of 1995-1997 in Edmonton. Kennedy and Veitch also argued that since reporting rates remained stable over the period in question, that reporting rates could not be a factor in Edmonton's declining crime rates.

Mihorean et al. (2001) speculate that victim reporting may have declined due to greater police detection of incidents or more family and friends reporting on behalf of the victim. Additional data from the 1999 GSS shows that there are two main reasons why victims of violent incidents did not report the incident to the police. Twenty-five percent of victims who did not report violent incidents to the police said that the "incident was not important enough", and an additional twenty-five percent said they "dealt with it another way". Other responses given were: "didn't want police involved (10%)", "that it

was a personal matter (9%)” or said that they thought the “police couldn’t do anything (8%)” about it. Almost a quarter of respondents (23%) said it was due to “another reason” (Mihorean et al, 2001: 42).

This decrease in victim reporting is puzzling since the 1999 GSS also finds that public satisfaction with the police improved slightly since 1993²² among the same sample who were questioned about victimization incidents. If public satisfaction with the police increased and two of the reasons given for not reporting incidents were related to a poor opinion of police, one would expect that victim reporting would have increased. It could be the case that victims (a sub-sample of the GSS survey) satisfaction with the police declined.

If the goal of the police and government agencies is to reduce criminal behaviour then they should encourage victim reporting through public relations and awareness campaigns that promote the benefits of reporting crimes to the police. In addition, they should engage in community awareness programs to ensure that the other reporting sources (i.e. family and friends of victims) continue to report violent incidents and compensate for the decrease in victim reporting. These findings reiterate the previous suggestion that police success cannot be measured solely by the crime rate.

²² “In 1999, 62% of Canadians felt that the police were doing a good job at ensuring the safety of its citizens, compared to a figure of 58% in 1993” (Tufts, 2000: 3).

Chapter Six

SUMMARY AND DISCUSSION

The purpose of this chapter is to summarize the main empirical findings of this thesis.

Future research directions will be offered as well as some concluding remarks.

Summary of empirical findings

General crime trends

- The overall Canadian crime rate peaked in 1991 and has steadily declined since, returning to 1979 levels by 1999.
- In 1999, the Canadian crime rate was 25.2% lower than the 1991 peak.
- The violent crime rate declined for the seventh consecutive year in 1999. An 11.8% decrease was observed between 1993 and 1999.
- This recent decline is unprecedented; prior to 1993, “the violent crime rate [had] increased for 15 straight years” (Tremblay, 2000: 6).
- Rates of the specific offence categories involving violence fell steadily between 1993 and 1999.
- Over the 1993 and 1999 period, the sexual assault rate declined from 135.6 per 100,000 population to 89.1 per 100,000 population. This translates into a 34.3 % decrease.
- Assaults continued to make up over three-quarters (80.1) of violent crime incidents reported by the police in 1999.
- 1999 UCR2 data reveals that the younger an accused’s age, the more likely it is that he or she will be accused of a violent offence. The one exception to this is for

sexual assault. Persons aged 35-44 are slightly more likely to be accused of sexual assault than persons in the younger cohorts.

- Males account for over three quarters (83.9%) of all violent incidents.
- Males aged 15-24 are at highest risk for offending, committing 25.1% of all violent crime. Males aged 25-34 are also at high risk for offending, committing 21.9% of violent crime. Together these two age groups commit almost half (47%) of violent crime.

Crime and the unemployment rate

- The total unemployment rate and the violent crime rate began to decline within one year of each other, violent crime in 1993 and total unemployment in 1994.
- Prior to this recent decline, the unemployment rate and the violent crime rate moved in opposite directions.
- The total unemployment rate has been declining every year since 1994 except for a slight increase in 1996. It fell 33.3% between 1993 and 1999.
- When broken down by age groups, it is clear that the unemployment rate has not consistently declined in all age groups. The greatest declines were found in the 55 and over group (a decrease of 40.2%) and in the 25-34 age group (a decrease of 39.7%). This demographic breakdown is consistent with predictions made by current economic theory.
- The unemployment rate fell 21.1% for males aged 15-24 and 41.1% for males aged 25-34 between 1993 and 1999. These are the two high risk crime groups.

- The correlation between the unemployment rate for males 15-24 and the violent crime rate was 0.15 for the 1979 to 1999 period. However, for the period of 1993-1999 there was a strong correlation of 0.94 significant at the 0.01 level.
- The correlation between the unemployment rate for males 25-34 and the violent crime rate in the 1979 to 1999 period was 0.44, significant at the 0.05 level. Moreover, for the period of 1993 to 1999, the correlation between the unemployment rate for males 25-34 and the violent crime rate was 0.98, significant at the 0.01 level.

Crime and demographic trends

- The most prominent demographic declines have occurred in the age cohort of persons aged 25-34. This group has proportionally decreased 15.5% since 1993.
- The most significant growth has occurred in the 45-54 age group, which has grown proportionally by 18.6%.
- Trends in male demographic pattern follow a very similar pattern to the general demographic trends.
- The greatest decrease is apparent in males aged 25-34 group, which has decreased 15.5% proportionally since 1993.
- The largest increase is evident in the males aged 45-54 group, which has grown proportionality by 17.9%.
- The correlation between the unemployment rate for males 15-24 and the violent crime rate was -0.97 significant at the 0.01 level for the 1979 to 1999 period. However, for the period of 1993-1999 there was a strong correlation of 0.94 significant at the 0.01 level.

- The correlation between the rate for males 25-34 and the violent crime rate in the 1979 to 1999 period was also negative, at -0.21, however not statistically significant. However, a very strong positive correlation of 0.95 significant at the 0.01 level was evident between these variables in the 1993 to 1999 period

Crime and trends in policing

- Between 1979 and 1981 the number of police officers per 100,000 population grew slightly from 202.4 to 203.7. per 100,000 population. This rate decreased from 1983 until 1985 when began to increase again until 1991.
- Since 1993, the rate of police per 100,000 population has decreased every year and is down 8.5%.
- The correlation between the police per population and the violent crime rate in the 1979 to 1999 period was -0.42, not statistically significant. However, there was a very strong positive correlation of 0.97, significant at the 0.01 level evident between these variables in the 1993 to 1999 period.

Reporting rates

- In 1999 and 1993 the victim notified the police about all victimization incidents almost three quarters of the time.
- The victim is reporting fewer incidents to the police. Between 1993 and 1999 the GSS found “victim reporting of violent incidents fell from 74% to 59%” (Mihorean et al. 2000:40). This translates into a 15% decline.
- However, overall reporting of violent incidents remained unchanged between 1993 and 1999 (Mihorean et al. 2000:40).

- Therefore, this major decline in victim reporting has been offset by a major increase in reporting by other sources.

Future research directions

This thesis has provided a number of ideas for future research directions. Firstly, it is certainly necessary to undergo more statistical analyses on the contributing factors of the violent crime rate decline. It would be useful to use multiple indices for the same data category, i.e. median wages, percent collecting social assistance and unemployment rate when evaluating the economy. As well, longer term analysis would be beneficial.

One interesting idea for future research would be to design a study comparing the crime rates in jurisdictions where the police determine staffing levels based on demographic forecasts with crime rates in jurisdictions where police determine their staffing levels through other methods. In such a study, it would be necessary to have three groups to compare: “all” jurisdictions, “demographic” jurisdictions and “other” jurisdictions. If there is a relationship between crime rates and demographics in the “all” and “demographic” groups but not in the “other” group, then the results would support the hypothesis that changes in police staffing levels cause the link between demographic data and crime rate data.

Another possible study idea would be an attempt to determine the type of data, which provides the best proxy for actual criminal behaviour: police reported or victimization surveys. This study could focus on the limitations of each data source and suggest ways to collect data, which most accurately reflects criminal incidents. This would be particularly challenging because the actual number of criminal incidents can

never be known, only approximated based on imperfectly collected data. The goal would be to minimize the imperfections in the data collection process.

CONCLUSION

This thesis has provided an exploratory study of explanations for violent crime rate decline of 1993 to 1999 in Canada. Based on the observations and correlational analysis in this thesis, no single factor stands out as the main contributing explanation. In fact three factors were found to be plausible explanations for why the violent crime rate is declining.

It was found that the unemployment rate especially for males aged 15-24 and 25-34 is a plausible contributing factor as it is highly correlated to the violent crime rate between 1993 and 1999; this correlation was statistically significant. This thesis also found that changes in demographic trends were also a plausible contributing factor to the decline in the violent crime rate period. The rate of males aged 15-24 and 25-34 were strongly correlated with the violent crime rate (and the correlations were statistically significant). Finally, the rate of police per population is also a plausible contributing factor to the violent crime rate decline as it too is strongly correlated with the violent crime rate. This thesis was able to rule changes in reporting rates a possible explanation as reporting rates have in fact remained stable.

