

A Longitudinal Study of Fear of Crime in Winnipeg

by
Kristin Rachelle Clarke

A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

Department of Sociology
University of Manitoba
Winnipeg, Manitoba
@ March 2006

**THE UNIVERSITY OF MANITOBA
FACULTY OF GRADUATE STUDIES

COPYRIGHT PERMISSION**

A Longitudinal Study of Fear of Crime in Winnipeg

by

Kristin Rachelle Clarke

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of
Manitoba in partial fulfillment of the requirement of the degree
of
Master of Arts**

Kristin Rachelle Clarke © 2006

Permission has been granted to the Library of the University of Manitoba to lend or sell copies of this thesis/practicum, to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film, and to University Microfilms Inc. to publish an abstract of this thesis/practicum.

This reproduction or copy of this thesis/practicum has been made available by authority of the copyright owner solely for the purpose of private study and research, and may only be reproduced and copied as permitted by copyright laws or with express written authorization from the copyright owner.

ABSTRACT

This thesis attempts to answer the questions of whether or not Winnipeg residents have become more or less fearful of crime over time and whether changes in fear levels are related to changes in official crime rates. It also attempts to answer the question of whether certain individuals (women, minority, and elderly) experience heightened levels of fear. Four fear of crime theories; the risk interpretation model, the indirect victimization model, the vulnerability model and the multiple jeopardy hypothesis are tested using Winnipeg Police official crime data, and 1984, 1994, and 2004 Winnipeg Area Study survey results. Relationships between fear of crime and official crime rates are explored using a multiple comparison technique while multiple regression techniques were used to estimate the effects of demographic variables on fear of crime.

Contrary to the risk interpretation and indirect victimization models, results indicate that generally, mean fear levels over the twenty year time span are low, and there are no consistent associations between fear levels and official crime over the twenty year time span. Fear of crime levels increased from 1984 to 1994 then decreased from 1994 to 2004. Women, visible minorities, the less educated and married individuals expressed higher levels of fear, while the elderly expressed lower levels of fear. Higher levels of fear were expressed by females, particularly when other indicators of vulnerability were added to the regression models. These findings lend partial support to the vulnerability model and multiple jeopardy hypothesis.

The results of this thesis suggest that most people in Winnipeg are not that fearful. Fear rates may fluctuate but tend to revert to relatively low levels, even when crime rates increase. From a policy perspective, crime is not as important an issue to the public and may not merit a general increase of resources for crime suppression. A more prudent allocation of resources would see them directed to those most vulnerable: low-income minority women.

ACKNOWLEDGEMENTS

This thesis would not have been possible without the support of many people. Firstly, and foremost, I would like to thank my advisor Dr. Michael Weinrath for the endless hours you have spent reading and editing my thesis. I cannot thank you enough for the continued guidance and support throughout my undergraduate and graduate years. I would not be here today if it wasn't for your encouragement and enthusiasm in starting me down the academic path.

Many thanks to my committee members, Dr. Lori Wilkinson, and Dr. Brenda Bacon for your insightful suggestions and guidance. Your comments challenged me to consider alternative ideas and viewpoints.

Mom and Dad, I cannot express how thankful I am for your continual support and encouragement throughout my years in University. Your confidence in my abilities to succeed has brought me here today. To my sister Ashley, I thank you for always reminding me not to be so hard on myself and just do my best. I hope that you would take your own advice while you are completing your nursing degree. To my grandmothers, Aunts and Uncles thank you for all your love and support throughout the years. Graham, I thank you for being so patient and understanding during this endeavor. Special thanks for your constant encouragement and total support in my attainment of this goal. To my neighbor Barb Johnstone. I wish that you could have been here to see the completion of my thesis. Your unfailing positive outlook despite numerous health complications has taught me to keep persevering despite the many hurdles life throws at you.

For the continual support when times were tough, I would like to thank my student colleges Rana and Marlaine. Your friendships, laughter and lending ears gave me the will to finish this thesis. I am so glad to have shared this experience with you.

I would like to thank the staff at the Winnipeg Area Study, in particular Tracey Lewis for your cooperation and assistance with the data for this project. Finally, I would like to thank The Social Sciences and Humanities Research Council, The University of Manitoba, and Alaa Abd El-Azia, the Vice President of Research and Graduate Studies at the University of Winnipeg, for providing me with the financial means to complete this thesis.

TABLE OF CONTENTS

ABSTRACT.....	i
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vi
LIST OF FIGURES.....	vi
APPENDECIES.....	vi
CHAPTER 1 INTRODUCTION.....	1
CHAPTER 2 LITERATURE REVIEW.....	5
2.1 Fear Definitions.....	5
2.2 Longitudinal Analysis of Fear.....	9
2.3 Official Crime Rates and Fear.....	14
2.4 Correlates of Fear of Crime.....	16
2.5 Gender and Fear of Crime.....	19
2.6 Theoretical Models.....	23
2.6.1 Risk Interpretation Model.....	24
2.6.2 Indirect Victimization Model.....	27
2.6.3 Vulnerability Model.....	29
2.6.4 Multiple Jeopardy Hypothesis.....	31
2.7 Hypothesis.....	33
CHAPTER 3 METHODS.....	36
3.1 Data Set.....	36
3.2 Official Crime Statistics.....	38
3.3 Dependent Variables.....	40
3.4 Independent Variables.....	42
3.5 Analysis Plan.....	44
CHAPTER 4 RESULTS.....	48
4.1 Sample Description.....	48
4.2 Crime Statistics Trends.....	52
4.3 Fear of Crime Trends.....	57
4.4 Fear and Crime Trend Comparison.....	61
4.5 Bivariate Regressions.....	65
4.6 Multiple Regressions.....	67
4.7 Fear of Crime and Gender.....	72
CHAPTER 5 DISCUSSION.....	79
5.1 Summary of Findings.....	79

5.2 Theoretical Explanations	81
5.2.1 Risk Interpretation Model	81
5.2.2 Indirect Victimization Model	84
5.2.3 Vulnerability Model	86
5.3 Measurement Issues	88
5.4 Policy Implications	91
5.5 Global Contributions to the Literature	93
5.6 Future Research	95
5.7 Conclusion	98
BIBLIOGRAPHY	99
LIST OF TABLES	vi
Table 1: Sample Description by Year	49
Table 2: Multiple Comparisons	59
Table 3: Bivariate Regression	67
Table 4: Multiple Regression	69
Table 5: Multiple Regression for Males and Females	73
LIST OF FIGURES	vi
Figure 1: Criminal Code Offence Trends 1977-2003	53
Figure 2: Total Criminal Offence Rate	54
Figure 3: Total Violent Crime Offence Rate	54
Figure 4: Total Property Crime Offence Rate	55
Figure 5: Total Other Crime Offence Rate	56
Figure 6: Mean Level of Fear by Year	58
APPENDECIES	104
Appendix A: Robbery Rate per 100,000	104
Appendix B: Sexual Assault Rate per 100,000	105
Appendix C: Assault Rate per 100,000	106
Appendix D: Break & Enter Rate per 100,000	107
Appendix E: Theft Rate per 100,000	108
Appendix F: Fraud Rate per 100,000	109
Appendix G: Worry About Someone Breaking In	110
Appendix H: Worry About Someone Taking Something by Force	111
Appendix I: Worry About Coat Being Stolen	112
Appendix J: Worry About Being Sexually Assaulted	113
Appendix K: Worry About Being Cheated or Conned	114
Appendix L: Sample Weights	115
Appendix M: Correlation Matrix of Dependent and Independent Variables	116
Appendix N: Correlation Matrix for Male Model	117
Appendix O: Correlation Matrix for Female Model	118
Appendix P: Fear and Crime Trend Comparison	119

CHAPTER 1 INTRODUCTION

Throughout the last decade, Canadian and United States crime rates have been declining, including high profile offences such as homicide (Wallace 2004). Civic polls consistently show that crime remains a topic of concern, surprising given the fall in reported offences. The puzzle leads to the research question, are people still fearful of crime, regardless of lower crime rates? If not, what is the connection between official crime rate changes and people's perception of victimization risk?

These questions are important because of the impact that fear of crime can have on an individual's day to day life, not to mention its effect on communities in general. Fear can restrict where people go, limit the activities they engage in, and intensify activities they feel necessary to ensure the safety of themselves and their loved ones (Hale 1996; Warr 1995, 2000). Fear can destroy a positive sense of community. It can harden attitudes towards street criminals, leading to stigmatization of the poor and those who differ from the norm. Elevated fear levels can undermine public faith in the ability of the police, courts and corrections to manage crime. Fear has also been found to have detrimental psychological effects on people (Hale 1996).

Significantly, fear can have greater negative consequences for women than men. Feminist researchers have argued that as a consequence of fear, women take more precautionary measures than men, both in public and private. Women are more likely to limit their movements in public or isolate themselves in private to avoid danger (Stanko 1990). Because women's anxiety is partially based on fear of men's violence, they must constantly negotiate their safety with men they know, those whom they live with, work

with and socialize. As men are likely to be women's intimate companions, or colleagues and bosses at work, the very people who women turn to for protection are the ones who may pose the greatest danger. Feminists maintain that the greatest problem with fear of crime in women's lives is that it often keeps women out of the public sphere, and in the homes where they are most likely to become victims of male violence (Stanko 1990).

Changes in fear levels over time are important to policy makers. Higher fear levels within the general public indicate that greater resources are needed in areas of crime control and community development. On one hand, greater levels of fear in certain groups such as women indicate that initiatives directed at decreasing fear have to be tailored to meet their specific needs. On the other hand, if fear is declining (and there are no differences in individual levels of fear) public monies directed at crime control may be better spent in other areas. Intuitively, one would expect that reported crime rates will directly influence fear. If this is not the case, more effort may be needed by government agencies to provide a realistic estimate of risk to the public.

Because the crime problem is defined by the media in sensationalist terms, it is crucial for researchers to determine more specifically how people feel about crime, whether some are more fearful than others, and the influence of fear on their daily lives. For this purpose, the survey method has been an important strategy by investigators to assess public attitudes towards crime and the anxiety it generates. Surveys have spawned a large literature on fear of crime and victimization, adding to our knowledge of predatory crime and its influences on our quality of life. Surveys have been criticized, however, for poor measurement of fear, leaving unsettled the question of which factors are most likely to influence individual fear, and under what circumstances (Ferraro 1995).

Another deficiency is a dependency on cross-sectional designs: longitudinal surveys that measure changes in fear over time are still infrequent (Warr 2000). This is unfortunate, insofar as longitudinal surveys allow us to more carefully assess how social changes impact attitudes towards crime, and examine the relationship between fear levels and official crime rates.

My thesis attempts to answer the questions of whether or not Winnipeg residents have become more or less fearful of crime over time and whether or not any increases or decreases in fear levels are related to changes in the official crime rates. I also attempt to answer the question of whether certain individuals experience heightened levels of fear. Three years (1984, 1994, 2004) of survey data from the Winnipeg Area Study and 26 years of official crime data from Winnipeg Police Service are used to examine the changes in fear over a twenty year time span. In addition, I use the fear survey data and official crime data to test three theories: the risk interpretation model, the indirect victimization model, and the vulnerability model.

Although my thesis is based on a repeated cross sectional design, it represents an extensive examination of changes in Winnipeg residents' fear of crime over time. Hypotheses are derived from the fear of crime theoretical models, and then tested empirically. The significance of study findings are discussed, and the implications for future research and social policy outlined. The use of three theoretical explanations provides for a rigorous inquiry into the relationship between fear of crime, official crime, and demographic factors. The use of three survey sources of fear data allows fear of crime to be contextualized as a social trend, rather than as a single occurring event.

For theory development, this study compares the relative strengths of risk interpretation, indirect victimization and vulnerability model in explaining the relationship between fear of crime and official crime rates. From a policy perspective, insights gained into fear of crime trends should help government administration in making more effective decisions about where public monies should be directed.

This thesis is comprised of five chapters including the introductory chapter (Chapter 1). Chapter 2 offers a presentation of the current literature surrounding fear of crime. This includes a discussion of the fear of crime definition, longitudinal analysis of fear, official crime rates and fear, the correlates of fear of crime, and a section on fear of crime and gender. Included in this chapter is a presentation of the fear of crime theoretical models and four hypotheses which have been derived from them. Chapter 3 focuses on data methods and contains a discussion of the Winnipeg Area Study data, Official Crime Statistics, dependent and independent variables and the overall analysis plan. The results of the thesis are presented in Chapter 4. This chapter presents the sample description, crime statistics trends and fear of crime trends. Results from the fear of crime trend comparison, bivariate regressions, multivariate regressions and interaction effects for gender are also put forth. Finally, the discussion (Chapter 5) provides a summary of the findings in relation to the fear of crime theoretical models. Discussion surrounding measurement issues, policy implications, global contributions to the literature and future research are also presented. This chapter finishes with a brief conclusion of the thesis. The appendices include a number of charts relating to crime rates and fear of crime levels.

CHAPTER 2 LITERATURE REVIEW

2.1 Fear Definitions

Despite decades of research and debate, investigators have yet to settle on a definition of fear of crime. Over the years, “fear” has been equated with a variety of emotional states, attitudes, or perceptions including mistrust of others, anxiety, perceived risk, fear of strangers, or concern about deteriorating neighbourhoods or declining national morality (Warr 2000). Much of the confusion over the meaning of fear seems to arise from a failure to recognize elementary distinctions between perception, cognition, and emotion. Warr defines fear of crime as, “an emotion, a feeling of alarm or dread caused by an awareness or expectation of danger. This affective state is ordinarily (though not invariably) associated with certain physiological changes, including increased heart rate, rapid breathing, sweating, decreased salivation, and increased galvanic skin response.” (2000:453-454)

Some researchers have sought to refine the definition. Keane (1992) argues that fear of crime has two dimensions: formless fear and concrete fear. *Formless* fear is a generalized feeling of vulnerability or perception about the safety of a respondent’s neighbourhood. This type of fear is typically measured by asking respondents, “How safe do you feel walking alone in your neighbourhood at night?” Keane (1992) states that this type of fear may reflect a perception that in certain circumstances, conditions of the neighbourhood are aversive. Conversely, *concrete* fear is a measure of a respondent’s perceived risk and/or worry of victimization (Keane 1992). This type of fear is typically

measured by asking respondents to indicate how likely they feel they are to become a victim of a crime in the next year (for example, "How much do you worry about someone sexually assaulting you?").

Most of the survey research done in the area of fear of crime relies on what Pantazis (2000) calls the 'global measure of fear', the formless fear question. Fear of crime is typically measured by asking: "Is there any area right around here, that is, within a mile where you would be afraid to walk alone at night?" (Forde 1993; Haynie 1998; Roberts 2001; Taylor 1998; Warr 1995). This measure is criticized as being too hypothetical, limited to nighttime, not mentioning crime, and only crudely estimating intensity (Ferraro & LaGrange 1988; Warr 2000). It is also criticized for expecting respondents to define what "safe" means, and what constitutes a neighbourhood (Christian 2001).