During the period of 1979-1992 an entirely different picture emerges.. It was found that the rate of males aged 15-24 was strongly negatively correlated with the violent crime rate. This is surprising finding indeed as it suggests that as the rate of young males increased, the rate of violent crime decreased. There were also negative correlations found for the rate of males aged 25-34 and for the rate of police per

population. The correlational data from this period largely contradicts conclusions drawn from the correlational data in the period 1993 to 1999.

Therefore, it must be clearly stated that the conclusions of this thesis suggest that the three factors (the unemployment rates for males aged 15-24 and 25-34, the rate of males aged 15-24 and 25-24 and the rate of police per population) are plausible contributing factors driving the violent crime rate decline *in the 1993-1999 period only*. Since the variables were related in very different ways between 1979 and 1992, it is possible that either 1979-1992 or 1993-1999 may contain anomalies in a longer term trend.

The results of this thesis suggest that it is more than likely a variety of factors acting concurrently in a combination that I cannot determine that are contributing to the violent crime decline rate. In addition, there are other potential factors at work that I have not analysed. Therefore, it is very difficult to recommend violent crime prevention strategies as there is not one single factor driving the violent crime rate. Given the complex and inter-related nature of the independent variables, more in depth analysis is needed before any causal inferences can be drawn from the plausible explanations identified by this study.

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Appendix A

Tables

Table 1: Total crime rate

Year	Criminal Code total	Crime Rate	Annual Changes
1991	2,898,988	10,342	3.0
1992	2,847,981	10,036	-3.0
1993	2,735,626	9,531	-5.0
1994	2,646,209	9,114	-4.4
1995	2,639,654	8,993	-1.3
1996	2,644,891	8,914	-0.9
1997	2,534,766	8,453	-5.2
1998	2,461,156	8,137	-3.7
1999	2,357,771	7,733	-5.0

Table 2: Crime rates by category of offence

Year	Property Crime Rate	Annual change	Other Criminal Code Rate	Annual change	Violent Crime Rate	Annual change
1991	6,160.2	n/a	3,122.5	n/a	1,059.4	n/a
1992	5,902.0	-4.2	3,050.7	-2.3%	1,083.7	2.3%
1993	5,570.9	-5.6	2,879.1	-5.6%	1,080.7	-0.3%
1994	5,250.4	-5.8	2,817.0	-2.2%	1,046.1	-3.2%
1995	5,282.9	0.6	2,702.3	-4.1%	1,007.4	-3.7%
1996	5,263.6	-0.4	2,650.1	-1.9%	1,000.1	-0.7%
1997	4,867.2	-7.5	2,595.6	-2.1%	990.1	-1.0%
1998	4,555.5	-6.4	2,602.2	0.3%	979.2	-1.1%
1999	4,265.6	-6.4	2,511.5	-3.5%	955.5	-2.4%

Table 3: Violent Crime Rate

Year	Violent Crime Rate	Annual Change
1979	609.6	n/a
1980	635.8	4.3%
1981	653.6	2.8%
1982	671.4	2.7%
1983	679.3	1.2%
1984	700.6	3.1%
1985	734.5	4.8%
1986	785.1	6.9%
1987	829.4	5.6%
1988	868.0	4.6%
1989	911.0	5.0%
1990	972.9	6.8%
1991	1,059.4	8.9%
1992	1,083.7	2.3%
1993	1,080.7	-0.3%
1994	1,046.1	-3.2%
1995	1,007.4	-3.7%
1996	1,000.1	-0.7%
1997	990.1	-1.0%
1998	979.2	-1.1%
1999	955.5	-2.4%

Table 4: Changes in Rates of Violent Offences

Year	Total Violent Incidents	Homicide Actual Incidents	Homicide Rate	Annual change	Robbery Actual Incidents	Robbery Rate	Annual change	Total Assault Actual Incidents	Total Assault Rate	Annual change
1993	310,201	627	2.2	n/a	984	3.4	n/a	238,503	830.9	n/a
1994	303,745	596	2.0	-9.1%	922	3.2	-5.9%	236,564	814.7	-1.9%
1995	295,702	588	2.0	0.0%	939	3.2	0.0%	231,080	787.2	-3.4%
1996	296,746	635	2.1	5.0%	878	3.0	-6.3%	232,090	782.2	-0.6%
1997	296,890	586	2.0	-4.8%	865	2.9	-3.3%	234,204	781.0	-0.2%
1998	296,166	558	1.8	-10.0%	745	2.5	-13.8%	236,073	780.5	-0.1%
1999	291,330	536	1.8	0.0%	685	2.3	-8.0%	233,465	765.7	-1.9%
Year	Total Violent Incidents	Robbery Actual Incidents	Robbery Rate	Annual change	Total Assault Actual Incidents	Total Assault Rate	Annual change			
1993	310,201	38,925	135.6	n/a	1,204	4.2	n/a			
1994	303,745	35,524	122.3	-9.8%	1,129	3.9	-7.1%			
1995	295,702	31,728	108.1	-11.7%	1,035	3.5	-10.3%			
1996	296,746	30,369	102.3	-5.3%	977	3.3	-5.7%			
1997	296,890	30,663	102.3	-0.1%	985	3.3	0.0%			
1998	296,166	28,998	95.9	-6.2%	829	2.7	-18.2%			
1999	291,330	27,173	89.1	-7.0%	726	2.4	-11.1%			

Table 5: Components of the violent crime rate

Year	Total Violent Incidents	Homicide Actual Incidents	Proportion of violent incidents	Abduction Actual Incidents	Proportion of violent incidents	Total Assault Actual Incidents	Proportion of violent incidents
1993	310,201	627	0.2%	984	0.3%	238,503	76.9%
1994	303,745	596	0.2%	922	0.3%	236,564	77.9%
1995	295,702	588	0.2%	939	0.3%	231,080	78.1%
1996	296,746	635	0.2%	878	0.3%	232,090	78.2%
1997	296,890	586	0.2%	865	0.3%	234,204	78.9%
1998	296,166	558	0.2%	745	0.3%	236,073	79.7%
1999	291,330	536	0.2%	685	0.2%	233,465	80.1%
Year	Total Violent Incidents	Sexual Assault Actual Incidents	Proportion of violent incidents	Abduction Actual Incidents	Proportion of violent incidents	Total Assault Actual Incidents	Proportion of violent incidents
1993	310,201	38,925	12.5%	1,204	0.4%	29,955	9.7%
1994	303,745	35,524	11.7%	1,129	0.4%	29,010	9.6%
1995	295,702	31,728	10.7%	1,035	0.4%	30,332	10.3%
1996	296,746	30,369	10.2%	977	0.3%	31,797	10.7%
1997	296,890	30,663	10.3%	985	0.3%	29,587	10.0%
1998	296,166	28,998	9.8%	829	0.3%	28,963	9.8%
1999	291,330	27,173	9.3%	726	0.2%	28,745	9.9%

Table 6: Total Accused of violent offences by age groups 1999

	14 and under		15-24		25-34	
	Incidents	% Total	Incidents	% Total	Incidents	% Total
Homicide	3	1.5%	87	42.6%	48	23.5%
Attempted Murder/Conspire	6	1.6%	156	42.4%	103	28.0%
Total Sexual ¹	596	11.1%	1,187	22.0%	1,177	21.9%
Total Assault ²	5333	7.6%	21,124	30.0%	18,476	26.2%
Kidnap/Hostage/Abduction	25	1.8%	520	37.2%	430	30.8%
Robbery	610	7.2%	4,197	49.7%	2,100	24.9%
Other violent ³	1148	5.5%	5,127	24.5%	5,372	25.7%
Grand Total	7721	7.2%	32,398	30.2%	27,706	25.9%

	35-44		45-54		55 and over		Grand Total
	Incidents	% Total	Incidents	% Total	Incidents	% Total	
Homicide	39	19.1%	20	9.8%	7	3.4%	204
Attempted Murder/Conspire	70	19.0%	22	6.0%	11	3.0%	368
Total Sexual ¹	1,205	22.4%	684	12.7%	516	9.6%	5,385
Total Assault ²	16,209	23.0%	6,306	9.0%	2,727	3.9%	70,413
Kidnap/Hostage/Abduction	307	22.0%	82	5.9%	29	2.1%	1,398
Robbery	1,318	15.6%	192	2.3%	19	0.2%	8,447
Other violent ³	5,550	26.5%	2,339	11.2%	1,246	6.0%	20,927
Grand Total	24,698	23.1%	9,645	9.0%	4,555	4.3%	107,142

¹Total Sexual Assault includes aggravated assault, assault with a weapon causing bodily harm, sexual assault and other sexual offences

²Total assault includes aggravated assault, assault with a weapon, assault 1, other assaults, discharge firearm with intent and assault peace officer

³Other includes criminal negligence causing death, extortion, criminal harassment and other violent offences

Table 7: Persons charged with violent crime by gender, 1999

	Total male accused	Total female accused	Grand Total of all accused	% male accused of all accused	% female accused of all accused
Homicide	191	13	204	93.6	6.4
attempt/conspire murder	326	42	368	88.6	11.4
Total Sexual Assault	5252	130	5385	97.5	2.4
Total Assault	57690	12710	70413	81.9	18.1
Kidnap/Hostage/Abduction	1226	168	1398	87.7	12.0
Robbery	7667	779	8447	90.8	9.2
Total violent crime	89907	17208	107142	83.9	16.1

Table 8: Male Accused of Violent Incidents by Age and Sex, 1999

	15-24		25-34		35-44	
	Incidents	% of total	Incidents	% of total	Incidents	% of total
Homicide	81	39.7%	46	22.5%	37	18.1%
attempt/conspire murder	147	39.9%	87	23.6%	62	16.8%
Total Sexual Assault ¹	1150	21.4%	1148	21.3%	1177	21.9%
Total Assault ²	17001	24.1%	15317	21.8%	13518	19.2%
Kidnap/Hostage/Abduction	445	31.9%	389	27.9%	274	19.7%
Robbery	3832	45.4%	1907	22.6%	1225	14.5%
Other ³	4205	20.1%	4554	21.8%	4746	22.7%
Male Total	26861	25.1%	23448	21.9%	21039	19.6%

	45-54		55 and over		Total
	Incidents	% of total	Incidents	% of total	Incidents
Homicide	18	8.8%	7	3.4%	204
attempt/conspire murder	16	4.3%	10	2.7%	368
Total Sexual Assault ¹	675	12.5%	514	9.6%	5382
Total Assault ²	5376	7.6%	2374	3.4%	70400
Kidnap/Hostage/Abduction	75	5.4%	24	1.7%	1394
Robbery	176	2.1%	16	0.2%	8446
Other ³	2010	9.6%	1077	5.1%	20921
Male Total	8346	7.8%	4022	3.8%	107115

¹Total Sexual Assault includes aggravated assault, assault with a weapon causing bodily harm, sexual assault and other sexual offences

²Total assault includes aggravated assault, assault with a weapon, assault 1, other assaults, discharge firearm with intent and assault peace officer

³Other includes criminal negligence causing death, extortion, criminal harassment and other violent offences

Table 9: Female Accused of Violent Incidents by Age and Sex, 1999

	15-24		25-34		35-44	
	Incidents	% of total	Incidents	% of total	Incidents	% of total
Homicide	6	2.9%	2	1.0%	2	1.0%
attempt/conspire murder	9	2.4%	16	4.3%	8	2.2%
Total Sexual Assault ¹	36	0.7%	28	0.5%	28	0.5%
Total Assault ²	4118	5.8%	3156	4.5%	2689	3.8%
Kidnap/Hostage/ Abduction	72	5.2%	41	2.9%	32	2.3%
Robbery	365	4.3%	192	2.3%	93	1.1%
Other ³	919	4.4%	817	3.9%	804	3.8%
Female Total	5525	5.2%	4252	4.0%	3656	3.4%

	45-54		55 and over		Total Incidents
	Incidents	% of total	Incidents	% of total	
Homicide	2	1.0%	0	0.0%	204
attempt/conspire murder	6	1.6%	1	0.3%	368
Total Sexual Assault ¹	9	0.2%	2	0.0%	5382
Total Assault ²	930	1.3%	352	0.5%	70400
Kidnap/Hostage/ Abduction	7	0.5%	5	0.4%	1394
Robbery	16	0.2%	3	0.0%	8446
Other ³	328	1.6%	169	0.8%	20921
Female Total	1298	1.2%	532	0.5%	107115

¹Total Sexual Assault includes aggravated assault, assault with a weapon causing bodily harm, sexual assault and other sexual offences

²Total assault includes aggravated assault, assault with a weapon, assault 1, other assaults, discharge firearm with intent and assault peace officer

³Other includes criminal negligence causing death, extortion, criminal harassment and other violent offences

Table 10: Unemployment Rate in Canada

Year	Violent Crime Rate	Unemployment Rate	Annual changes
1979	609.6	7.5	N/A
1980	635.8	7.5	0.0%
1981	653.6	7.6	1.3%
1982	671.4	11	44.7%
1983	679.3	11.9	8.2%
1984	700.6	11.3	-5.0%
1985	734.5	10.7	-5.3%
1986	785.1	9.6	-10.3%
1987	829.4	8.8	-8.3%
1988	868.0	7.8	-11.4%
1989	911.0	7.5	-3.8%
1990	972.9	8.1	8.0%
1991	1,059.4	10.3	27.2%
1992	1,083.7	11.2	8.7%
1993	1,080.7	11.4	1.8%
1994	1,046.1	10.4	-8.8%
1995	1,007.4	9.4	-9.6%
1996	1,000.1	9.6	2.1%
1997	990.1	9.1	-5.2%
1998	979.2	8.3	-8.8%
1999	955.5	7.6	-8.4%

Table 11: Changes in total Unemployment by age

	15-24 years		25-34 years		35-44 years		45-54 years		55 years and over	
	%	annual change	%	annual change	%	annual change	%	annual change	%	annual change
1979	12.6	N/A	6.8	N/A	5.1	N/A	4.8	N/A	4.3	N/A
1980	12.8	1.6%	6.7	-1.5%	5.1	0.0%	4.9	2.1%	4.2	-2.3%
1981	12.7	-0.8%	7.1	6.0%	5.2	2.0%	4.7	-4.1%	4.2	0.0%
1982	18.2	43.3%	10.5	47.9%	8.0	53.8%	7.0	48.9%	6.4	52.4%
1983	19.2	5.5%	12.0	14.3%	8.7	8.7%	7.7	10.0%	7.5	17.2%
1984	17.3	-9.9%	11.7	-2.5%	8.5	-2.3%	7.8	1.3%	7.3	-2.7%
1985	16.2	-6.4%	11.1	-5.1%	8.0	-5.9%	7.2	-7.7%	7.6	4.1%
1986	14.8	-8.6%	10.0	-9.9%	7.3	-8.8%	6.5	-9.7%	6.8	-10.5%
1987	13.2	-10.8%	9.0	-10.0%	7.0	-4.1%	6.4	-1.5%	6.5	-4.4%
1988	11.5	-12.9%	8.1	-10.0%	6.3	-10.0%	5.7	-10.9%	5.7	-12.3%
1989	11.0	-4.3%	8.2	1.2%	6.2	-1.6%	5.3	-7.0%	5.7	0.0%
1990	12.4	12.7%	8.7	6.1%	6.6	6.5%	5.9	11.3%	5.4	-5.3%
1991	15.8	27.4%	11.2	28.7%	8.3	25.8%	7.4	25.4%	7.6	40.7%
1992	17.1	8.2%	11.9	6.3%	9.4	13.3%	8.0	8.1%	8.6	13.2%
1993	17.1	0.0%	12.1	1.7%	9.6	2.1%	8.5	6.3%	9.2	7.0%
1994	15.8	-7.6%	11.0	-9.1%	8.8	-8.3%	7.8	-8.2%	8.5	-7.6%
1995	14.7	-7.0%	9.9	-10.0%	8.1	-8.0%	7.1	-9.0%	7.7	-9.4%
1996	15.3	4.1%	9.9	0.0%	8.5	4.9%	7.3	2.8%	7.3	-5.2%
1997	16.2	5.9%	9.1	-8.1%	7.7	-9.4%	6.5	-11.0%	7.0	-4.1%
1998	15.1	-6.8%	8.1	-11.0%	6.9	-10.4%	6.1	-6.2%	6.3	-10.0%
1999	14.0	-7.3%	7.3	-9.9%	6.4	-7.2%	5.6	-8.2%	5.5	-12.7%

Table 12: Unemployment rates by gender

Year	male	% annual change	female	% annual change
1993	12	n/a	10.6	n/a
1994	10.9	-9.2%	9.7	-8.5%
1995	9.8	-10.1%	9	-7.2%
1996	9.9	1.0%	9.3	3.3%
1997	9.3	-6.1%	8.9	-4.3%
1998	8.6	-7.5%	7.9	-11.2%
1999	7.8	-9.3%	7.3	-7.6%