Researchers identify other conceptual concerns with measuring fear of crime. For example Farrall, Bannister, Ditton and Gilchrist (1997) critique the use of the survey method, because it converts a social process into a series of quantifiable events which do not reflect the experiences or feelings of those involved. They argue that surveys are, "static and often reduce the experience to a decontextualized snapshot where ongoing experiences and strength are rarely captured" (Farrall et al. 1997: 660).

A key conceptual issue frequently discussed in the literature is that of fear versus perceived risk. Mesch (2000) argues that the distinction between fear of crime and perceived risk has been an important contribution to the field. Fear of crime is defined as "an emotional response of dread or anxiety to crime or symbols that a person associates with crime" (Ferraro 1995: 4). Ferraro distinguishes perceived risk as, "a recognition of a

situation as possessing at least potential danger, real or imagined” (1995: 4). While the two concepts appear related, a number of studies have adduced empirical evidence that the two constructs are quite distinct and are affected by different factors (Mesch 2000). Two researchers in particular (Ferraro and Warr) have made large contributions in the area of perceived risk and its relation to fear of crime. They agree that fear of crime and perceived risk do in fact measure different phenomena, and therefore should not be used interchangeably (Ferraro 1995; Warr 2000). They also concur that fear is a fundamentally different psychological experience than perceived risk. Ferraro (1995) views fear as an emotion that may be attached to a physiological reaction, while risk is a distinctly cognitive judgment. In his risk interpretation theory, he additionally proposes that perceived risk affects both how people feel (fear) and what they do (constrained behavior). He concludes that perceived risk is the most important determinant of fear.

The degree of fear attached to particular crimes is a combination of not only the perceived risk of the offense, but the perceived seriousness of the offense as well (Warr 2000). Earlier works of Warr (1987), however, conclude that although perception of risk is often an important predictor of fear, it is not a perfect correlation since fear also depends upon how serious the individual perceives the offence to be and the individual’s risk sensitivity. “Fear of individual offences is a multiplicative function of the perceived risk (i.e. the subjective probability of victimization) and the perceived seriousness of offences.” (Warr 2000:298) For strong fear to be generated, the offence must be perceived as both serious and likely to occur (Warr 2000). I will examine this issue in greater detail when I outline the risk interpretation model.

In response to these criticisms, researchers have made attempts to improve on the fear of crime measure. Warr's (2000) research has more thoroughly measured fear by looking at five offense specific indicators such as theft, fraud, assault, sexual assault, and robbery. For example he measures fear of sexual predation by asking respondents, "How often do you worry about someone sexually assaulting you?" His measure gives the respondent some context in which to answer the question (Warr 2000). However, Warr's measures of individual offences have also been criticized because he fails to make a distinction between fear and risk assessment. Christian (2001) critiques the use of multi-measure items because they often confuse (rather than clarify) the fear of crime. She indicates that multi-item measures still share the same methodological issues, specifically the failure to provide a frame of reference for the terms used and a lack of distinction between fear and risk assessment (Christian 2001).

The revised fear measure created by Denker and Winkel (1998) uses a three item scale intended to capture the degree to which respondents feel tense, afraid and aggravated when thinking about the possibility of becoming a victim of crime. Norris and Kaniasty (1992) take a different approach, by looking at safety and worry. The safety measurement consists of two measures, including the traditional one asking how safe individuals felt walking alone in their neighbourhoods during the day and night. Their worry measure, on the other hand, attempts to capture respondent concerns about being personally victimized by calculating a mean of four items (e.g. "When you leave your house or apartment, how often do you think about being robbed or physically assaulted?").

Farrall et al. 1997 postulate that survey research can be strengthened by using a methodological triangulation such as “open” and “closed” ended questions. They believe that crime surveys often ignore the meaning of events for respondents; turn processes into events; neglect that fear can be a multifaced-phenomena; poorly conceptualize the fear of crime; ignore important contextual variables; greatly influence the reported incidence of the fear of crime and rely too heavily on respondents recall (Farrall et al. 1997).

There are five ways in which sound fear of crime measures can be developed. First, one should look beyond judgments and concerns about crime and focus more on the emotional state of fear or worry. Second, surveys should avoid general references about crime and make explicit reference to the type of crime or victimization. Third, surveys should avoid hypothetical situations and aim rather towards looking at experiences in everyday life. Fourth, researchers must be extremely careful in designing survey questions to avoid double-barreled questions such as, “Do you feel safe or would you feel safe walking....?” Finally, because perceived risk appears to be designated as an important concept in the understanding of fear, researchers should direct more efforts to measure both perceived risk and fear instead of using them interchangeably (Ferraro 1995).

2.2 Longitudinal Analysis of Fear

Few longitudinal studies have examined fear of crime (Haynie 1998). However, there is a considerable amount of research using cross-sectional surveys which examine the association between fear and other sociodemographic characteristics such as gender,

age, education, marital status and race. Warr (2000) argues that crucial aspects of fear have often been overlooked by the conventional annual surveys that employ national samples. For example, he suggests that even though urban panics are the most common forms of fear, we seem to know very little about the causes underlying them, whether fear dissipates gradually or suddenly after the incident, or whether a portion of the fear permanently resides in the community (Warr 2000).

Many experts in the field indicate that a longitudinal panel study on the topic of fear is the only realistic way of moving forward (Ditton, Chadee & Khan 2003). Longitudinal research, allows researchers to describe and explain patterns of variation over time. There are three types of longitudinal studies: trend, cohort and panel. A trend study (which is the type used in the WAS) examines a phenomenon of general population over time. It consists of a series of questions which are repeated throughout the study but are asked of different respondents. In contrast, cohort studies examine more specific subpopulations (cohorts) as they change over time. This involves interviewing individuals with similar characteristics but are still different respondents. Typically a cohort is an age group, but it can also be based on other types of groupings. Panel studies are similar to trend and cohort except that the same set of people are studied each time and are asked the same questions (Babbie 2001). This is the best type of longitudinal study as it allows for a more accurate analysis of change. One of the main problems associated with using trend studies as opposed to panel studies is that because we do not measure the same cases over time, we limit our ability to measure “true” change, and that the differences observed could be due to the differences in respondents and not actual change.

While many investigators argue that panel studies are the best way to conduct fear of crime research, this method also has limitations in terms of reliability. For example, in a two wave panel study conducted by Ditton, Chandee and Khan (2003), they found that even if the same individuals are used over a short period of time their responses to survey questions differ. Results of their study indicated that only 12 out of 474 (3%) respondents answered all 18 questions identically on both surveys which were administered half an hour apart. They report that the differences can be attributed to different questioning order, impression management, attitude strength, or uncertainty about feelings towards the issue of fear of crime (Ditton, Chandee & Khan 2003). A final problem that has been associated with panel studies is the attrition rate of respondents. For instance, there were 728 respondents in the first wave of their study, but only 474 for the second wave. In other words, the retention rate was approximately 64 percent. This creates large problems in trying to achieve optimal sample sizes and representativeness. However, despite these difficulties, the panel study is the superior method for understanding social change.

Has fear of crime in Western society increased or decreased over time? Overall findings are mixed. Most studies show that fear has remained relatively constant (Forde 1993; Roberts 2001; Taylor 1999; Warr 1995). Some studies do, however, report fluctuations over time. Haynie's (1998) national longitudinal study on gender and fear of crime measures fear by the General Social Survey question which asks respondents "Is there any area, right around here, that is within a mile where you would be afraid to walk alone at night?" Overall, mean levels of fear increase from 1973 to 1994. However, Haynie notes that this trend is not linear, as fear of crime actually decreases from 1976

until 1989, and then increases until 1994. She speculates that because the official violent crime rate also shows a steady increase from 1988 to 1992, the media's coverage of violent crime may have influenced the public's fear. Krannich, Berry and Greider (1989) look at fear of crime in several rural communities in the Western United States, where population sizes change due to resource development activities. The researchers surveyed adult members from four different towns, using a question concerning perceptions of personal safety from crime and violence in the local community. Respondents were randomly sampled every two years, from 1982 to 1986. Results of their study show variation in the reported fear levels between the four towns. Fear of crime declines in two towns, increases in one and remains the same in the other. The variable that exhibits the most consistent relationship with fear is the contextual factor of community change. They find that fear is highest when a community has experienced recent rapid growth and social ties are weakened.

In a recent review of national survey data Roberts (2001) looks at Canadian historical trends to explore the relationship between fear of crime and attitudes towards criminal justice issues. His study, which consists of four parts, looks at fear of criminal victimization, perceptions of crime as an important problem, public perceptions of crime trends, and attitudes towards the criminal justice system. He finds that, overall, fear of crime is relatively consistent but the percentage of Canadian respondents expressing fear is slightly lower in 2000 than it has been for many years. For example, in 1970, 29% of respondents express fear of walking alone at night, while in 2000 the percentage decreases to 27%. Two explanations are offered for declining fear levels. First, a decline in fear can be explained by the actual decline in victimization rates and second, by

changing perceptions of the crime rate. In other words, people are more likely to report feeling safe if they believe that they are less likely to become victims (Roberts 2001).

Crime does not generate high levels of concern by Canadians in comparison to other social issues, such as health care and the economy. While less than one third state that they are very concerned about crime, 69% of Canadians relate that they have greater concerns about health care and 58% have greater concerns about child poverty (Roberts 2001). Roberts also finds that most respondents believe that crime rates are rising. In a national survey conducted in 1994 over two-thirds of Canadians believed that crime rates had increased over the last five years, when in fact, they had showed a 5% decline. Overall, there appears to be strong support for the criminal justice system, and reasonable support for parole and confidence in the courts (67%).

Warr (1995) uses national US Gallup poll results (1965 to 1993) and US General Social Survey findings to outline American trends on attitudes towards crime and punishment. Similar to Haynie's (1998) research, Warr finds a moderate increase (9.3%) in fear of crime, although generally it has remained consistent. Warr's longitudinal assessment differs from others because he uses offense specific measures of fear. He does not use the typical, "Do you fear walking alone in your neighbourhood at night" but more specific crimes such as fear of robbery, rape and burglary. Warr finds that burglary, rather than murder, is most feared. This finding suggests that respondents take the subjective probability of victimization into account when assessing their fear of specific offences. These findings give credence to the argument that in order to obtain more accurate measures of fear, questions must be put into context for respondents to answer more accurately.

A Manitoba study conducted by Forde (1993) looks at yearly surveys completed from 1981 to 1992 to assess if there are any patterns in Winnipeg residents' opinions about crime and fear of crime. He evaluates whether fear is influenced more by perceived crime in neighbourhoods, the city or nationally. Forde (1993) finds no change in fear over the 11 year period and no consistent correlations between perceived crime in the city, neighbourhood, country and feelings of safety and walking alone (Forde 1993). Forde (1993) indicates that there is a lack of correspondence between citizen perceptions of crime and official crime rates. Perceived crime in the neighbourhood was weakly related to both feelings of safety and marginally associated with walking alone in neighbourhood at night.

2.3 Official Crime Rates and Fear

There are no consistent associations between fear of crime and official statistics within the fear of crime literature. Some studies show a lack of correspondence between fear of crime and official crime rates (Forde 1993; Taylor & Shumaker 1990) while other studies indicate an association between the two over time (Haynie 1998; Warr 1995). Haynie (1998) finds that respondents increasing fear of crime is consistent with the rise in violent crime in the United States over a 20 year time span. Warr (1995) reports similarity between fear of crime and the official crime rate, yet it does not necessarily indicate any causal connection between the two. He argues, however, that fear is not out of line with objective risk as measured by the Uniform Crime Reports.

The hazards explanation, which has been used by a number of researchers (Taylor & Shumaker 1990; Weinrath 1999) offers an explanation for the often reported lack of relationship between official crime rates and fear. This explanation focuses on the idea that the process of adaptation may be a third variable in the equation. In other words, just as we adapt to a noise or odor, one may also adapt to threats of crime. For example, Manitobans get used to living in cold, below average temperatures during winter months. We carry out our daily activities despite cold weather, whereas someone visiting from the elsewhere may find the temperature unbearable, and find themselves reluctant to participate in activities outside the house. If there is little or no linkage between official crime and fear, the hazards explanation provides plausible explanation for this counter-intuitive finding.

Some researchers demonstrate that reported fear levels are not always a reflection of objective probabilities with respect to risk, but instead reflect perceived vulnerabilities that often correlate poorly with actual risk (Smith, Torstensson and Johansson 2001). One of the largest debates surrounding the issue of perceived and actual risk is between Warr and Ferraro. Warr (2000) indicates that the weight of contemporary evidence suggests that the general public exaggerates the risk of serious criminal victimization. He states that the public is likely to exaggerate the frequency of rare and serious crimes, and underestimate the frequency of more common ones due to the media's tendency to sensationalize violent crime. Heath, Kavanagh and Tompson (2001) support this argument, stating that fear of crime remains a paradox with people exhibiting great fear of statistically rare events and much less fear of more likely events. For instance,

participants perceived their risk of being shot by a criminal (mean= 4.741) higher than being shot by an abusive partner (mean =1.162).

On the other hand, Ferraro (1995) believes that public estimates of personal crime risk in the local area correlate well with official crime statistics, but are less accurate in judging property crime risk, changes in crime, and crime prevalence outside of their immediate arena of routine activities. Ferraro (1995) and Warr (2000) agree that people typically estimate their risk of crime with limited information. They tend to rely on media and second hand sources as well as personal experience in developing their perceptions of crime. Contrary to Warr (2000), Ferraro concludes that most people are actually quite aware of their higher risk of property crime victimization and lower risk of violent crime such as murder.

With this debate in mind, one can see how the association between fear of crime and the official crime rates becomes complicated with perceptions of risk. If the public's perceptions of risk are consistent with official risk (crime rates), one may assume that fear of crime should be consistent with official risk. However, taking Warr's position (case where the population largely overestimates their perceptions of risk in relation to official crime), one would expect to see a large discrepancy between fear of crime and official reported crime.

2. 4 Correlates of Fear of Crime

A large portion of the research done in the area of fear of crime focuses on demographic characteristics such as gender, age, race, economic status, and marital status

(Ferraro 1995; Ferraro & La Grange 1988; Houtes & Kassab 1997; Parker & Ray 1990; Sacco 1994). Most of these characteristics (gender, age, race and economic status) have also been incorporated into a theoretical model (vulnerability model) which suggests that individuals who are more physically and socially vulnerable to crime will express higher levels of fear. This model will be expanded upon in the theory section.