Table 13: Male unemployment rates by age groups

Year	15-24 years	% annual change	25-34 years	% annual change	35-44 years	% annual change	45-54 years	% annual change	55 years and over	% annual change
1979	13	n/a	5.8	n/a	4.1	n/a	4.1	n/a	4.2	n/a
1980	13.5	3.8%	6.1	5.2%	4.4	7.3%	4.2	2.4%	4	-4.8%
1981	13.7	1.5%	6.3	3.3%	4.5	2.3%	4.3	2.4%	4.2	5.0%
1982	20.6	50.4%	10.6	68.3%	7.6	68.9%	6.8	58.1%	6.6	57.1%
1983	21.8	5.8%	12.4	17.0%	8.3	9.2%	7.5	10.3%	7.6	15.2%
1984	19.1	-12.4%	11.8	-4.8%	7.9	-4.8%	7.4	-1.3%	7.6	0.0%
1985	17.8	-6.8%	10.8	-8.5%	7.5	-5.1%	6.9	-6.8%	7.8	2.6%
1986	16.1	-9.6%	10.1	-6.5%	6.7	-10.7%	5.9	-14.5%	6.8	-12.8%
1987	14.4	-10.6%	8.7	-13.9%	6.4	-4.5%	5.7	-3.4%	6.1	-10.3%
1988	12.5	-13.2%	7.6	-12.6%	5.6	-12.5%	4.8	-15.8%	5.8	-4.9%
1989	12.2	-2.4%	7.6	0.0%	5.7	1.8%	4.8	0.0%	5.8	0.0%
1990	13.6	11.5%	8.9	17.1%	6.2	8.8%	5.6	16.7%	5.5	-5.2%
1991	18.5	36.0%	12	34.8%	8.3	33.9%	7	25.0%	7.7	40.0%
1992	19.6	5.9%	13.3	10.8%	9.7	16.9%	7.9	12.9%	8.9	15.6%
1993	19.6	0.0%	12.9	-3.0%	9.7	0.0%	8.3	5.1%	9.4	5.6%
1994	17.9	-8.7%	11.8	-8.5%	8.6	-11.3%	7.8	-6.0%	8.7	-7.4%
1995	16.3	-8.9%	10.3	-12.7%	8.2	-4.7%	7	-10.3%	7.7	-11.5%
1996	16.9	3.7%	10.4	1.0%	8.6	4.9%	7.2	2.9%	7.3	-5.2%
1997	17.1	1.2%	9.6	-7.7%	7.6	-11.6%	6.6	-8.3%	6.9	-5.5%
1998	16.6	-2.9%	8.4	-12.5%	6.9	-9.2%	6.3	-4.5%	6.3	-8.7%
1999	15.3	-7.8%	7.6	-9.5%	6.3	-8.7%	5.6	-11.1%	5.8	-7.9%

Table 14. Components of the Canadian population

Year	Total population	0-14	% 0-14	15-24	% 15-24	25-34	%25-34
1993	28,703,142	5,925,199	20.6	3,985,796	13.9	4,968,237	17.3
1994	29,035,981	5,961,385	20.5	3,991,192	13.7	4,899,964	16.9
1995	29,353,854	5,976,617	20.4	4,001,297	13.6	4,827,519	16.4
1996	29,671,892	5,991,806	20.2	4,023,565	13.6	4,745,858	16.0
1997	29,987,214	5,985,022	20.0	4,054,310	13.5	4,662,730	15.5
1998	30,247,949	5,958,537	19.7	4,084,481	13.5	4,552,343	15.1
1999	30,493,433	5,914,886	19.4	4,123,910	13.5	4,454,009	14.6

Year	Total population	35-44	%35-44	45-54	%45-54	55+	%55-
1993	28,703,142	2,570,557	9.0	2,317,887	8.1	3,512,544	12.2
1994	29,035,981	2,567,059	8.8	2,363,274	8.1	3,592,323	12.4
1995	29,353,854	2,570,483	8.8	2,411,807	8.2	3,669,702	12.5
1996	29,671,892	2,588,688	8.7	2,452,977	8.3	3,752,239	12.6
1997	29,987,214	2,608,965	8.7	2,478,858	8.3	3,853,105	12.8
1998	30,247,949	2,640,006	8.7	2,495,921	8.3	3,966,419	13.1
1999	30,493,433	2,687,402	8.8	2,500,796	8.2	4,088,734	13.4

Table 15: Demographic trends in Canada

Year	Total population	0-14	0-14 rate per 100,000	% annual change of rate	15-24	15-24 rate per 100,000	% annual change of rate	25-34	25-34 rate per 100,000	% annual change of rate
1993	28,703,142	5,925,199	20,643.0	n/a	3,985,796	13,886.3	n/a	4,968,237	17,309.0	n/a
1994	29,035,981	5,961,385	20,531.0	-0.5%	3,991,192	13,745.7	-1.0%	4,899,964	16,875.5	-2.5%
1995	29,353,854	5,976,617	20,360.6	-0.8%	4,001,297	13,631.2	-0.8%	4,827,519	16,445.9	-2.5%
1996	29,671,892	5,991,806	20,193.5	-0.8%	4,023,565	13,560.2	-0.5%	4,745,858	15,994.5	-2.7%
1997	29,987,214	5,985,022	19,958.6	-1.2%	4,054,310	13,520.1	-0.3%	4,662,730	15,549.1	-2.8%
1998	30,247,949	5,958,537	19,699.0	-1.3%	4,084,481	13,503.3	-0.1%	4,552,343	15,050.1	-3.2%
1999	30,493,433	5,914,886	19,397.2	-1.5%	4,123,910	13,523.9	0.2%	4,454,009	14,606.5	-2.9%
Year	Total population	35-44	35-44 rate per 100,000	% annual change of rate	45-54	45-54 rate per 100,000	% annual change of rate	55+	55+ rate per 100,000	% annual change of rate
1993	28,703,142	2,570,557	16,235.2	n/a	2,317,887	11,645.2	n/a	3,512,544	20,281.3	n/a
1994	29,035,981	2,567,059	16,422.7	1.2%	2,363,274	12,040.1	3.4%	3,592,323	20,384.9	0.5%
1995	29,353,854	2,570,483	16,642.2	1.3%	2,411,807	12,422.9	3.2%	3,669,702	20,497.1	0.6%
1996	29,671,892	2,588,688	16,856.5	1.3%	2,452,977	12,765.9	2.8%	3,752,239	20,629.4	0.6%
1997	29,987,214	2,608,965	17,046.5	1.1%	2,478,858	13,109.6	2.7%	3,853,105	20,816.2	0.9%
1998	30,247,949	2,640,006	17,212.6	1.0%	2,495,921	13,443.7	2.5%	3,966,419	21,091.3	1.3%
1999	30,493,433	2,687,402	17,284.5	0.4%	2,500,796	13,808.9	2.7%	4,088,734	21,378.9	1.4%

Table 16: Trends in male demographics

Year	Total Male Population	15-24	15-24 rate per 100,000	% annual change	25-34	25-34 rate per 100,000	% annual change	35-44	35-44 rate per 100,000	% annual change
1993	14,221,546	2,039,437	14,340.5	n/a	2,508,633	17,639.7	n/a	2,329,618	16,380.9	n/a
1994	14,383,258	2,042,820	14,202.8	-1.0%	2,476,584	17,218.5	-2.4%	2,383,586	16,571.9	1.2%
1995	14,537,506	2,047,886	14,086.9	-0.8%	2,441,251	16,792.8	-2.5%	2,442,625	16,802.2	1.4%
1996	14,691,777	2,058,918	14,014.1	-0.5%	2,399,902	16,335.0	-2.7%	2,502,364	17,032.4	1.4%
1997	14,850,874	2,074,947	13,971.9	-0.3%	2,358,043	15,878.1	-2.8%	2,559,391	17,233.9	1.2%
1998	14,981,482	2,091,273	13,959.1	-0.1%	2,301,909	15,365.0	-3.2%	2,609,740	17,419.8	1.1%
1999	15,104,717	2,112,158	13,983.4	0.2%	2,252,218	14,910.7	-3.0%	2,645,646	17,515.4	0.5%
	Total Male Population	45-54	45-54 rate per 100,000	% annual change	55+	55+ rate per 100,000	% annual change			
1993	14,221,546	1,676,757	11,790.3	n/a	2,628,063	18,479.4	n/a			
1994	14,383,258	1,749,476	12,163.3	3.2%	2,673,792	18,589.6	0.6%			
1995	14,537,506	1,822,015	12,533.2	3.0%	2,719,122	18,704.2	0.6%			
1996	14,691,777	1,890,716	12,869.2	2.7%	2,768,134	18,841.4	0.7%			
1997	14,850,874	1,962,301	13,213.4	2.7%	2,826,566	19,033.0	1.0%			
1998	14,981,482	2,028,834	13,542.3	2.5%	2,893,329	19,312.7	1.5%			
1999	15,104,717	2,099,891	13,902.2	2.7%	2,960,784	19,601.7	1.5%			

Table 17: Police per 100,000 population in Canada

Year	Police per Pop	Annual % Change	Violent Crime Rate	Annual Change
1979	202.4	n/a	609.6	n/a
1980	203.3	0.4%	635.8	4.3%
1981	203.7	0.2%	653.6	2.8%
1982	201.2	-1.2%	671.4	2.7%
1983	197.4	-1.9%	679.3	1.2%
1984	195.3	-1.1%	700.6	3.1%
1985	194.8	-0.2%	734.5	4.8%
1986	197.0	1.1%	785.1	6.9%
1987	198.5	0.8%	829.4	5.6%
1988	198.9	0.2%	868.0	4.6%
1989	198.7	-0.1%	911.0	5.0%
1990	202.3	1.8%	972.9	6.8%
1991	202.5	0.1%	1,059.4	8.9%
1992	200.8	-0.8%	1,083.7	2.3%
1993	198.2	-1.3%	1,080.7	-0.3%
1994	192.4	-3.0%	1,046.1	-3.2%
1995	187.4	-2.6%	1,007.4	-3.7%
1996	183.1	-2.3%	1,000.1	-0.7%
1997	182.5	-0.3%	990.1	-1.0%
1998	181.0	-0.8%	979.2	-1.1%
1999	181.4	0.2%	955.5	-2.4%

Table 18: Correlational coefficients with violent crime rate

Variable	1979-1999	Significance level	1993-1999	Significance level
males 15-24 years unemployment rate	0.15	not significant	0.94	0.01
males 25-34 years unemployment rate	0.44	0.05	0.98	0.01
rate of males 15-24	(0.97)	0.01	0.94	0.01
rate of males 25-34	(0.21)	not significant	0.95	0.01
Police per Population	(0.43)	not significant	0.97	0.01