Other non-demographic factors such as prior victimization experiences, perceptions of crime, and quality of neighbourhood life and their relation to fear of crime are also present in a number of studies (Kury & Ferdinand 1998; LaGrange, Ferraro & Supancic 1992; Smith & Hill 1991; Supancic 1992; Weinrath & Gartrell 1996). In terms of gender, studies universally find that females are more likely than males to report that they are fearful of crime (Ferraro 1995; Houts & Kassab, 1997; Parker & Ray 1990; Rucker 1990; Sacco 1994; Smith & Hill 1991; Weinrath 1999; Weinrath & Gartrell 1996).

Conversely, when looking at age, findings are more mixed. Madriz (1997), Parker & Ray (1990), Smith & Hill (1991), Weinrath (1999) and Weinrath & Gartrell (1996) find fear of crime is higher among the elderly, where as Sacco (1994), Ferraro (1995), Ferraro & La Grange (1988), and Rucker (1990) report that the elderly are no more fearful of crime than any other age group. Rountree & Land (1996), paradoxically, indicate that age is negatively related to fear, meaning that older people are less fearful of crime. Much of this difference has been attributed to measurement differences in surveys. The elderly are more likely to report being afraid to walk alone in their neighbourhood at night, but they do not vary from younger adults in their estimation of offence specific risk like burglary or assault (Ferraro & LaGrange 1988).

There has been less research on fear of crime and race. Findings again appear to be inconclusive. Parker & Ray (1990), Houts and Kassab (1997), and Rountree and Land (1996) report that fear of crime is higher among non-white than white respondents, while Ferraro (1995) finds that race has no effect on fear of crime rates. In Weinrath's (1999) study on fear of crime among Canadian Aboriginal Peoples using the National Aboriginal People's Survey, he comes to the conclusion that Aboriginal Peoples express similar levels of fear to non-Aboriginal people. In another study, Rountree and Land (1996) find that non-whites are less fearful of burglary.

In regards to education and economic status, studies generally indicate that individuals with higher levels of education and economic status have lower levels of fear (Ferraro 1995; Smith & Hill 1991; Weinrath & Gartrell 1996). Day (1994), Madriz (1997), Rountree & Land (1996) and Stanko (1995), observe that lower income individuals express more concern about crime in their neighbourhoods.

Few studies have been conducted regarding the influence of marital status on fear. Researchers indicate that marital status has no influence on fear of crime (Weinrath 1999; Weinrath & Gartrell 1996).

In addition to sociodemographic characteristics, factors such as prior victimization experiences, perceptions of crime seriousness, and quality of neighbourhood life are also linked to fear of crime. Individuals who have witnessed a crime or been a victim of crime themselves have in fact more pronounced levels of fear (Parker & Ray 1990; Sacco 1994; Weinrath & Gartrell 1996). However, these effects are small, and Weinrath and Gartrell (1996) find that victimization actually reduced fear levels in elderly women.

The influences of perceptions of crime seriousness on fear are fairly consistent (Rucker 1990; Sacco 1994 Smith & Hill 1991). A positive association exists between an individual's perception of crime and fear of crime. As Sacco mentions: "it is clear that those who perceive the crime situation to be worsening are more likely to be concerned about their personal safety than those who believe that crime levels have improved or remained the same." (1994:11).

Finally, in terms of quality of neighbourhood life, investigators have looked at the role of incivilities in a neighbourhood and their impact on fear of crime. Incivilities refer to things such as broken windows and run down buildings or any other deterioration of the neighbourhood that makes it appear as if not one takes care of it. Higher levels of incivilities within a neighbourhood are consistently associated with higher levels of fear of crime (Ferraro 1995; Ferraro & Supancic 1992; Gordon & Riger 1989; La Garange).

2.5 Gender & Fear of Crime

Beyond any doubt, the gender difference in fear of crime has been the most consistent finding in the literature on fear of crime (Madriz 1997; Stanko 1990). For example, Robert's (2001) study notes that women are much more likely than men to report being afraid (41% vs. 12%). Haynie's US (1998) study shows that women are more fearful than men, but the gap between the fear levels has narrowed over time. More specifically, men's fear levels have been on the rise since 1988, thus reducing the differences between men and women's fear. Scott's (2003) analysis of the Violence Against Women's Survey indicates that 61% of women report being somewhat or very

worried walking around in their neighbourhood at night. Two-fifths indicate that they are somewhat or very worried while home at night, three quarters worry on public transport, and four-fifths reported being somewhat or very worried using a car at night.

Recent studies on women's fear of crime go beyond the simple notion that women report higher levels of fear than men. For example, some researchers consider that women's fear levels vary (Day 1994; Gordon & Riger 1989; Madriz 1997; Scott 2003). Day's (1994) fear of sexual assault on campus study reveals that female attributes such as age, income and race all influence fear. More specifically, fear levels are higher among older, low income, Black, Hispanic, and widowed, separated or divorced women. Gordon and Riger's (1989) study demonstrates similar associations between fear and age, race and marital status. In addition, women's fear is related to neighbourhood disorder and dissatisfaction (Gordon & Riger, 1989). In Weinrath and Gartrell's (1996) Edmonton study, elderly females report higher levels of fear than younger females.

Women's previous victimization experiences also influence fear in varying ways. In some cases, prior victimization has no effect on women's fear of crime (Alvi, Schwartz, Dekeserdy & Maume 2001; Ferraro 1996), while in other studies previously victimized women are more fearful (Day 1994; Gordon & Riger 1989; Scott, 2003). Weinrath and Gartrell (1996) conclude that younger women appear to be more sensitive to victimization than elderly women. This may be because victimization may "desensitize" elderly women to fear.

A strong predictor of women's fear is negative experiences with male strangers (Scott 2003). Receiving obscene phone calls, or being followed and/or receiving unwanted attention from men that they do not know has strong and significant influence

on women's heightened fear levels. Scott (2003) reports that experiences with unknown men plays a stronger role than age, income, education in the production of fear in women's lives. She coined the concept 'Stranger Danger', and hypothesizes that this fear has its roots in the socialization of females.

To explain women's extreme fear of crime, some researchers hypothesize that women's fear of crime is really fear of sexual assault or rape (Ferraro 1996; Gordon & Riger 1989; Pain 2001). Ferraro's (1996) study in particular considered the thesis that sexual assault may operate as a "master offence" among women, heightening their fear of other victimizations. Conversely, Warr (1987) believes that there are perceptually contemporaneous offences, or crimes which people may associate with another victimization. For example, burglary of one's home while present could lead to assault or murder (Warr 1987). Ferraro (1995) views rape as a perceptually contemporaneous offence to most crime; but believes that its uniqueness as a form of victimization to women probably escalates the degree of fear of other crimes that might be committed against women. Sexual assault may 'shadow' other types of victimization among women. This may hold true especially for younger women, who experience the highest rate of rape (Ferraro 1995). Findings from Ferraro's study indicate that although robbery, assault, and murder are examples of non-sexual crime, women's fear of these crimes is strongly shaped by their fear of sexual crime. He concludes that our ability to predict fear of non-sexual crime is substantially improved if one also considers the fear of rape. Overall, fear of rape shadows other victimization fears. The magnitude of the fear is associated with the likelihood of confrontation and the seriousness of the offence. In

other words, the “shadowing” effect is stronger for fear of the personal or violent forms of victimization such as murder, assault, and burglary while at home (Ferraro 1995).

Concerns about women’s fear of crime is not foreign to feminist researchers, especially those who study men’s violence against women. Feminists such as Elizabeth Stanko (1990) explain that women’s fear of crime is, in many respects, simply women’s fear of men. Feminists argue that the reality of sexual and physical violence is a core component of being female and it is experienced through a wide range of everyday, mundane experiences (Stanko 1990). Other feminists, such as Gardner (1990), describe women’s lives as saturated by the intrusions of men. Gardner interviewed a number of women in a small town to gain an understanding of what they feel they should do in instances of street crime, and whether they have ever put these tactics into practice. She finds that women, “actively construct presentational strategies in public to protect themselves from men’s potential violence.” (1990:325) They feel obligated to behave in a crime-conscious manner which undermines women’s trust in innocent men with whom they come into contact with in public places (Gardner 1990). Stanko (1990) documents the commonness of men’s physical and sexual intimidation of women, even in cases where the men and women know each other. In some of Stanko’s (1995) later work she observes that women gather information about potential personal danger and violence throughout their lifetime. Women’s assessment of risk and fear are a result of their direct involvement with violence; the “but-nothing-happened” encounters; observation of other women’s degradation; the impact of the media and cultural images of women; and shared knowledge of friends, family, peers, acquaintances, and co-workers. She concludes that

women's lives rest upon a continuum of danger and that they must constantly negotiate their safety with men, thus taking many restrictive precautionary behaviors.

2.6 *Theoretical Models*

Despite a decade of research on fear of crime, the theoretical development within the literature is minimal. A majority of the research focuses on demographic characteristics and their relation to fear. Taylor and Hale (1986) criticize the literature for its lack of theoretical development, and identify the need for a more appropriate research process in order to capture the real world dynamic of fear of crime. They postulate that a progressively complex model can be achieved by proposing and testing very simple models, and then gradually adding other variables (Taylor & Hale 1986).

Theory development is essential as it provides explanations of relationships between phenomena. Although formal theory within the literature is sparse, there have been a number of partial theories presented. Partial theories attempt to explain an assumed or known relationship by specifying a testable causal model (Winston & Jackson 1995). Surprisingly, a large amount of theoretical development in the social sciences involves partial theories. Partial theories generally start as fascinations of relationships between two entities, and are often grounded in the findings of the research. Researchers attempt to understand the patterns that the relationship tends to represent. A number of possible explanations are presented which attempt to answer the "why" question about the connection between the two entities. Each of these explanations is a "theory" at a very implicit level. They fail to specify what assumptions are being made,

or articulate the underlying model of human behavior implicit in the explanation (Winston & Jackson 1995).

Despite these limitations, there are three partial theories presented in the literature which could be empirically tested by the type of data available. These include: the risk interpretation model, the indirect victimization model, and the vulnerability model. The multiple jeopardy hypothesis, which is really an extension of the vulnerability model, will also be examined.

2.6.1 Risk Interpretation Model

The risk interpretation model proposed by Kenneth Ferraro focuses on the role that perceived risk plays in fear of crime. Ferraro (1995) derived his model by integrating three sociological theories: symbolic interactionism, the incivility hypothesis and criminal opportunity theory. This theoretical model attempts to eliminate the gap between macro and micro levels of analysis. Macro-level ecological forces include information about previous crimes, and criminal opportunities gathered from the media, peers, and other sources. In contrast, the micro-level perspective examines factors that influence one's assessment of crime risk, such as personal knowledge of other's victimizations and the resources available to deal with that threat. Both macro-level ecological forces and micro-level personal forces are seen as shaping perceptions of neighbourhood incivility and cohesion. These perceptions of incivility and cohesion, in turn, affect perceived risk. Perceptions of neighbourhood characteristics and perceived risk may then produce a variety of behavioral adaptations, including defensive and

constrained actions. Although there has been a correlation reported between fear and behavior adaptations such as avoiding dark alleys at night, there has been no concrete evidence disclosed regarding the direction of this correlation.

The first part of Ferraro's model involves symbolic interactionism, originally derived from Herbert Blumer, which examines how people gather and interpret information around them. This relates well to perceived risk in the sense that people will interpret information from their surroundings regarding victimization potential and then choose an appropriate course of action. This perspective rests on three premises. First, it reflects the idea that human beings will act a certain way towards certain objects or situations based on the meanings that the objects or situations hold for them. For example, an individual may be cautious of passing a group of youth loitering around a bus stop because they interpret this group as a gang, when in actual fact it is a group of friends waiting to take the bus. The second premise considers the source of the meanings of the objects or situations. For instance, the interpretations of events are derived from the social interaction that one has with others in society. In other words, events do not hold predefined meanings. Only when they enter the social sphere do they gain meaning. Finally, meanings of "things" are developed out of an interpretive process which is used when a person encounters them. In other words, when individuals approach a situation such as whether or not they are going to be mugged in a dark alley, the interpretation is made based on whether society perceives that situation (dark alley) to be an indicator of potential crime. The symbolic interaction approach thus articulates how social actors judge situations and how different definitions of the situation emerge (Ferraro 1995). This perspective could be applied in determining how perceptions of risk change over

time and how it may differ depending on social context and history. Ferraro (1995) concludes that people redefine risk according (theoretically) in relation to local events or experiences.

The second perspective incorporated into the risk interpretation model is the incivility hypothesis. This perspective claims that individuals see certain features of a physical environment as “signs of crime” which often serve as cues to actors that risk might be higher in those areas. Incivilities or “signs of crime” within the fear literature often relate to issues such as groups of teens hanging out, abandoned/broken down buildings, use of drugs, and various forms of vandalism. Researchers such as Skogan and Maxfield (1981) and Ferraro (1995) have used these as indicators of levels of disorder in neighbourhoods. The incivility literature is congruent with the interactionist framework because people use information about the environment, including its degree of incivility, in estimating risk. The higher the perceived incivility, the greater the estimate of criminal victimization risk (Ferraro 1995).

The last theory which can be applied to the risk interpretation model is criminal opportunity theory. Although this theory was originally used to explain why people engage in criminal activity, it can also be adapted to understand perceived risk and fear of crime. Criminal opportunity theory states, offenders are thought to make ‘rational’ choices about various criminal opportunities in the environment. Potential offenders will be drawn to opportunities that are associated with high rewards and little risk. For example, a car thief would be more apt to steal a car from a deserted back lane during the night than at a public parkade during the day. The immediate risk of being apprehended is significantly lower when there is an absence of guardians and surveillance during the

night. Consistent with this assessment, individuals can use the information from criminal opportunity theory to assess where their own risk of criminal victimization will be highest. Potential offenders may take the advantage of information about living quarters, police protection and neighbourhood surveillance in judging the risk of apprehensions. So too can potential victims use this information to judge the risk of being victimized. For example, one is more likely to become a victim of assault while walking down an unlit back lane late at night, as opposed to walking down a busy street.

2.6.2 Indirect Victimization Model

Taylor and Hale's (1986) indirect victimization model attempts to clarify the process linking crime and fear. Although this model is based on two premises (vulnerability model and 'shock waves') they will be presented as two separate models to enable a more thorough examination and hypothesis testing. The premise based on 'shock waves' posits that people who hear about crime become indirect victims because their fear levels increase. Skogan and Maxfield (1981) find that most people do not learn about crime through recent and direct victimization experiences. People, they argue, must rely upon the media and personal conversations with others to learn about the crime problem in their area. This is due to the limited role that recent personal experience and direct observation play in obtaining information about crime.

The media has been accused of engendering fear because crime information is spread widely, and does not parallel the distribution of actual victimization. Its coverage is often frequent, consistent and centered around violence, in particular homicide. It is

postulated that from the sheer volume of violence featured on television and in newspapers individuals may gain an exaggerated view of the actual frequency of such crime, and thus experience higher levels of fear (Skogan & Maxfield 1981). The media implications upon fear are particularly important for cities like Winnipeg that experience higher levels of violent crime (Savoie 2001). We as residents are exposed to various flooded with violent crime stories from numerous television and print media on a daily basis. This being the case, one would expect that Winnipeg resident's fear levels would be consistent with increases in violent crime.