Appendix B

Figures

Figure 1. Crime rate, Canada, 1979-1999

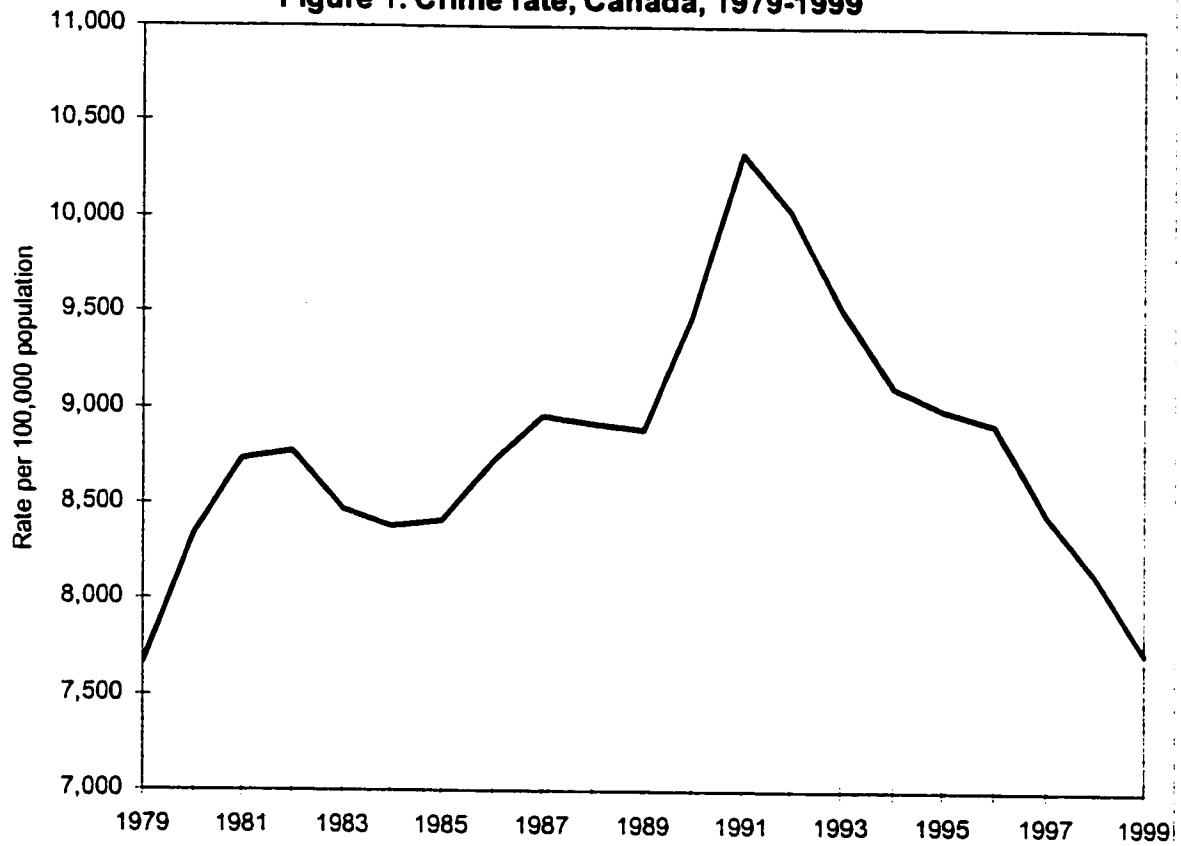


Figure 2. Crime rates, by type of offence, Canada, 1979-1999

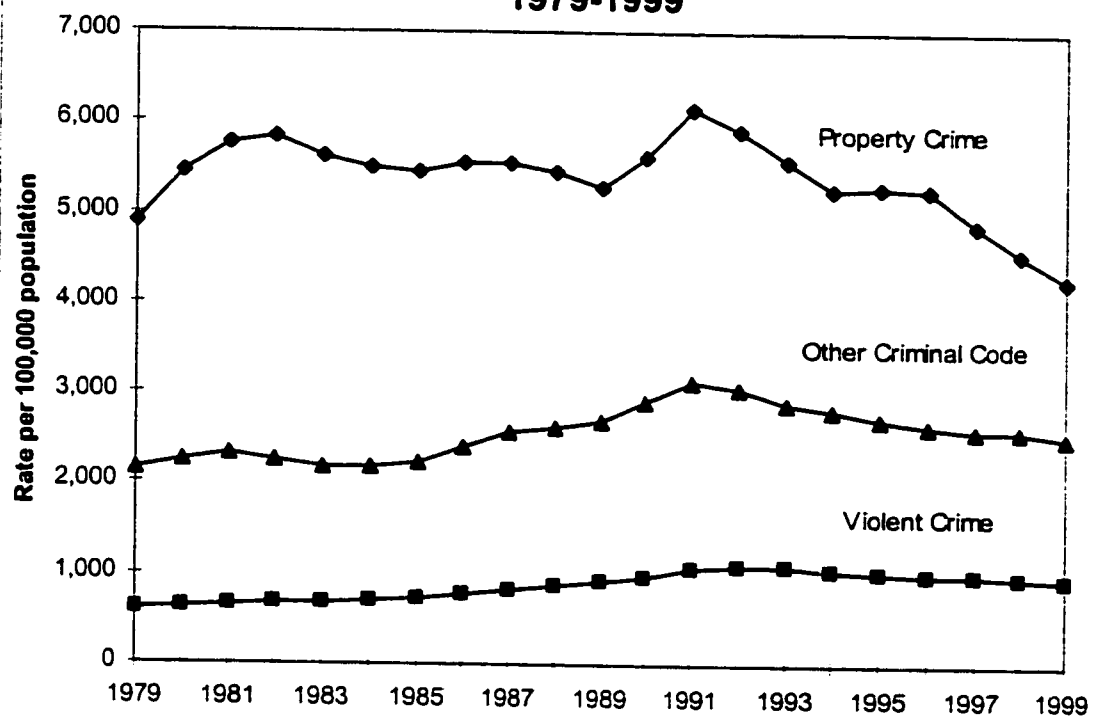


Figure 3. Violent crime rate, Canada, 1979-1999

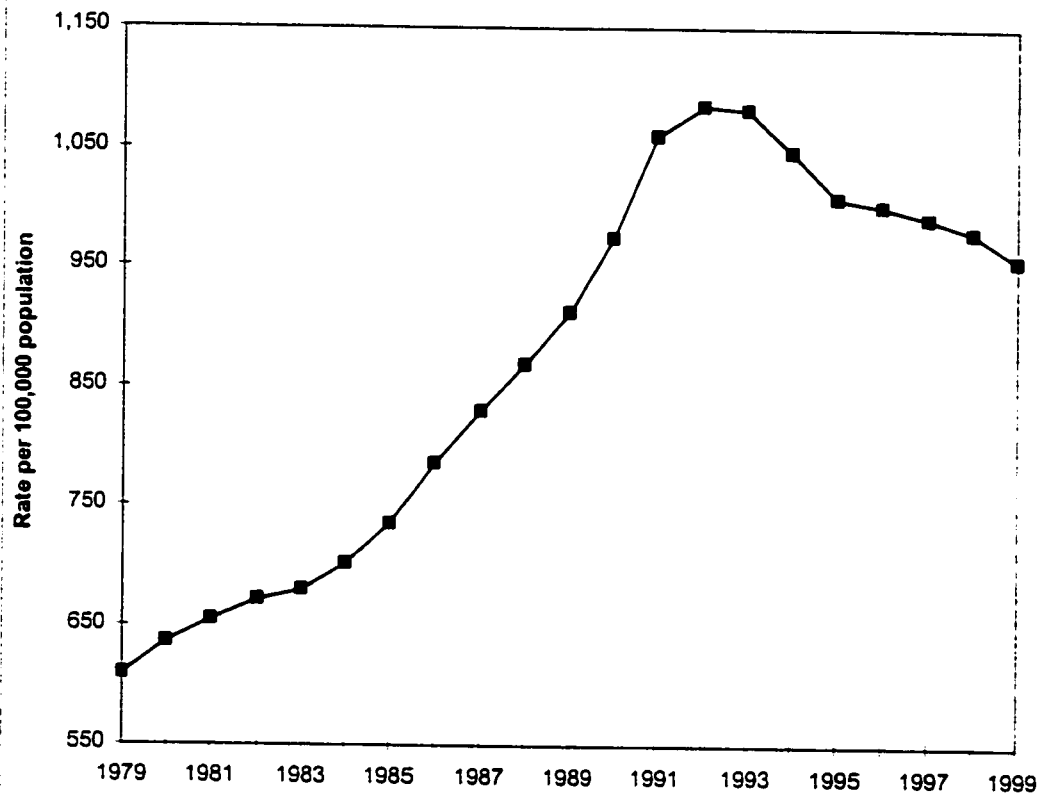


Figure 4: Contribution to the Decline in Violent Crime by Category, 1993-1999

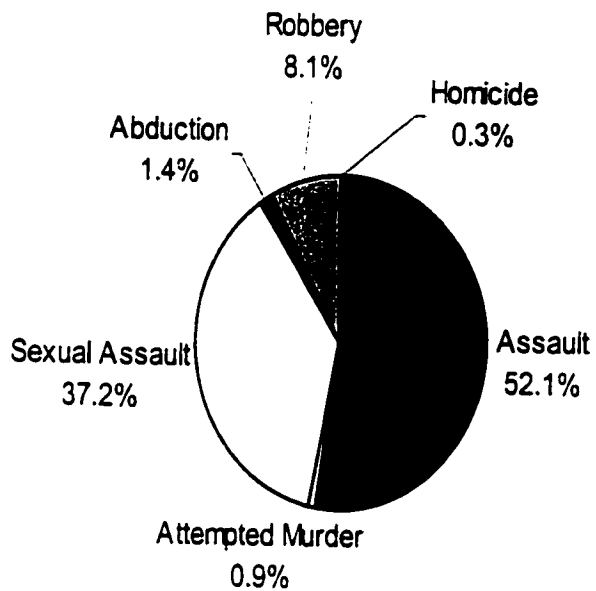


Figure 5. Unemployment rate in Canada, 1979-1999

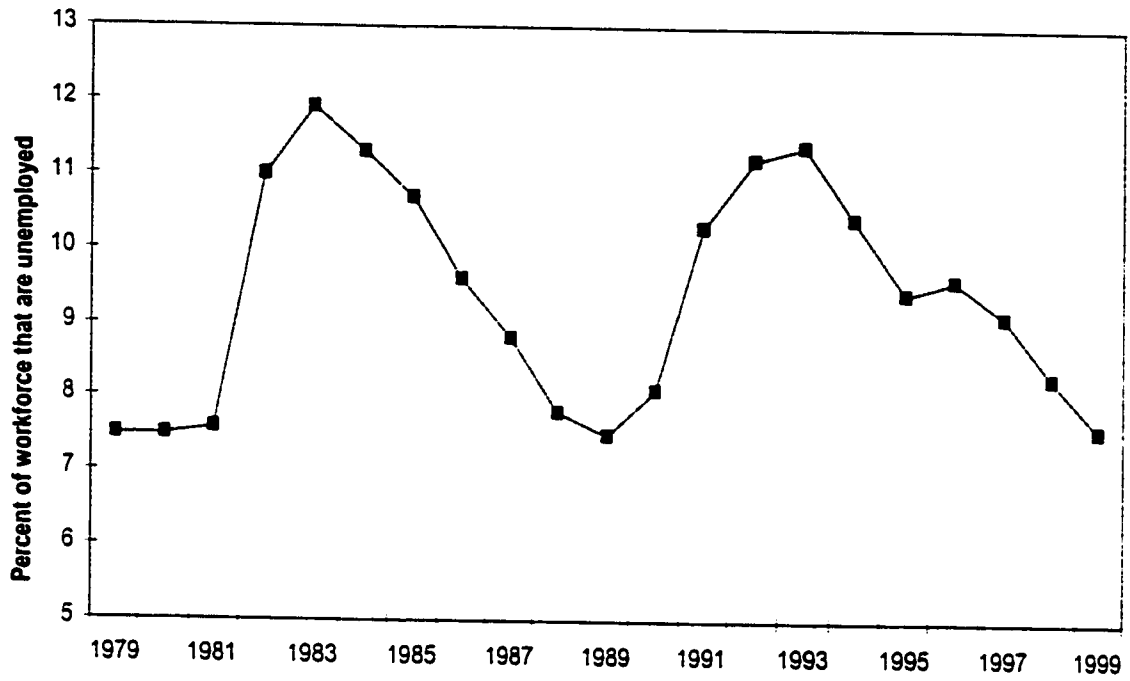