Another important source of crime information considered when examining indirect victimization is community networks. Unlike the media, which tends to focus on remote events, atypical persons and circumstances, the interpersonal networks one shares is likely to facilitate the spread of crime stories which concern local residents and events close to home. It is argued that fear may rise when individuals come into contact with victims or learn that people they know have been victimized (Skogan & Maxfield 1981).

Fear may become more intense when individuals learn of crimes which have affected their friends and neighbors, with whom they often share some bond or sense of common fate. Skogan and Maxfield (1981) state that not only do individuals feel sympathetic when consequences are tragic, but they are also reminded of their own vulnerability.

This model has been used to understand how individuals acquire information about crime problems and how this might lead to slippage between official crime rates and fear levels. According to this model, fear levels may increase when individuals hear about crime through intensified media reports or local networks. Instead of receiving

information about all crimes, the media focuses on violence, thus giving an unrepresentative picture of the true crime problem. Additionally, one neighbor's story about how they had their car broken into could lead one to think auto theft is widespread in the area.

To test the impact of media on fear, researchers typically survey respondents and ask whether they had watched any television shows or read any news stories involving police or crime. It is also common to see content analysis of television shows to determine if crime is overrepresented in media reports (Skogan & Maxfield 1981). The impact of neighbourhood networks and the dissemination of crime information has been explored by looking at whether respondents personally knew any victims of crimes such as burglary; robbery etc. had taken place in the last three years (Skogan & Maxfield 1981).

If the amount of violent crime has increased in the area, one would expect that that media reports and neighbourhood conversations would increase significantly as well. If this model is accurate, one would expect to find that increases in violent crime are consistent with increases in resident's fear of crime.

2.6.3 Vulnerability Model

The vulnerability model offers explanations for the higher levels of fear among groups that perceive themselves more likely to be victimized. Skogan and Maxfield (1981) pose two independent dimensions of personal vulnerability to crime, one physical, and the other social. According to Skogan and Maxfield (1981:69) physical vulnerability

means, "openness to attack, powerlessness to resist attack, and exposure to traumatic physical (and probably emotional) consequences if attacked." Individuals considered to be physically vulnerable are women and the elderly. Women and the elderly are generally more physically vulnerable because if they are in fact attacked, the possible harm they will endure will be greater than it would be for younger persons, or males. Skogan and Maxfield support this by finding that every analysis of crime related behavior indicates that women and the elderly are more likely to avoid exposure to risk and take numerous measures to reduce their chances of being victimized. In both cases, the inability to ward off attacks by young males and the potentially severe consequences of victimization often leads them to take extreme measures to avoid criminal confrontation (Skogan & Maxfield 1981).

Skogan and Maxfield's (1981) second dimension, the social dimension, states that people are socially vulnerable to crime when they are frequently exposed to the threat of victimization because of who they are, and when the social and economic consequences of victimization weigh more heavily upon them. Individuals who would find themselves socially vulnerable to crime would include visible minorities and individuals with lower socioeconomic status. Ethnicity and social class may affect feelings of vulnerability and fear of crime because individuals in these situations are more likely to have limited resources and live in high crime areas. Limited resources relates to things like victim services, financial equity, insurance, and social support networks. Overall, Skogan and Maxfield (1981) speculate that several kinds of vulnerabilities play an important role in shaping people's psychological reactions to crime, and that these vulnerabilities reflect their personal and social make-up.

Studies involving the relationship between fear and vulnerability most consistently focus on variables such as age, race, sex, and income as they are found to reflect the underlying dimensions of physical and social vulnerability to crime. Much of the literature that has been published on the fear of crime focuses on the influence of these variables on respondents fear (Ferraro 1995; Ferraro & La Grange 1988; Houtes & Kassab 1997; Parker & Ray 1990; Sacco 1994).

2.6.4 Multiple Jeopardy Hypothesis

An additional model found within the literature on fear of crime is that of multiple jeopardy. Weinrath and Gartrell (1996) use the term multiple jeopardy to explain interaction effects between demographic variables which indicate vulnerability. They assert that interactions between certain variables may produce greater levels of fear. Multiple jeopardy was originally derived from exchange theory (George Homans 1961) which investigates human behavior in terms of rewards and costs. Exchange theorists assume that the basic motivation in human behavior is seeking pleasure and avoiding pain. Thus people enter into exchange relationships with the intent to gain maximum rewards (such as money, approval and recognition) and to minimize costs (such as punishment, withdrawal of approval, loss of money). Individuals who enter into exchange relationships with limited resources such as lack of employment and low education are found to be at a disadvantage in these relationships. The multiple jeopardy hypothesis asserts that these disadvantages are multiplicative and that the individual's

position is reduced exponentially with each additional disadvantage (female, elderly, and minority).

The hypothesis of multiple jeopardy has been tested by Linda Gerber in her work on ethnic studies. Gerber's work tests the multiplicative effect of disadvantage on ethnic minorities. Specifically, she did a comparison between sexes and across the three native groups to determine if native women are doubly disadvantaged as females of ethnic minorities and whether or not Indian women face an added handicap due to the dependent status of Indians and their reserve-based communities. Results of Gerber's (1990) Canadian study show support for the multiple jeopardy hypothesis in that, "the most disadvantaged Canadian in terms of educational attainment, labor force participation and income, are members of visible minorities (Natives), females and specifically Indian" (22).

Within the broader context of vulnerability, the multiple jeopardy hypothesis shows how individuals who are disadvantaged either physically or socially can experience multiplicative heightened levels of fear if they possess more than one 'disadvantaged' trait. For instance, age may play a stronger role in the fear levels of females than males due to heightened vulnerability experienced by older females. Overall, this hypothesis provides an interpretation of the in-depth linkages between sociodemographic attributes and fear.

2.7 Hypotheses

This thesis concerns a longitudinal study in the city of Winnipeg using a repeated cross-sectional design intended to assess whether fear of crime has increased or decreased between the years of 1984 and 2004. Of particular interest is the relationship between official crime rates and fear and the differences in male and female fear.

The risk interpretation model posits that individuals gather and interpret information from their surroundings regarding the possibility of becoming victimized. Individuals, it is argued, are able to estimate their personal crime risk in their local area (Ferraro 1995). Therefore, when crime rates increase individuals will be able to estimate the greater likelihood that they will become a victim of crime. This will also be true for specific crimes. So, for example, if break-ins go up, so will fear of break-ins. In relation to this it is hypothesized that:

As rates of specific crimes such as assault, break-ins, or fraud increase, so will offence specific fears.

The indirect victimization model focuses specifically upon the effect of “shock waves” in a community. “Shock waves” come as a result of local contacts one has in the community, as well as the media’s tendency to focus on sensation (violent) crime. Individuals who hear about local crime occurrences through the media or their local networks become indirect victims because their fear levels increase. However, one must consider that violent crime in particular will be more frequently reported and discussed

within the local communities. A direct result of this is increasing fear levels within the local neighbourhoods. This being the case, it is hypothesized that:

Changes in fear will be most consistent with changes in violent crime.

The final focus of this paper will be directed towards changes in fear of crime for women compared to men. According to the vulnerability model being female (amongst other sociodemographic characteristics) is associated with fear because women are more physically vulnerable to crime than men. This is especially true in cases of physical or sexual assaults. Men are generally stronger and more able to ward off a physical attack. The argument that women's fear is largely related to women's fear of men's violence has also been noted consistently within the literature. This being the case, one would expect to find a linkage between women's fear and increase in the crime rate. In order to test the vulnerability model, it is hypothesized that:

Females will experience greater increases than males in fear as crime rates escalate, particularly in relation to violent crime.

A very important concept to consider within the vulnerability model is the multiple jeopardy hypothesis. This hypothesis postulates that individuals who possess more than one vulnerable attribute (female, minority, poor, uneducated) will experience a multiplicative amount of fear. This being the case, one would expect that vulnerability

indicators such as ethnicity, and income will have greater negative effects on females than males. To test for the multiple jeopardy hypothesis it will be hypothesized that:

Indicators of vulnerability will produce greater increases in female fear than males

CHAPTER 3 METHODS

3.1 Data Set

This study uses repeated cross-sectional secondary data taken from the 1984, 1994, and 2004 Winnipeg Area Studies (WAS). The Winnipeg Area Study is conducted annually by the Sociology Department at the University of Manitoba. The major focus of the Winnipeg Area Study is to collect information on various social issues concerning Winnipeg residents. The surveys each consist of approximately 750 randomly selected households who take part in a 25 minute telephone interview conducted by trained interviewers. The response rates for 1984, 1994, and 2004 are 77.3 percent, 75 percent and 70 percent respectively (Currie & Ursel 1984; Forde 1994; Lewis & Roberts 2004).

Secondary data is used for several reasons. Secondary data allows researchers access to data from large samples in a timely and efficient manner. For instance, the use of secondary data from the University of Manitoba allowed me to retrieve information from a sample of 2325 (3 years of survey data) respondents without interviewing them myself. On my own, it would have taken months; maybe even years to draft the questions, obtain ethics approval, interview the respondents, and create a database. The WAS is also attractive because it is a long-term trend study. The Winnipeg Area study has been collecting data from Winnipeg residents over the last 22 years (Lewis & Roberts 2004) and has included several measures of fear of crime. In this case data which included the same indicators for fear of crime existed in 1984, 1994, and 2004.

There are, however, some difficulties associated with the use of secondary data sets. Primarily, there is a lack of familiarity with the original study design, and possible potential data problems associated with it such sample representativeness. This can lead to misguided assumptions concerning the data quality. In addition, Weinrath states that, "available indicators may be too poorly measured to 'match' (be isomorphic with) nominal concepts"(1997:45). In other words, the original purpose of the study may conflict with its future uses.

There is another key disadvantage associated with the use of secondary data analysis. This involves the recurrent question of validity. In other words, when one researcher collects data for one particular purpose, there is no assurance that the data will be appropriate for another research interest. The problem of using consistent valid measures over the three points in time was dealt with by ensuring that the same measures were replicated throughout the data collection. In this case, the same questions for the five fear indicators were used during each of the three survey years (1984, 1994, 2004).

Validity of the measures used can also be increased by looking at previous studies conducted using the same offence specific fear indicators. Forde (1993) and Warr (1995) conducted longitudinal studies on fear of crime using the same offence specific fear indicators as those in WAS to measure fear of crime. Previous, peer reviewed studies, using the same offence specific indicators, provides evidence that they are appropriate measures of fear of crime (Forde 1993; Warr 1995). These give me some additional confidence that the measures are indeed valid.

Despite its practicality, repeated cross-sectional data also has its limitations. Although it is more widely available than panel and cohort longitudinal data, repeated

cross-sectional data limits the researcher's ability to describe changes in an entire population over time because the same respondents are not interviewed. This issue will be discussed further in the discussion chapter.

The Winnipeg Area Study samples were collected using a random sample of telephone numbers. The samples were generated using a program developed by N.M. Lalu at the University of Alberta. The population universe for the WAS in 1994 and 2004 was designated as all working telephone numbers in the Manitoba Telephone System's "Who Called Me" (1993) and "Fast Finder" (2004) Directories (Forde 1994; Lewis & Roberts 2004). The 1984 population universe was designated as dwelling units in the 1982 assessment file for the City of Winnipeg (Currie and Ursel 1984). The household was the primary sampling unit and gender, age and residency were involved in the selection of the respondent from the household for each of the sample years. Interviews for the 1994 and 2004 WAS were conducted by telephone while the 1984 interviews were conducted at the respondent's residence. Response rates were 77.3 percent in 1984, 74 percent in 1994, and 69.8 percent in 2004 (Currie & Ursel 1984; Forde 1994; Lewis and Roberts 2004).

3.2 Official Crime Statistics

All official crime rate data was collected from the Canadian Centre for Justice Statistics. Data is available between the years of 1977 and 2003. The Canadian Centre for Justice Statistics regularly publishes bulletins on recently collected crime through *Juristat*. These publications focus on certain crimes and certain aspects of Canada's

system of Justice. Canada's *Juristat* publications receive crime report information from local policing authorities such as the Winnipeg Police Service. Three general offence categories (violent, property and other) and six-offence specific categories were included in the analysis. The aggregate violent crime category or crimes against persons is an offence category, that according to Uniform Crime Reports (and Winnipeg Police reports) includes homicide, attempted homicide, sexual assault, other sexual offences, abduction, robbery and assault.

The aggregate property crime category or crimes against property includes the following offences: break and enter, theft, fraud and possession of stolen property. The general other crime category includes offences (other than traffic offences) which are not covered by violent and property crime categories.

The six offence specific crime categories vary in the manner in which crimes are recorded. For example, the total number of sexual assault and assault incidents reflect the total number of victims and includes both attempted and actual offences (Savoi 2001). The total number of break and enter, theft, fraud and robbery incidents includes both attempted and actual crime. There is no personal victim unit number applied to property crime offences. All offences are expressed as rates per 100,000 population.

Although law enforcement agencies are the most widely used source of information on crime, police data does have some important limitations. First, many agencies do not collect data in a standardized manner. Databases, automated or otherwise, are becoming more widely available, but are more commonly used for gathering intelligence than for recording crime. Secondly, police-reported data indicates only those crimes that are known to the police. Many factors can influence the police-

reported crime rate, including the willingness of the public to report crimes to the police; and changes in legislation, policies or enforcement practices. Despite these limitations, it is beneficial to take data from a consistent source. Using only Winnipeg Police data allows one to assume that mistakes during data collection will be consistent. When using a variety of data sources, data collection mistakes often multiply due to the variety of data collection techniques.

3.3 Dependent Variables

The Winnipeg Area Study includes one general measure of fear of crime and five offence specific fear indicators. The general measure of fear of crime (walk in neighbourhood at night), also known as the global measure of fear, was not used in this study due to the number of measurement issues associated with it. The dependent variable for the study was created by producing an index out of the five offence specific indicators which asked how worried people were about becoming victims of certain crime:

- 1) How much do you worry about the possibility that a thief will break into your home while you are away?
- 2) How much do you worry about the possibility that someone will use a weapon to take something from you by force?
- 3) How much do you worry about the possibility that someone will steal your coat, when you have left it somewhere unattended?
- 4) How much do you worry about the possibility that someone will cheat or con you out of a large amount of money?

- 5) How much do you worry about the possibility that someone will sexually assault you?

Responses were placed on a scale ranging from 0 to 10 (0 “never worry”, 10 “worry a great deal”). According to Warr (2001) the use of offence specific measures gives the respondent context within which the respondent can answer. This he claims is far more valid than the alternative global measure of fear which is vague and does not specifically ask about crime. Separate indicators were also created to assess the relationship between increases in specific crimes and escalation of offence specific fears.