Figure 6. Unemployment rate and violent crime rate in Canada, 1979-1999

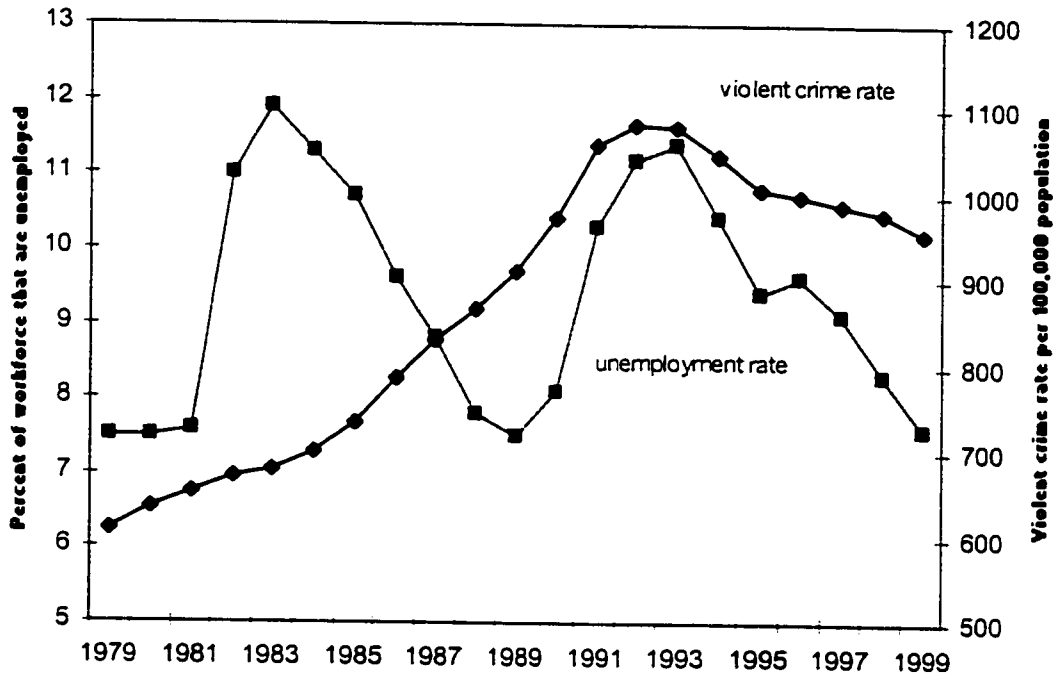


Figure 7. Unemployment rate in Canada by age groups, 1979-1999

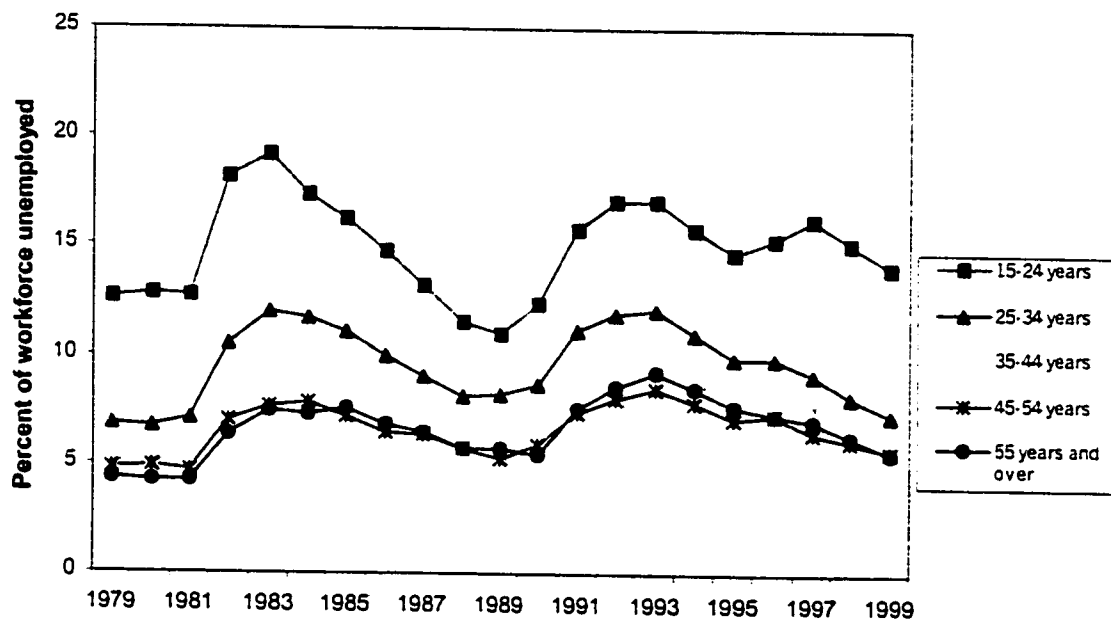


Figure 8. Male and female unemployment rates in Canada, 1979-1999

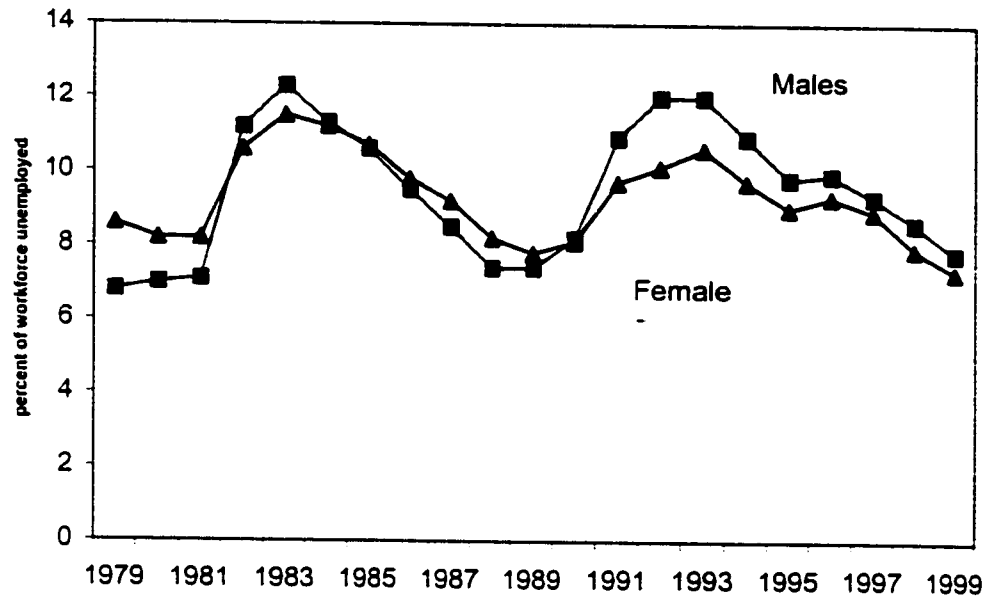


Figure 9. Male unemployment by age groups, 1979-1999

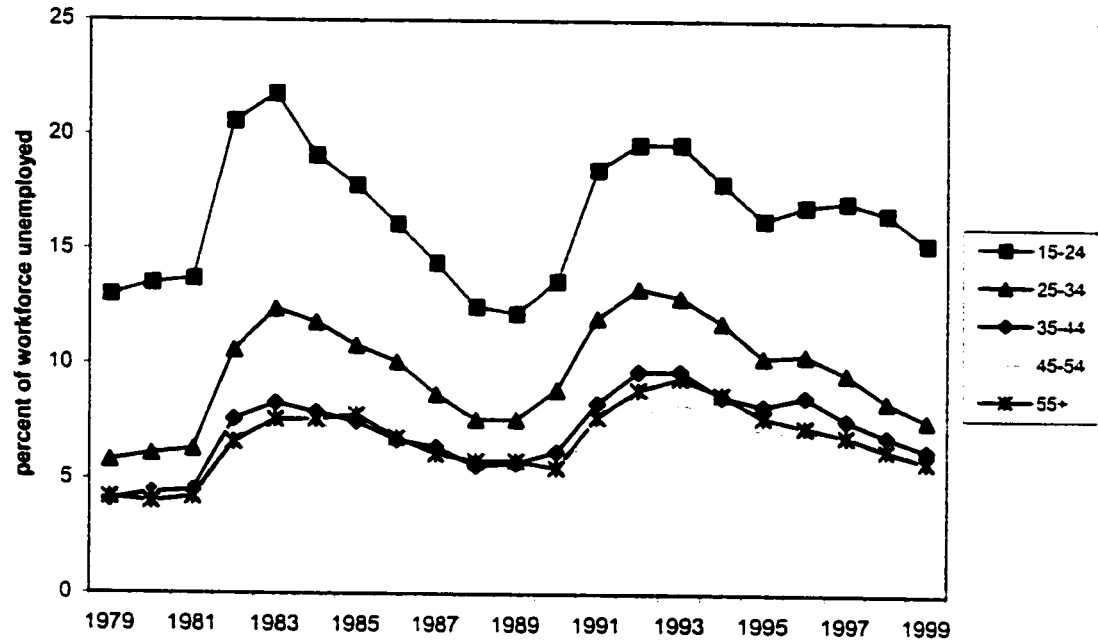


Figure 10. Male unemployment by age groups and the violent crime rate in Canada, 1979-1999