Cronbach's alpha score for the fear of crime scale was .783. Cronbach's Alpha, despite its limitations, is a popular method used to measure reliability. However it must be mentioned that it is the last confirmatory step in constructing an index. The largest concern with Cronbach's Alpha is that it is known to be the least robust method for measuring reliability. More specifically, Cronbach's Alpha is extremely sensitive to small departures from the idealized assumptions. According to Werts and Linn (1970), Cronbach's Alpha makes the assumptions that first the covariances between all items included in the scale are equal, and second that the items are extremely independent. With these limitations in mind, one must interpret the Cronbach's Alpha with caution in that the statistics presented may be influenced by extreme values. One could have dealt with the limitations of Cronbach's Alpha by using one of the many factor analytic techniques which ensure that there are no large departures from unidimensionality. However, for purposes of this study Cronbach's Alpha has set a reasonable standard of reliability.

3.4 Independent Variables

To control for alternative explanations for changes in fear, six independent variables were included for bivariate and multi-variate analysis. These included gender, age, education, marital status, ethnicity, and city location. To test for changes over time, dummy variables were created for the years of 1984, 1994, and 2004. In the regression, the year of 1984 was used as the reference year. After completing a preliminary analysis it was decided that income would not be included in the regression equations due to the significant number of missing cases (21.5 percent). In order to assess socioeconomic status, education and city location were used as surrogate measures.

Gender was coded as a dichotomous variable (0=male, 1=female) along with city location (0=other city areas, 1=inner city), and marital status (1=married or common-law, 0=single, divorced, separated or widowed). The inner city variable was created by collapsing the original neighbourhood codes into two districts which were outlined by the Winnipeg City Police Boundaries.

Age was measured as an interval variable and coded as actual years. Education was coded into 14 ordinal categories (0=none, 1= elementary incomplete, 2=elementary complete, 3=junior high incomplete, 4 junior high complete, 5=high school incomplete, 6=high school complete, 7= non-university incomplete, 8= non-university complete, 9=some university, 10=diploma certificate, 11= Bachelor's degree, 12=Professional Degree, 13=Master's Degree, 14=Ph.D.).

Due to the extensive number of ethnicity categories (55) the variable was recoded into three groups. Categories such as "other multiple", "other single", and "other not

classifiable” were coded as system missing because they could not be identified within the appropriate ethnic category (N=45). The respondents which fell within the “Canadian” category were reclassified into more descriptive categories based on their mother’s and father’s ethnic identity. A large majority of the parent’s ethnic identities were European. According to Pendakur and Mata (1998) most individuals who report their ethnicity as Canadian are largely of British or French ancestry. Therefore, the decision to classify Canadians into European categories if their parents had European decent was justified. The coding of ethnicity still posed problems. The best case scenario would include 6 independent ethnic groups (1=European, 2=Asian, 3=African, 4=American, 5=Central/South Americans and Caribbean and 6=Aboriginal Peoples). The second best case scenario included 4 categories (1=Europeans/ Australians/ Americans, 2= Asian/African, 3=Central/ South American/ Caribbean, and 4=Aboriginal Peoples). The worst case scenario would combine the categories into a dichotomous variable (0=non-visible minorities, 1=visible minorities). Due to the significant Aboriginal population in the City of Winnipeg, it was decided that there should be a variable that included Aboriginals as a separate category. However, upon further analysis of the sample it was determined that the percentage of Aboriginal Peoples in each of the years (2.2 percent in 1984, 2.9 percent in 1994, and 4.6 percent in 2004) was not large enough for analysis. In addition, ethnicity needed to be expressed as a dichotomous variable in order to be entered into the regression equation. Many other studies have used ethnicity as a dichotomous variable in their studies on fear of crime (Houts & Kassab 1997; Parker & Ray 1990; Rountree & Land 1996). Thus, this study uses the last option.

The dummy variables created for the years of 1984 (0=other, 1=1984) 1994 (0=other, 1=1994) and 2004 (0=other, 1=2004) were also dichotomous. In the regression, 1984 was treated as the reference year. This allowed for a rough control of fear changes over the years within the regression equation while controlling for the possible influence of other variables. For example, an older population in 2004, or an increase in the proportion of females might increase the overall fear level, but this would not mean that Winnipeggers were more fearful per se.

It is important to note that because the 1994 and 2004 Winnipeg Area Studies were conducted in regions outside of Winnipeg, a number of cases had to be removed from the analysis. Originally, there were 2325 respondents. However, after removing respondents from outside the Winnipeg area, 2273 respondents remained.

All of the control variables that were included in this analysis were chosen based on previous research conducted in the area of fear of crime, as outlined in Chapter Two.

3.5 Analysis Plan

The use of official statistics and the Winnipeg Area Study offers some strengths and certain limitations. The official crime rates allow for a descriptive, comparative analysis with fear of crime based on only three points in time. This means that time series analysis or even a correlation procedure could not be used. However despite not having a more rigorous analysis, the results are expected to provide valid insight into the relationship between fear and police reported crime. The independent variables from the Winnipeg Area Study allows us to control for other explanations while comparing the

years. Multiple regression allows us to partial out the effects of the different years and the potential effects of demographic shifts in population over time. In other words, multiple regression allows one to analyze partial relationships between two variables, while controlling for other variables. Agresti and Finlay indicate that, “this is important because an effect of a predictor may change considerably when controls are introduced” (1997: 382). For this study in particular, multiple regression allows for the testing of the significance of the differences in respondent’s fear of crime over time while controlling for changes in the demographics of the population over the last twenty years. The use of multiple regression also allows for the testing of interaction effects for the male and female models to determine if there is a ‘multiple jeopardy’ effect of other significant vulnerability indicators.

Sampling reports for each year was reviewed to check the representativeness of the sample in comparison to the Winnipeg population (Currie & Ursel 1984; Forde 1994; Lewis & Roberts 2004). Direct comparisons with Census data are often difficult due to the 5 year data collection period of the Census. Differences seen between Winnipeg Area Study Sample and Census data could be a result of slight changes in the population between Census years. However, all three sample reports indicate fairly accurate representations of the Winnipeg population, with the exception of gender in 1994. In 1994 there was a slight overrepresentation of females, as respondents, within the sample. Data has been weighted to approximate female representation within the Winnipeg Population. (See Appendix L).

Data analysis took place in three phases. First, the analysis between the fear of crime and official crime rates took place strictly as a descriptive comparative analysis.

Differences between the fear and crime rates over time were calculated as percentage differences and then compared for similarities and differences in the trends over time. This analysis was guided by the propositions developed from the risk interpretation model, the theoretical dispute between Ferraro (1995) and Warr (2001), and the indirect victimization model.

A Bonferonni procedure was used to determine whether differences seen in fear of crime between the years were statistically significant. The Bonferonni procedure is a multiple comparison technique used to assess three or more groups for true differences. According to Agresti and Finlay, Bonferoni “extends to higher-way anova”, and “it uses a more stringent confidence level for each interval to ensure that the overall confidence level is acceptably high” (1997: 447).

The second and third phases of analysis were used to examine the propositions underlying the vulnerability model and the notion of multiple jeopardy. Three multivariate regression models were used to estimate the effects of demographic variables on fear of crime. Caution must be noted when using multiple regression for repeated cross-sectional data as this procedure does not control for changes in the population over time. Therefore, one must be cautious when making interpretations of fear trends over time because changes seen in fear levels may actually be due to changes in the sample of respondents. The first model included all the demographic predictors related to fear. The second and third models included one for females and one for males because the literature indicates that the variables influencing women’s fear will differ from men’s. In other words, it is hypothesized that certain predictors (age, ethnicity, education) have differential effects in predicting female’s fear of crime. For example, a

woman who is a visible minority may report higher fear levels than males who are visible minorities. Finally, to determine whether the differences seen between the female and male models were reliable, a t-test comparison procedure was used (Paternoster, Brame, Mazerolle, & Piquero 1998). This procedure will be discussed in detail in the analysis chapter.

Use of different of procedures will allow for a test of the hypotheses relating to the risk interpretation model, the vulnerability model, and indirect victimization model. Multiple regression in particular allows for the testing of the effects on fear while controlling for other variables. More importantly, it allows for the testing of differences in gender and fear.

CHAPTER 4 RESULTS

4.1 Sample Description

The Winnipeg Area Study samples consisted of 573 respondents in 1984, 1002 in 1994, and 750 in 2004 (Currie & Ursel 1984; Forde 1994; Lewis & Roberts 2004). After removing residents that lived outside of the Winnipeg area, 2273 respondents remained. The revised total consists of 573 respondents in 1984, 984 in 1994, and 716 in 2004. The numbers for 1984 did not change as the sampling parameters differed slightly.

The ratio of female to male respondents changed over twenty years. In 1984 there was a slightly larger percentage of females than males (55.8 percent and 44.2 percent respectively) (Table 1). The percentage of females was again larger than the numbers of males in 1994 (59.3 percent and 40.7 percent respectively). However, in 2004 the sample was evenly split between males and females (50 percent). This was due to a gender target quota which was instituted near the end of the data collection window to reduce gender bias in the sample (Lewis & Roberts 2004).

The average age of the samples has increased over time. The mean age of respondents increased by one year between 1984 and 1994. In 2004, the average age increased by 2 years from 1994.

Over half of the sample in all three years was either married or were in a common law relationship. Respondents from 1984 had the largest number of cohabitating respondents (59.8 percent), while 2004 had the lowest (51.8 percent). Correspondingly, 2004 had the largest percentage of single, divorced, separated or widowed respondents (48.2), while 1984 has the smallest percentage (40.2). Approximately 55.8 percent of the

**Table 1 - Sample Description
by Year**

	1984	1994	2004
Gender			
Male	44.2	40.7	50
Female	55.8	59.3	50
Age			
mean	41	42	44
18-32	39.5	34.6	31.7
33-47	27.7	34.6	29.1
48-62	17.1	14.2	23
63-77	14.6	12.9	11.2
78+	1.1	3.7	5
Marital Status			
Married	55.8	49.4	43.2
Common law	4	6.4	8.6
Single	23.4	26	28.5
Divorced	5.2	7.3	7.6
Seperated	4.7	4.2	4.3
Widowed	6.8	6.7	7.9
Education			
Less than High School	35.3	22.2	14.2
High School Diploma	24.7	24.8	21.2
Partial Completion of University of College	11.2	17	17.9
University Degree or College Diploma	24.6	30.5	38.9
Post Graduate Studies	4.2	5.4	7.8
Ethnicity			
European	91.4	89.9	86.6
Asian	4	4.6	6.2
African	0.4	0.7	0.7
United States	0.2	0	0.1
Central and South American and Carribean	1.8	0.9	1.8
Aboriginal	2.2	3.9	4.6
City Location			
inner city	39.2*	19.8	19.3
other winnipeg areas	60.8	80.2	80.7
Income			
Median	\$14,000 - \$15,999	\$20,000 - \$21,999	\$28,000 - \$29,999
Less than \$23,999	70.8	56.5	39.7
\$24,000 - \$49,999	27	34.2	41.7
\$50,000 +	2.2	9.3	18.5
N	573	984	716

* Missing cases in the 1984 survey suggest this breakdown is inaccurate

respondents from 1994 were either married or living common law, while 44.2 percent were either single, divorced, separated or widowed.

Generally, respondents reported higher levels of education over the twenty year period. The proportion of respondents with less than high school diplomas declined from 35.3 percent in 1984 to 22.2 percent in 1994 and 14 percent in 2004. A significant increase was seen in the number of respondents obtaining post-secondary education. For example, the percentage of respondents reporting post-secondary degrees or diplomas rose from 24.6 percent in 1984 to 30.5 percent in 1994 and finally to 39 percent in 2004. The percentage of respondents with graduate, and professional degrees grew from 4.2 percent in 1984 to 5.4 percent in 1994. By 2004, 7.8 percent of respondents reported having graduate or professional degrees.

The majority of respondents within the sample were of European origin. In 1984, Europeans made up a slightly larger portion of the sample than in 1994 and 2004. More specifically, Europeans made up 91.4 percent of the sample in 1984, 89.9 percent in 1994, and 86.6 percent in 2004. The percentage of Asian respondents within the samples increased over the 20 year period. The percentage of Asian respondents grew from 4 percent in 1984 to 4.6 percent in 1994 and finally to 6.2 percent in 2004. Respondents with African origins made up the smallest percentage of respondents in each of the specified years. There was a slight increase of African American respondents between 1984, 1994, and 2004 (0.4, 0.7, 0.8 respectively).

The percentage of respondents with Central and South American and Caribbean heritage remained consistent between 1984 and 2004 (1.8 percent). However, this percentage shrunk to 0.9 in 1994. The proportion of Aboriginal respondents more than

doubled over the 20 year time span. In 1984 2.2 percent of survey respondents were Aboriginal, while in 2004 it reached 4.6 percent.

The percentage of inner city respondents decreased dramatically over the twenty year period. In 1994, 39.2 percent of the respondents were from the inner city area of Winnipeg while 60.8 percent were from other areas of the city. In 2004 the percentage of inner city respondents dropped to 19.8 percent while the percentage of respondents from other areas of the city increased to 80.2 percent. These percentages remained relatively consistent in 2004 (19.3 percent and 80.7 percent). It must be noted, however, that there was a large number of cases (36 %) not reporting their residential location in 1984 which may have influence on the ratio of inner city to other city area respondents.

Initially, distributions were run for the income variable, however, because income was not measured by a consistent dollar and there was a large number of missing cases (13.4 percent in 1984, 26.4 in 1994, and 20.5 in 2004), the income variable was not included in the analysis. However, this study did use education and city location variables as surrogate measures for socioeconomic status.

Overall, there appears to be significant changes in the gender and education of respondents as well as the proportion of respondents with visible minority status (particularly Aboriginals). This may have a significant impact on fear levels. However, the use of these predictors in the regression analysis will allow us to control for changes over time. In terms of gender, the portion of females in 1994 was 18.6 percent higher than the portion of males. This difference may be related to changes in the sampling procedure over time and that women are more likely to answer the phone and complete

surveys. This large split may have a significant impact upon rising fear levels of 1994 relative to 1984 and 2004.

Between 1984 and 2004, the number of respondents with post-secondary education increased from 24.6 percent to 39 percent. Based on past research, the reported rise in respondents' education may also influence changes in respondents' fear levels over time, more specifically a decrease in fear. In previous fear of crime studies it was found that individuals with higher levels of education had lower levels of fear of crime. This being the case, one would expect that fear of crime levels will decrease over the twenty year time span.

The percentage of Aboriginal respondents increased significantly between the years of 1984 to 2004. In 1984 2.2 percent of the sample reported an Aboriginal origin, while in 2004 this percentage increased to 4.6. These percentages indicate that Aboriginal Peoples are under-represented in this survey. The true proportion of Aboriginal Peoples in Winnipeg is approximately 12 percent. It is inconclusive what effects this significant increase may have on fear of crime levels as there are inconsistencies in the fear of crime literature regarding race. While some studies report higher levels of fear among non-white respondents others report race having no effect on fear of crime rates.