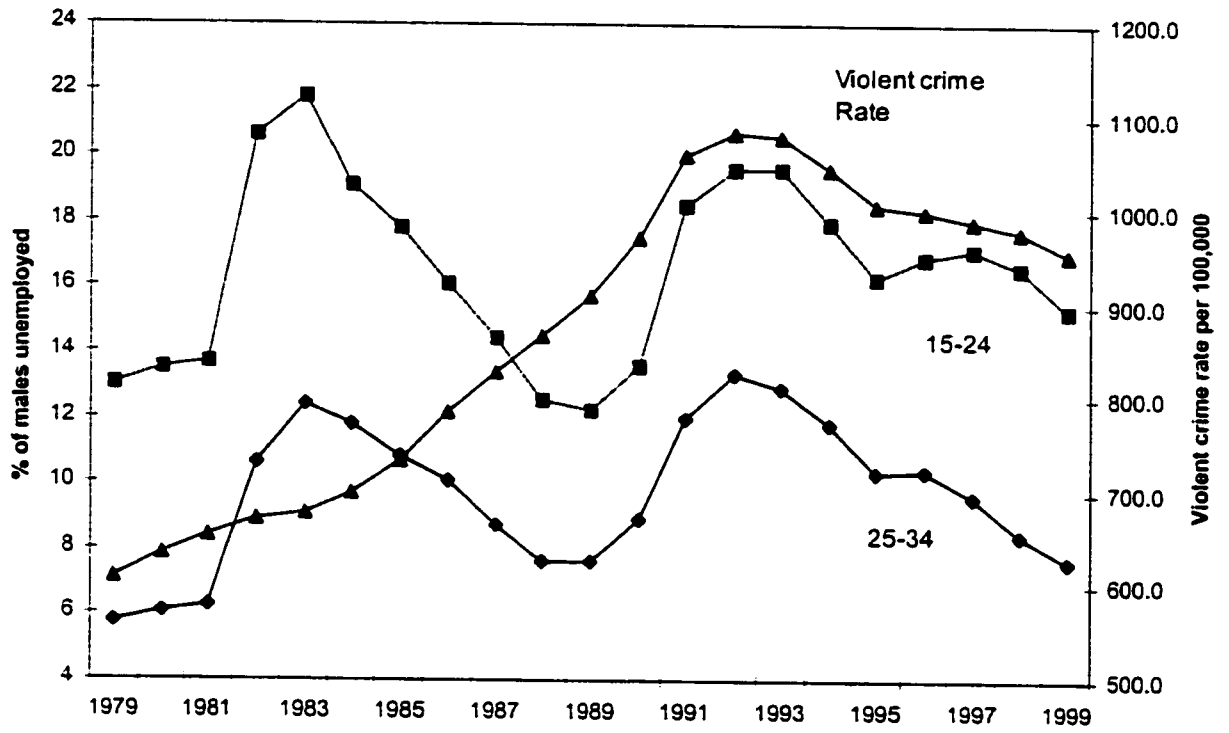


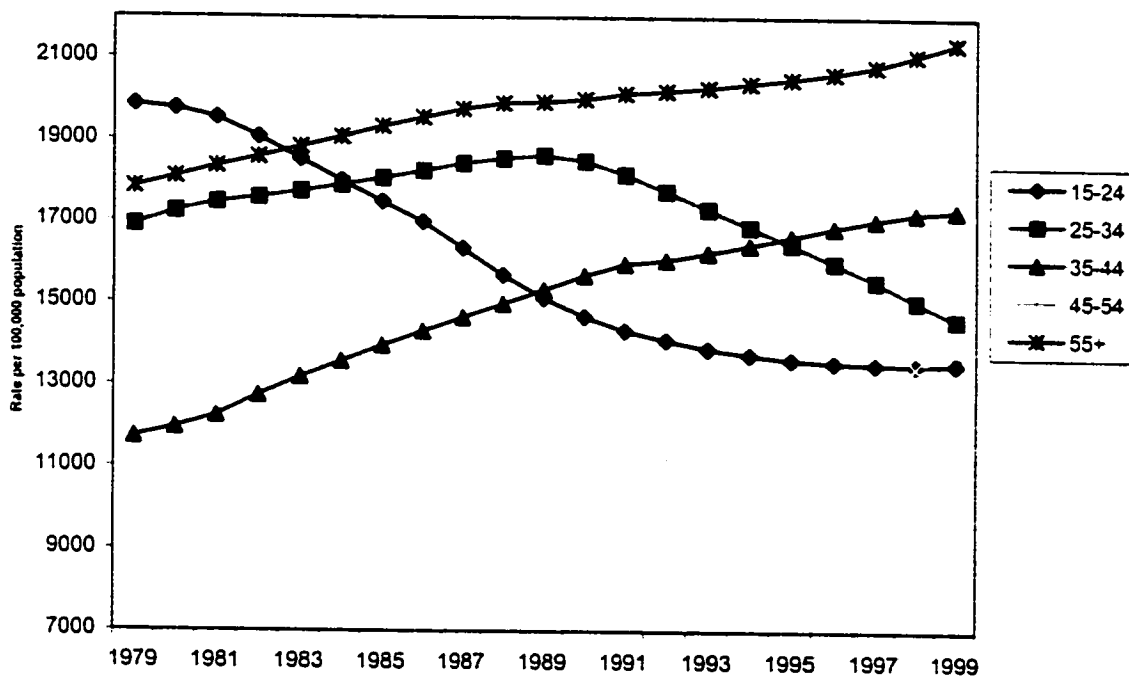
Figure 11: Demographic trends in Canada, 1979-1999

Figure 12. Male demographic trends in Canada, 1979-1999

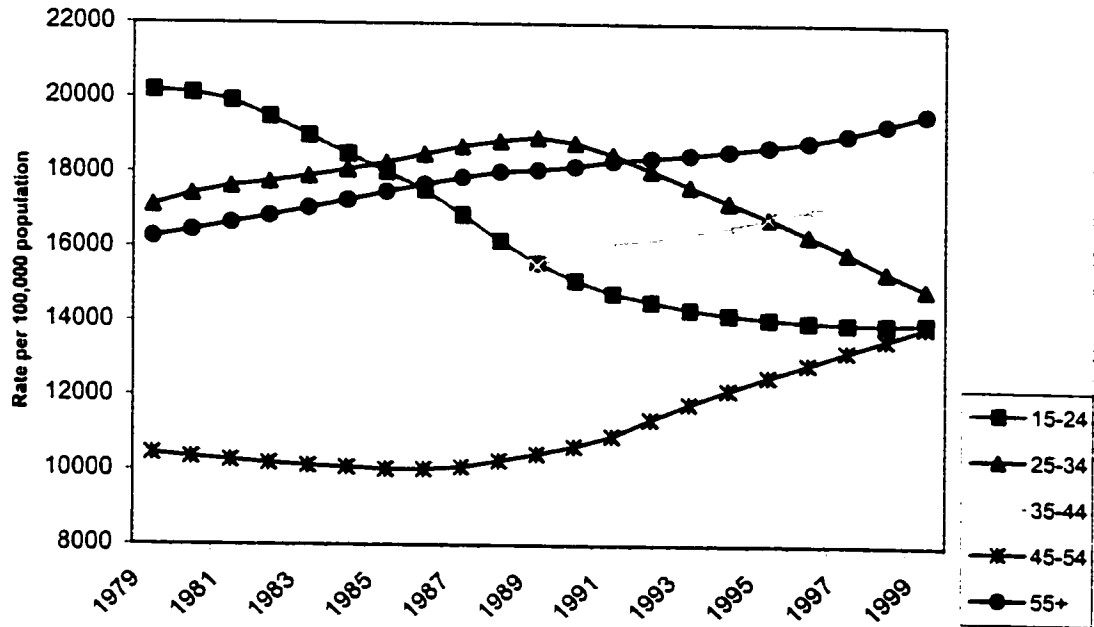


Figure 13. Male demographic trends and the violent crime rate in Canada, 1979-1999

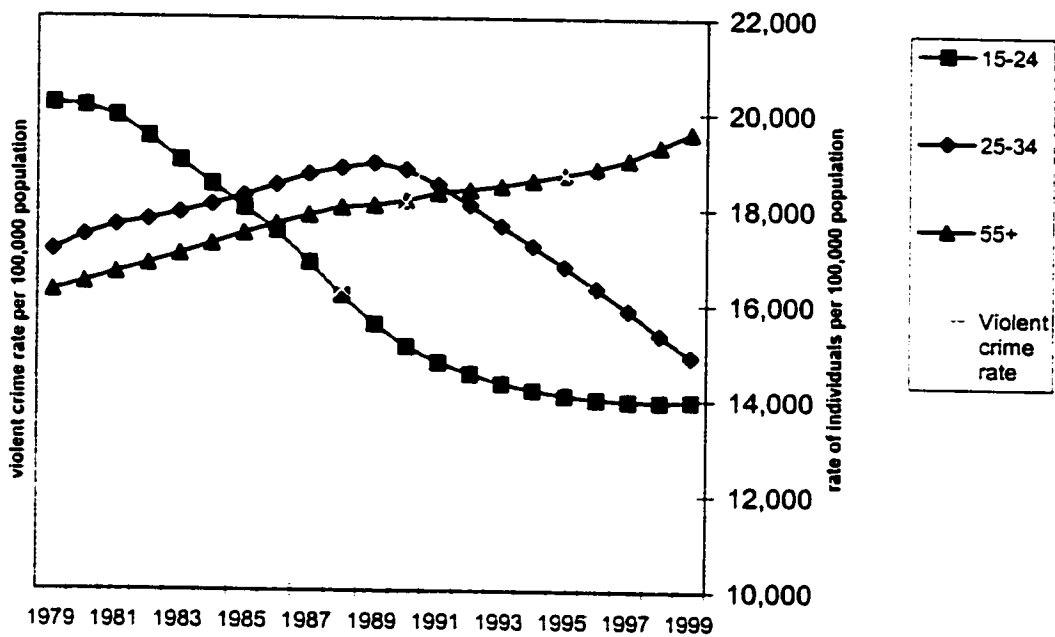
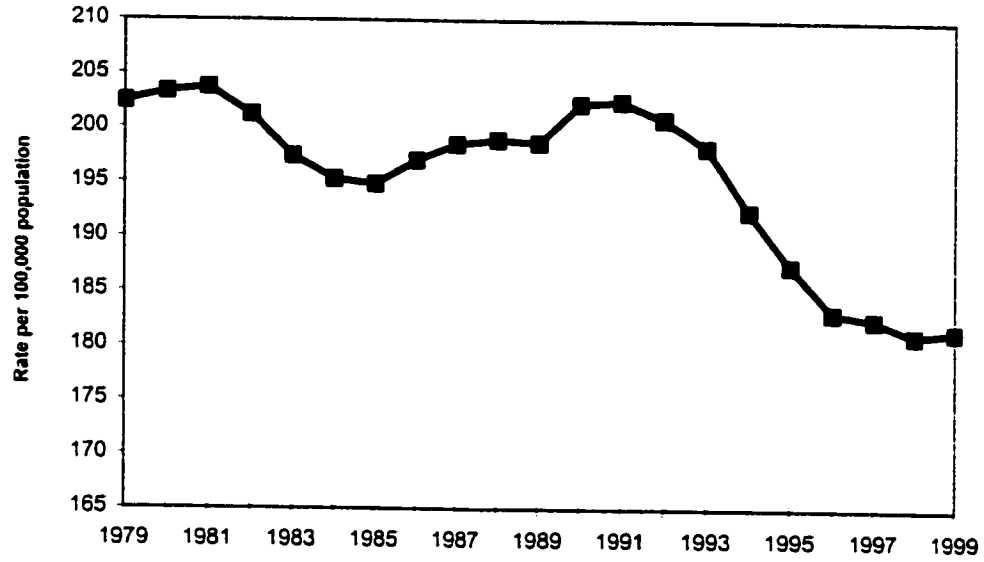


Figure 14: Police per 100,000 Population, Canada, 1979 - 1999



Source: Police Administration Annual Survey, Canadian Centre for Justice Statistics

Figure 15. Police per population and the Violent crime rate in Canada, 1979-1999