4.2 Crime Statistic Trends

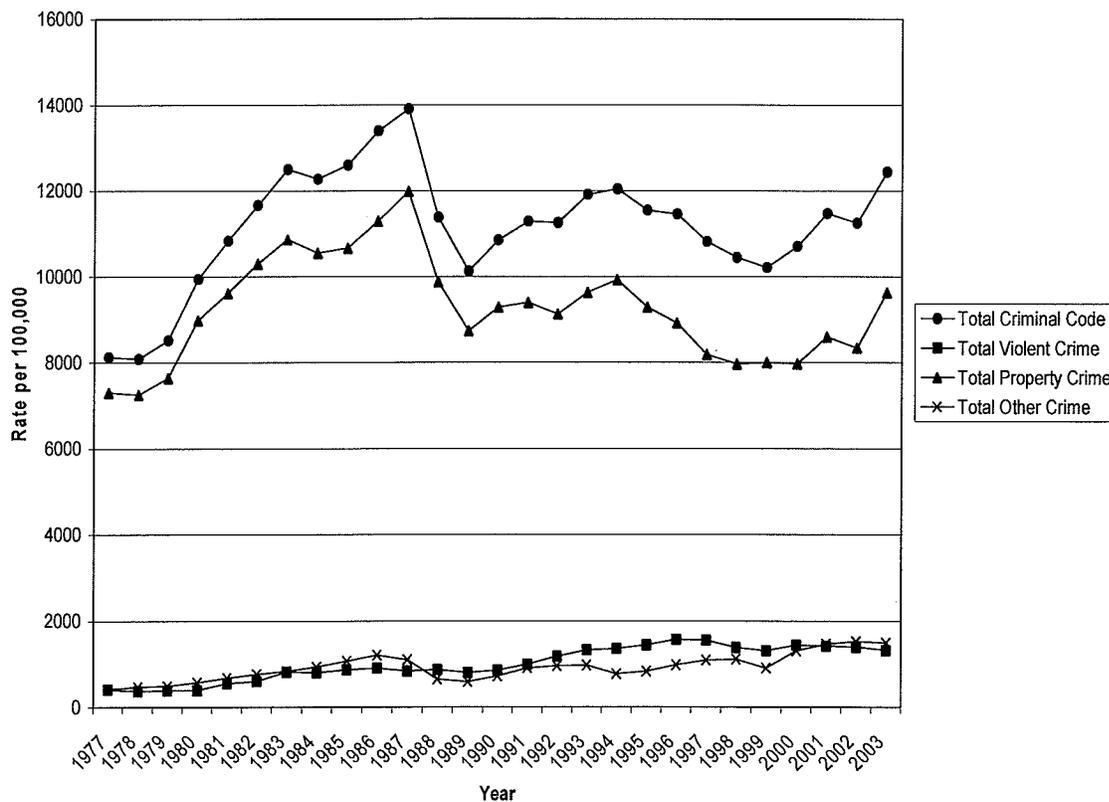
Crime statistics between the years of 1977 and 2003 were collected from the Winnipeg Police Service. In this section, the differences in the general offence categories (total criminal code rate, violent crime rate, property crime rate, and other criminal code offence rate) over the three points in time were examined. Then, the differences in the

actual offences that concern our focal fear of crime indicators (e.g., theft, sexual assault, robbery, fraud, break-in) will be presented.

The crime statistics will first be examined by looking at the percentage differences between the years being studied. These differences will be examined one year prior to the year in which the fear data was collected. This study will first assess the differences between 1983 and 1993, and then evaluate changes between 1993 and 2003.

Figure 1 shows crime trends between the year of 1977 and 2003.

Figure 1: Criminal Code Offence Trends 1977-2003



The total criminal code offence rate decreased from 12,492 per 100,000 in 1983 to 11,905 per 100,000 in 1993, a difference of 4.7 percent. Between the years of 1993 and 2003 the total criminal code offence rate increased by 4.4 percent (Figure 2).

Figure 2: Total Criminal Code Offence Rate

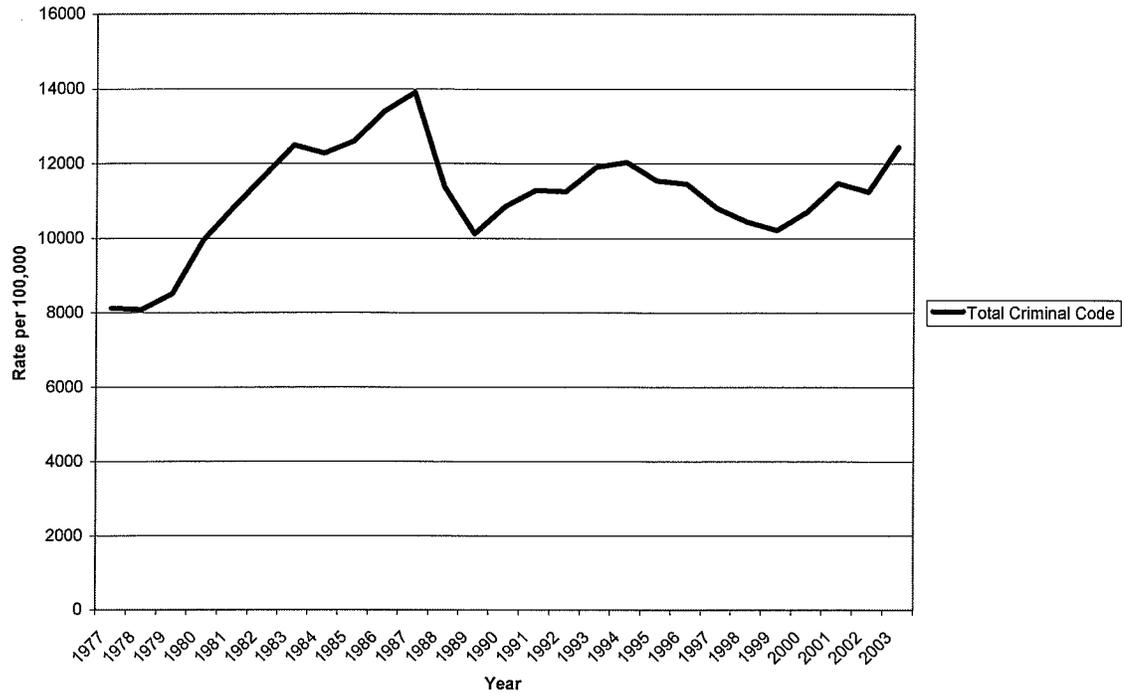


Figure 3: Total Violent Crime Offence Rate



The violent crime rate had the largest percentage increase (62.9 percent) between the years of 1983 and 1993. There was a small reduction of 0.1 percent in the violent crime rate (Figure 3) between the years of 1993 and 2003 (1,320 per 100,000 and 1,319 per 100,000 respectively). The property crime rate declined during both time spans. Between 1983 and 1993 the property crime rate decreased by 11.4 percent. A very small drop (0.01 percent) occurred from 1993 to 2003 (Figure 4). The other criminal code rate, on the other hand, grew between both time periods. There was an increase of 16.3 percent between 1983 and 1993, and another jump of 54.7 percent between 1993 and 2003 (Figure 5).

Figure 4: Total Property Crime Offence Rate

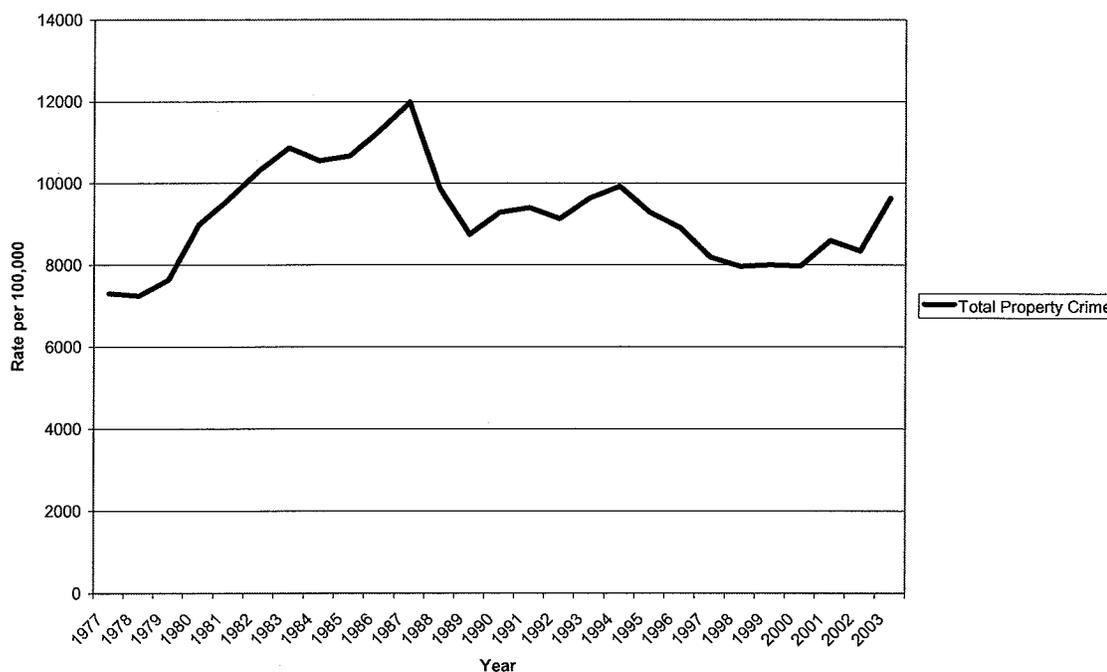
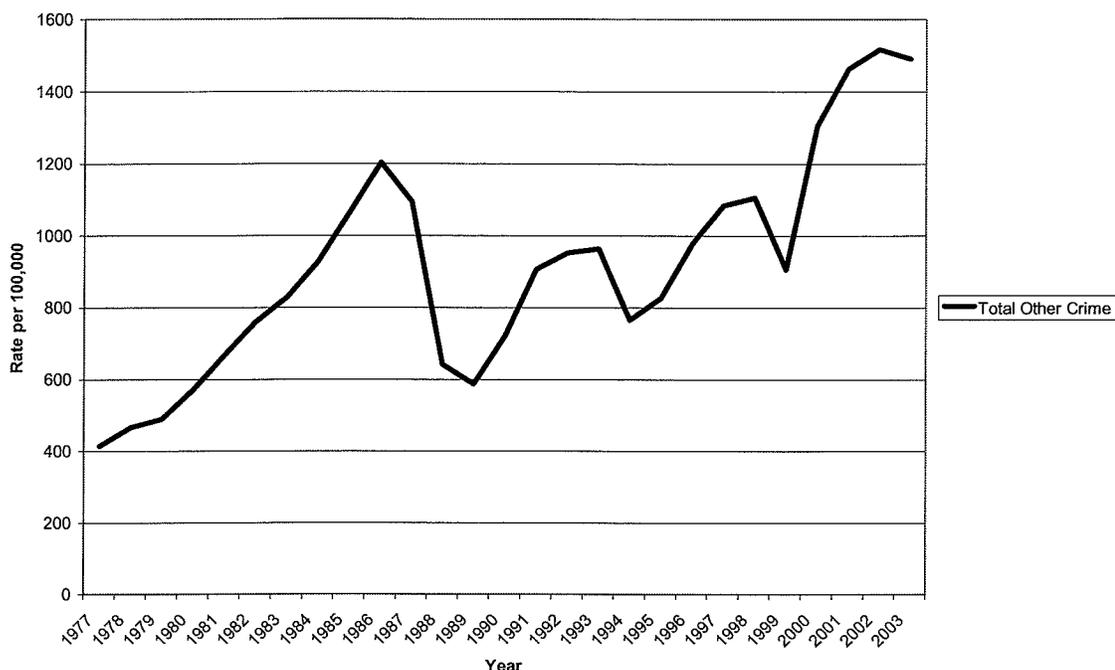


Figure 5: Total Other Crime Offence Rate



Increases in our violent crime fear indicator offences were evident over 20 years. Offence-specific graphs are included in Appendix 'A-F'. For example, the rate of robbery incidents rose by 43.8 percent between the years of 1983 to 1993 (162 per 100,000 to 233 per 100,000) (Appendix A). The rate of robbery incidents grew by 9 percent between 1993 and 2003. The sexual assault rate (Appendix B) increased from 72 per 100,000 in 1983 to 80 per 100,000 in 1993, a difference of 11.1 percent. A larger rise (41.3 percent) in the sexual assault rate was seen between the years of 1993 and 2003. The largest percentage increase for all six offences was seen in the assault rate between the years of 1983 and 1993, growing by 73.4 percent (550 per 100,000 to 954 per

100,000).¹ There was only a minimal rise (1.6 percent) in the assault rate between 1993 and 2003 (Appendix C)

Declines were seen during both ten year periods in the rate of break and enter offences. Break and enter offences (Appendix D) shrunk by 6.4 percent between 1983 and 1993. A larger reduction in the rate was seen between 1993 and 2003 (38.6 percent). The rate of thefts in the city of Winnipeg decreased by 17.4 percent between 1983 and 1993 (6078 per 100,000 to 5020 per 100,000). There was, however, a small percentage increase between 1993 and 2003 of 7.3 percent (Appendix E). Finally, the rate of fraud and other related offences decreased from 684 per 100,000 in 1983 to 551 per 100,000 in 1993 (17.8 percent). There was an even larger decrease (65.0 percent) in the rate of fraud and other related offences between 1993 and 2003 (Appendix F).

4.3 Fear of Crime Trends

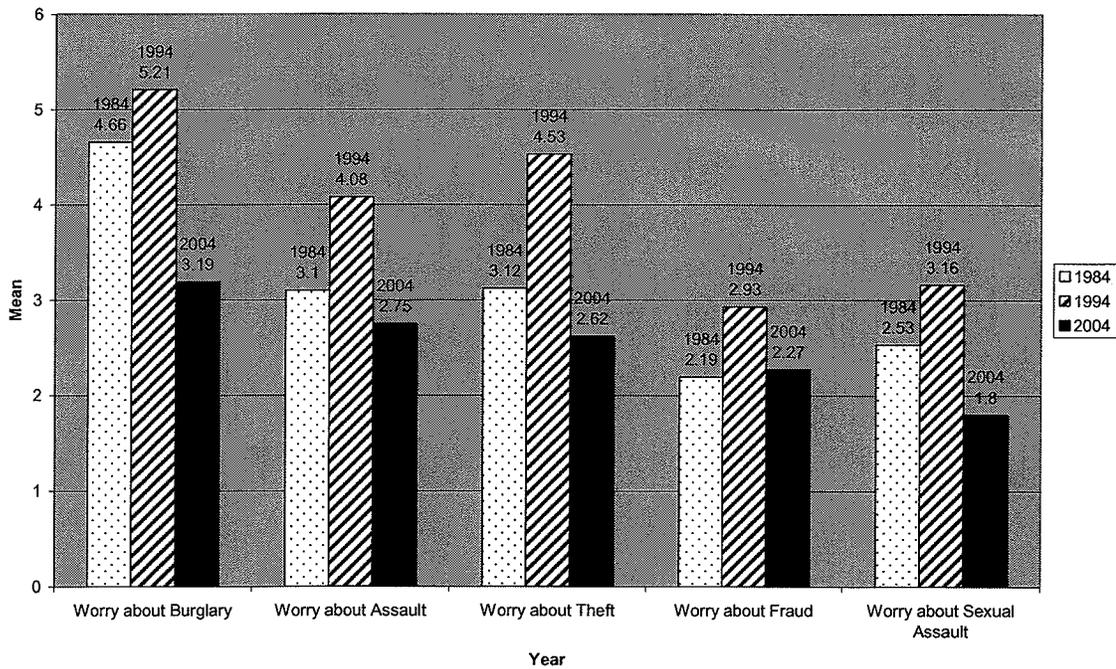
Generally, respondents reported low levels of fear of crime over the twenty year period. On a scale of 0 though 10 (0 indicating never worry and 10 indicating worry a great deal), mean levels of fear over the three points in time (1984, 1994, 2004) did not surpass 5.5, or about the mid-point, with all offence categories showing a positive skew (i.e., only a few people “worry a great deal”). Fear of someone breaking into the respondent’s home while they were away was consistently the crime people worried about the most over time. The least feared crime varied. For instance, in 1984 and 1994

¹ This increase may be due to changes in reporting practices following the 1983 Criminal Code amendments.

respondents were least worried about being cheated or conned out of a large amount of money. In 2004, respondents were least worried about being sexually assaulted.

Over the twenty year time span fear of crime showed consistent increases and decreases for all five of the offence specific categories. More specifically, fear of all crime increased from 1984 to 1994 and then declined from 1994 to 2004. *All offence specific fear levels, with the exception of worry about fraud, were lower in 2004 than 1984* (Figure 6).

Figure 6: Mean Level of Fear by Year



Differences in fear of crime over time were calculated as percentage differences between the mean levels over the three points in time. In order to assess whether the differences found were reliable, a Bonferroni procedure was used (Table 2.) The mean of the composite fear index grew from 3.12 in 1984 to 4.00 in 1994, a 28.2 percent increase ($p < .001$). This increase did not persist. The mean fear level then decreased by 38.1 percent ($p < .001$) in 2004 to 2.54. This was less than the mean fear level back in 1984. Overall, there was a 23.3 percent decrease ($p < .001$) in the fear index levels between 1984 and 2004.

Table 2 - Multiple Comparisons (Bonferroni Procedure)

	1984 - 1994	1994 - 2004	1984 - 2004
fear index	-0.8760*** (.1177)	1.4572*** (.11)	0.5812*** (.1254)
fear of burglary	-0.5450** (.1617)	2.0145*** (.1512)	1.4695*** (.1726)
fear of armed theft	-.9835*** (.1586)	1.33 (.1485)	0.3446*** (.1693)
fear of coat stolen	-1.42*** (.1663)	1.92*** (.1557)	0.5014* (.1773)
fear of being conned	-0.738*** (.1602)	0.6658*** (.1498)	-0.073 (.1709)
worry about sexual assault	-0.6278*** (.1619)	1.31*** (.1581)	0.6832*** (.1805)

Standard Error in Parenthesis

* $p < .05$. ** $p < .01$. *** $p < .001$.

There was a 11.7 percent increase in the mean level of worry about someone breaking into your home while away between 1984 and 1994 ($p < .001$). Between 1994 and 2004 the mean level of worry about someone breaking into your home while away declined by 38.7 percent ($p < .001$). Overall, there was a 31.5 percent decrease in the mean level of worry about someone breaking into your house while away between 1984 and 2004 (Appendix G).

The same trends appear when looking at responses to the question, “worry about someone taking something from you by force.” The mean level increased by 31.7 percent (3.14 to 4.17) from 1984 to 1994 ($p < .001$), only to decline by 32.4 percent between 1994 and 2004 ($p < .001$). Overall, the mean fear level for this indicator was not lower in 2004 than in 1984. ($p = .061$) (Appendix H).

Percentage differences in the mean fear levels over the twenty year time span were greatest for the question “worry about someone stealing your coat while left unattended” (Appendix I). The mean level rose by 45.4 percent (3.12 to 4.54) between 1984 and 1994 ($p < .001$). There was, however, then a large subsequent decline (42.2 percent, $p < .001$) in theft worry between 1994 and 2004. There was an overall decrease in the mean fear index level of 16.2 percent between 1984 and 2004 ($p = .016$)

The mean level of responses to the question, “worry about being sexually assaulted” grew from 2.5 to 3.2 (24.7 percent) between 1984 and 1994 ($p < .001$). However, between 1994 and 2004 the mean decreased from 3.2 to 1.9 (41.5 percent) ($p < .001$). There was a significant ($p < .001$) decline of 27 percent between 1984 and 2004 in the overall mean levels for the responses to this question (Appendix J)

There was a 33.8 percent ($p < .001$) increase in the mean levels of responses for the question, "how often do you worry about being cheated or conned out of a large amount of money?" (2.19 to 2.93) (Appendix K). The mean level of responses to this question, however, decline from 2.94 to 2.26, a 22.9 percent decline ($p < .001$), between 1994 and 2004. There were inconsistencies found when the mean levels of responses were compared between 1984 and 2004. Unlike the other 4 offence specific fear indicators, fraud rose marginally by 3.3 percent between 1984 and 2004. However, this increase was not found to be statistically significant ($p = 1.000$)

4.4 Fear and Crime Trend Comparison

In order to test the hypothesis surrounding the risk interpretation and indirect victimization models presented earlier, a comparison will be made between the overall fear of crime and police reported crime trends between the years of 1984 and 2004. According to the risk interpretation model, individuals are more accurate in estimating their risk of becoming a crime victim in their local area. Ferraro (1995) argues that individuals are aware of their higher risk of property crime victimization and lower risk of murder. However, he states that individuals are less accurate in judging property crime risk, changes in crime, and crime prevalence outside of their immediate area. Conversely, Warr (2001) argued that the public generally exaggerates the risk of serious victimizations and underestimates the frequency of more common crimes due to the media's tendency to sensationalize violent crime. From Ferraro's model (risk interpretation) it was hypothesized that there will be a positive association between

offence specific fears and increases in the crime rate. Descriptive results from the fear and crime statistic trend comparison indicate that fear of crime showed a consistent increase from 1984 to 1994 and consistent decrease from 1994 to 2004 for all five offence specific measures.

When comparing trends in individual's fear of specific offences to trends in the official crime statistics, *there are no observable associations which continue over the twenty year time span*. In other words, there are correlations between individual fear and official crime between the first 10 years (1984 to 1994), but the associations do not persist between the years of 1994 to 2004 and vice versa. As a result, these findings do not show support for the risk interpretation model. In regards to the offence specific violent crimes such as sexual assault and assault, there is an association between the increases in fear and the increases in the rates of sexual assault and assault between 1984 and 1994. However, when one compares the trends between 1994 and 2004, there is slippage between individual fear and official crime rates. The mean fear levels for sexual assault and assault were seen to *go down* from 1994 to 2004 while the official crime rates *went up* during these years. These results indicate a lack of support for the indirect victimization model.

In regards to property offence specific fears, there were no associations between fear of theft, break and enter and fraud and the official crime rates. Mean levels of fear of these offences were seen to increase from 1984 to 1994 while the official rates decreased over these years. Between 1994 and 2004, there were associations between the official rates for break and enter and fraud and fear, as they both decreased. Theft, however, increased from 1994 to 2004, which was inconsistent with the decrease in fear of theft.

From these results it can be concluded that there is very little association between offence specific fears and official crime rates over an extended period of time. Although initially there appears to be an association over a ten year period, this does not persist when extending the analysis over longer periods of time. There is little support for either the risk interpretation model or Warr's counter argument. Violent crime only appears to drive fear of crime between 1984 and 2004, but does not maintain this influence. Overall, the results are consistent with previous studies conducted by Taylor and Shumaker (1990) and Forde (1993), in which they find a lack of correspondence between fear of crime and official crime rates over time.

The indirect victimization model relates to the idea of "shock waves" and the influence they have on individual levels of fear. This model suggests that individuals become indirect victims because their fear levels increase when they hear about crime through local networks and more specifically the media. Violent crime in particular has a tendency to become sensationalized through the media, thus influencing individual fear. From this model it was hypothesized that increases in fear will be highest when violent crime increases. For the years of 1984 to 1994, results of the fear and crime statistic comparison initially support this hypothesis (at least for violent crime). However, between the years of 1994 and 2004, the association disappears. As mentioned before, the official crime rates for robbery, sexual assault and assault grew both between 1984 and 1994, and again from 1994 and 2004. Individual fear, was seen to rise in all categories between the years of 1984 and 1994, but decline between 1994 and 2004. In other words, there is an increase in both fear and violent crime from 1984 to 1994, but from 1994 to 2004, the violent crime rate rises while fear of crime decreases.

Overall, descriptive findings do not show support for the risk interpretation or indirect victimization models due to the lack of association between the official crime rates and reported fear levels. There were some consistencies when comparing the official crime rates and mean fear levels over a ten year time period, but these correlations did not continue over the twenty year time period. The data indicates that in general, the relationship between the official crime rate and individual fear fluctuates and is not associated either positively or negatively.

The “hazards explanation” offered by Taylor and Shumaker (1990), however, may help to explain this lack of relationship. They present the idea that the lack of relationship between local crimes and fear may be due to the process of adaptation. Individuals who are victims either directly or indirectly adapt to the threat of crime if presented in their local area. This explanation provides insight into understanding why reported mean fear levels of Winnipeg residents of all crimes decreased between 1994 and 2004 when in fact the official crime rate increased, in particular the violent crime rate. The explanation may be that Winnipeg residents became inoculated by the threat of violent crime over the years, therefore, showing no increases in fear. Reported mean fear levels of Winnipeg residents regressed back to a low, traditional level.

Before we consider the hazards explanation, other factors that should be taken into consideration, particularly, changes in the demographics of the respondents over the twenty year period. As stated earlier, gender showed a substantial difference between the portion of females and males (18.6 percent) in 1994 compared to other years. This again may be due to the fact that women are more likely to answer the phone and complete telephone surveys than men. This over-sampling of females, may at least partially

account for the increase of fear between 1984 and 1994. In addition, the amount of reported education increased significantly from 1984 to 2004. Previous studies indicate that higher levels of education are also associated with lower levels of fear. If this is the case, then the decrease in fear between 1994 and 2004 may be a result of the changes in education. In previous fear studies, income was considered, however, because of the large number of missing cases (N=484). The effects of these variables on fear of crime are examined in more detail in the multivariate analysis.

4.5 Bivariate Regressions

In order to assess which demographic variables had significant effects on predicting heightened levels of fear, six bivariate regressions and four multiple regression models are analyzed. The first two regression models include one with the inner city variable and one without. Due to the fair percentage (11.7) of missing cases, the regression was performed twice to check for significant differences between the two models. The second set of regression models include one for females and one for males to identify whether certain demographic factors are stronger predictors for male or female fear of crime.

The six bivariate regression models are performed with the fear of crime index as the dependent variable, and gender, marital status, city location, ethnicity, age, and education as independent variables. The conditional means indicated in each regression model (Table 3) can be contrasted with the regression coefficient of the dummy variable and allow us to compare groups. For example, the conditional mean in model one was 2.809 on the 10 point fear worry index, while the regression coefficient for female was

.972. This means that the male score is 2.809 on the fear worry index while the females score is 3.78 (2.809 + 0.972). The female regression coefficient indicated reliable effects ($p < .001$), meaning that females report higher fear than males.

We can then consider the relative size of the effect of worry. In other words, how much more fearful are females than males? To assess this, we simply subtract the male fear score from the female fear score, divide the difference by the male score and multiply it by 100, and get a percentage difference of 34.7 percent. Thus, females are 34.7 percent more fearful than males, a substantial difference.

Table 3 displays the conditional means and coefficients for the bivariate regression models. Of the six bivariate regressions run, four produced reliable effects ($p < .001$). The independent variables marital status and city location were not statistically significant.

In terms of ethnicity, non-visible minority respondents had a mean fear level of 3.229 while visible minority respondents reported a mean fear level of 3.97, a 22.9 percent difference ($p = .001$). In other words, visible minority respondents reported significantly higher levels of fear.

The regression coefficient for age indicates that for each year increase there is a decrease in fear by .023. Thus, a 20 year old respondent would score 3.81 on the fear of crime index while a 65 year old respondent would have a mean fear level of 2.77. Older residents are less fearful.

The regression coefficient for education indicates that for each unit change in a respondent's education, their fear level decreased by one on a 10 point fear scale. As education increases, fear decreases.

Table 3 - Bivariate Regression

	Conditional Mean (Intercept)	Unstandardized (Regression) Coefficients
Gender	2.809 ^{***}	.972 ^{***} (.096)
Visible Minority	3.229 ^{***}	0.741 ^{***} (.159)
Married	3.305 ^{***}	.018 (.098)
Inner City	3.287 ^{***}	.191 (.125)
Education	4.168 ^{***}	-.100 ^{***} (.018)
Age	4.272 ^{***}	-.023 ^{***} (.003)
1994	2.798 ^{***}	1.199 ^{***} (.096)
2004	3.673 ^{***}	-1.134 ^{***} (.102)

Standard errors denoted in parentheses.

*p <.05.

**p<.01.

***p<.001.

4.6 Multiple Regressions

The multiple regression models regressed the fear of crime index dependent variable on gender, marital status, city location, ethnicity, age, education, year of 1994 and 2004 as independent variables (1984 was the reference year). Correlation matrixes were examined to rule out any possible collinearity between the independent variables

before the regression models were conducted. Results of the correlation matrixes showed that there were problematic associations between the dummy variables representing each the years of 1984, 1994 and 2004. However, these variables were included to indicate high correlations (See Appendix M, N, and O).

Due to the large number of missing cases within the city location variable, particularly for 1984, two models were first estimated to determine whether living in the inner city had a significant effect on fear of crime. The models were run initially with cases excluded using the listwise procedure, however, due to the substantial number of missing inner city cases, the pairwise deletion method was selected. The first model, which included the inner city location variable, explained 17.9 percent of the variation in fear of crime (adjusted $R^2 = .179$). Results indicated that six out of eight independent variables had significant effects in predicting fear of crime. The independent variables of city location ($b=.187$) and marital status ($b=.170$) were not significant predictors of fear of crime. Given the insignificance of the city location variable and its 267 missing cases, a second regression model was run excluding this variable. There was a slight reduction in the adjusted R^2 (.178) once the city location variable was removed. The seven independent variables explained 17.8 percent of the variation in fear of crime. This is a modest R^2 value, in the sense that the model does not really explain much of the variance in fear of crime (83 percent unexplained). However, it was known from the descriptive statistics that explaining variance would be difficult, because people were generally not fearful (i.e. little variance to explain) (Table 4). Additionally, because of our inability to include various factors such as respondent's mood and recent media attention on crime in the model our inability to predict a high percentage of the variance in the dependent

Table 4 - Multiple Regression

	Initial Including Innercity	Initial Excluding Inner City	
	B	B	beta
Conditional Mean	4.359	4.311	
Gender	1.060*** (.099)	1.047*** (.093)	.288***
Visible Minority	0.62*** (.161)	0.673*** (.149)	.091***
Married	.170 (.102)	.171 (.093)	.037
Inner City	.178 (0.123)		
Education	-.121*** (.020)	-.112*** (.018)	-.129***
Age	-.026*** (.003)	-.025*** (.003)	-.183***
1994	.975*** (.139)	.946*** (.115)	.204***
2004	-.307* (.975)	-.363** (.125)	-.074***
R ²	.179	.178	

Standard errors denoted in parentheses.

* p < .05.

** p < .01.

*** p < .001.

variable is diminished. The use of public opinion data within statistical models generally limits the predictability of R² to less than 25 percent of the variance in the dependent variable.

From the regression model it was evident that despite controlling for changes in demographic variables (gender, age, and education) the differences between the years of

1984 and 1994 and 1984 and 2004 were still substantial and statistically significant. The regression coefficient for the year of 1994 ($B=.946$) indicates that 1984 respondents had a mean fear level of 4.311 while respondents from 1994 had a mean fear level of 5.25, an increase of 22 percent. The standardized coefficient (beta) indicated that the year 1994 explained approximately 4 percent of the variation in fear of crime. The regression coefficient for year 2004 indicates that respondents from 2004 are 8.6 percent less fearful than respondents from 1984. The year 2004 explained less than 1 percent of the variation in fear of crime ($\beta=-.074$). Results indicate there are differences between the mean fear levels over time, and that these changes are not due to demographic changes in the Winnipeg population.

Net of the effect of other variables, gender explains the most variance in fear of crime ($b=1.047$). The regression coefficient of $B=1.047$ indicates that females are 24.3 percent more fearful than males which is consistent with previous literature (Ferraro 1995; Houts & Kassab, 1997; Parker and Ray 1990; Rucker 1990; Sacco 1994; Smith & Hill 1991; Weinrath 1999; Weinrath & Gartrell 1996). When comparing the regression coefficient of gender between the bivariate and multivariate models we see that there is very little change ($b=1.07$ vs. $b=1.047$).

Visible minorities reported marginally higher levels of fear (4.98) than their Caucasian counterparts (4.31), net of the effects of other predictors. The findings indicate that visible minorities are 15.6 percent more fearful of crime than Caucasians, a small difference. These findings are in the predicted direction but weaker than some of the results from previous studies (Houts and Kassab 1997; Parker & Ray 1990; Rowntree & Land 1996). The net effects of ethnicity on fear decreased negligibly from the

bivariate regression model (0.741 to 0.673). In terms of the corresponding beta weights, ethnicity explained 9 percent of the variance in fear of crime, a very small amount.

The effects of a respondent's education on fear increased slightly when entered into the multiple regression equation (-.100 to -.112). The regressing of the fear variable on education indicates that for each level of education a respondent perceived their fear level decreased by .112. For example, a respondent with a grade 6 education would have a fear level of 3.64 while a respondent with a grade 12 education would have a fear level of 2.97. The standardized coefficient of -.129 indicates that education explains 1.7 percent of the variance in fear of crime.

The same effect can be illustrated for age. The regression coefficient of .025 indicates that for each year of age there is a .025 decrease in fear of crime. In other words a respondent who was 25 years old would report a fear level of 3.67, while a respondent 70 years old would report a fear level of 2.56. There is almost no change in the effect of age on fear from the bivariate to multiple regression models (.022 to .025). A standardized coefficient of -.183 indicated that 3.3 percent of the variation in fear of crime is due to a respondent's age. This is consistent with previous research conducted by Ferraro and LaGrange (1988) which shows that although the elderly are more likely to report being afraid to walk alone in their neighbourhood at night, they do not vary from younger adults in their estimation of offence specific risk like burglary or assault.

Marital status explained the least amount of variance in fear of crime ($B=.037$). The unstandardized coefficient indicates that while single respondents have a mean fear level of 4.31, their married counterparts have a mean fear level of 4.48, a difference of 3.9 percent. These findings are consistent with previous fear studies which also show

that marital status has little influence on fear of crime (Weinrath 1999; Weinrath & Gartrell 1996).

Another way to look at the regression model is by calculating the fear level of a hypothetical respondent (a typical profile of a person with a moderate fear of crime). For instance, a respondent who was female, visible minority, married, had six years of education, 25 years of age and from survey year of 1994 would have a moderate fear level of 5.91. This is calculated by using the regression equation: $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$, or $Y = 4.311 + 1.047 + 0.673 + 0.171 + 6(-.112) + 25(-.0251) + 0.946$.

Overall, gender explains the largest amount of variance ($\beta = .228$) in fear of crime, while marital status is weakest ($\beta = .037$). It should be noted that there was little change in the size of the effects from the bivariate regression models to the multiple regression model for all predictors, despite all other independent variables controlled for.

4.7 Fear of Crime and Gender

Table 5 includes the final series of regression models, one for all females in the study sample and one for males. Two models were run because gender explained the most amount of variance in the first model and the literature says there are significant differences between women and men. This indicates that there is a possibility that other variables in the regression model may act differently if men and women are studied separately. Additionally, we were interested in testing for interaction effects. In other words, are certain predictors such as age, education and marital status more potent for

Table 5 - Multiple Regression For Males and Females

	Females		Males		T-test Comparison
	B	beta	B	beta	(t-value)
Conditional Mean	5.706		3.979		
Visible Minority	.938*** (.239)	.111***	.463* (.183)	.076*	1.77
Married	.121 (.138)	.025	.0875 (.129)	.022	0.77
Education	-.125*** (.028)	-.131***	-.101*** (.023)	-.137***	-18.32
Age	-.030** (.004)	-.218**	-.017*** (.004)	-.138***	-2.05
1994	1.067*** (.171)	.216***	.806*** (.152)	.199***	1.14
2004	-.542** (.188)	-.103**	-.194 (.163)	-.045	-1.39
R ²	0.166		0.094		

Standard errors denoted in parentheses.

* p <.05.

**p<.01.

***p<.001.

predicting female fear as opposed to males'? This curiosity comes from the vulnerability model which states that individuals who are in more vulnerable physical and social positions will have higher levels of fear. The differences between male and female fear of crime and the "vulnerability" effect of other demographics (age, education, ethnicity) has been the most consistent finding in the fear of crime literature (Madriz 1997; Stanko 1990; Weinrath & Gartrell 1996). However, it was suggested previously that vulnerability factors might produce more severe effects of women, a form of multiple jeopardy (Weinrath & Gartrell 1996). More specifically, because fear appears to be a more pressing issue for non-white, less educated, older females there should be significant differences seen between the two individual models.

Six independent variables were used in each of the models. These included marital status, ethnicity, age, education and respondents year variables for 1994 and 2004. Initially, these models included the city location variable but it showed weak and unstable effects for both the male and female models, thus final equations were run without it. Consistent with the prediction of the vulnerability model, the regression model for females (adjusted $R^2 = .166$) explained the most variance in the dependent variable fear of crime. This model did not work as well for predicting males fear of crime (adjusted $R^2 = .094$). The conditional mean level of fear for females was 5.706 while male's mean level of fear was 3.979.

Results indicate that five out of six independent variables had a stable effect on predicting female fear of crime, holding all other variables constant (Table 5). These included year 1994 ($B=1.067$), ethnicity ($B=0.938$), year 2004 ($B=-.542$), education ($B=-$

.125), and age ($B = -.030$). Marital status was not a stable predictor of female fear of crime ($B = .121$).

Age had the greatest influence in predicting female fear of crime ($b = .218$). The regression coefficient ($B = -.030$) indicated that for each year of a woman's age there is a decrease of .03 in her fear level. The year 1994 was the second greatest predictor for females fear of crime ($\beta = .216$). In other words, the year 1994 explained 4.7 percent of the variation in fear of crime. The coefficient of 1.067 indicates that women respondents in 1984 had a fear level of 5.706 while women respondents in 1994 had a fear level of 6.77, a mean difference of 18.6 percent.

Education explained the third largest amount of variation in fear of crime for females. $B = -.125$ indicated that a female's education explained 7 percent of the variation in fear of crime. A woman's ethnicity explained 1.2 percent of the variation in fear ($\beta = .111$). Results of the regression coefficient ($B = 0.983$) indicated that while Caucasian women have a mean fear level of 5.706, women who are visible minorities have a mean fear level of 6.64, a difference of 16.37 percent.

The year of 2004 was found to explain the smallest amount of variance in women's fear of crime ($\beta = -.103$). When comparing women in 1984 and 2004, it was found that there was a 10 percent decrease in women's fear of crime over 20 years ($B = -.542$). Women's mean fear levels decreased from 5.706 in 1984 to 5.16 in 2004.

The second regression model, which looks exclusively at males (adjusted $R^2 = .094$), explained only 9.4 percent of the variation in the dependent variable of male fear of crime. Out of the six variables that were entered into the model, only four were statistically significant predictors for male fear of crime. The variable for the year 1994

(beta=.199) explains the most variation in male fear of crime. The regression coefficient (B=.806) indicates that males in 1984 had a mean fear level of 3.979 while males in 1994 had a mean fear level of 4.78, an increase of 20.1 percent, about the same as women.

Age explains the second most amount of variance in male fear of crime (B=-.138). In other words, a male's age explained 1.9 percent of the variation in fear of crime. Age, however, had significantly greater effects on female fear of crime. Education explains the third largest amount of variation in fear of crime for men. The regression coefficient of -.101 indicates that for each grade increase there is a decrease of .101 in a male's fear level. Ethnicity explains the least amount of variance in fear (B=.076). A regression coefficient of -.463 indicates that a white male would have a mean fear level of 3.979 while male of visible minority would report a mean fear level of 4.42, a difference of 11.6 percent.

The female model was more efficient than the male model for predicting fear of crime. This was shown not only through the adjusted R^2 value (.161 versus .094), but also by looking at the reliability of predictors in each model. The model for females had five significant predictors, while the model for males only contains four. More specifically, each individual predictor was stronger for females than males. For example, the standardized coefficient for ethnicity was .111 for females and .183 for males. The same holds true for the variable of 1994 (.216 vs .152), age (-.218 vs -.004), and education (-.131 vs -.023). The variable for 2004 was reliable for the female model but not for the male fear model. Specifically, in terms of the comparison between the years it is apparent that both males and females were much more fearful in 1994 than 1984.

However, when looking at the surprising decline from 1984 to 2004 it is shown that females declined significantly while males did not.

Interaction effects between the male and female fear models were assessed through t-tests² (Table 5). A t-test for interaction effects is relatively straightforward and involves a comparison of the regression coefficients in each model, expressed as a ratio against the standard errors (Paternoster, Brame, Mazerolle and Piquero 1998). For example, when testing whether ethnicity has a different effect for women than men, the first step is to subtract the male's unstandardized coefficient from the females (.983 - .463=0.52). Next, add the female's ethnicity regression coefficient standard of error squared plus the males ethnicity regression standard of error squared , and find the square root $\{\sqrt{(.239)^2 + (.183)^2} = 0.30081\}$. Divide this total by difference between the males and female's unstandardized coefficients. The t-statistic of 1.72 is not statistically significant at $p < .05$. Non-white females are more fearful than non-white males.

With the exception of the 1994 and 2004 variables ($t=1.14$ and $t=-1.39$), interaction effects were observed for all predictors. The difference in fear in 1994 was in the predicted direction but not reliable, indicating that there was a substantial rise (but statistically significant) for both males and females from 1984 to 1994. While both fear levels declined from 1994 to 2004, the difference seen between men and women's fear level was not significant. On the other hand, non-white females, less educated females, younger females and females responding in the year 2004 were all more fearful than their male counterparts (ethnicity $t=1.72$, education $t=-18.32$, age $t=-2.05$). These results only partially support the vulnerability model and the notion of "multiple jeopardy". The

² $t = (b_1 - b_2) / \sqrt{(se_1)^2 + (se_2)^2}$

deprivation associated with minority status and lower income has a much more negative effect on females than males.

CHAPTER 5 DISCUSSION AND CONCLUSION

This study addressed several research questions regarding fear of crime trends in Winnipeg over the last two decades and the connection between official crime rate changes and individual perception of victimization risk. In this chapter, key findings from the previous chapter will be summarized and discussed. The results of this study will be used to evaluate the hypotheses derived from four previous theoretical models including risk interpretation model, the indirect victimization model, hazards explanation, and the vulnerability model. The chapter will conclude with a discussion of measurement issues, policy implications and future research initiatives derived from the findings of the study.

5.1 Summary of Findings

The first section of the analysis looked specifically at the relationship between the changes in the official crime rates and people's fear of crime. Despite fluctuations in the official crime rate, fear for all offence specific categories increased from 1984 to 1994 and then decreased from 1994 to 2004. All of the offence specific fear levels, with the exception of worry about fraud, were lower in 2004 than in 1984. Although there were connections between the violent crime rate and fear of crime between 1984 and 1994 (both were seen to increase) the direction of relationship changed between 1994 and 2004. As a result, there are no continuous trends which continued over the 20 years.

One plausible explanation for this may be what is known as a statistical regression to the mean. This effect is a natural phenomena of extreme scores reverting back to mean

averages. In other words, left to themselves, things tend to return to normal, whatever that is. In this case, normal levels of fear. This phenomenon was first described by Sir Francis Galton in the 1880's, who noted that very tall parents tended to have children who were shorter than they, albeit still above average height, and conversely, that the children of very short parents were still shorter than average, but taller than their parents. He called this effect "*filial regression toward mediocrity*" and attributed it to some biological force (Agresti and Finlay 1997).

Winnipeg residents fear levels in 1994 may have peaked due to practices of media reporting, or simply in response to the large increase in reported violent crime. For example assault did increase by 73.4 percent. Although it cannot be known how long the increased fear levels lasted past 1994 due to data limitations, we do know that residents' fear levels eventually returned to low levels. Data shows that fear eventually returns to lower levels and does not permanently reside in the community. From the results it can be argued that Winnipeg residents are generally not that fearful, are aware that their risk of victimization is low, and that this trend is more evident over the past 10 years.

The second section of the analysis involves multivariate procedures directed towards testing for differences in fear net of the effects of changing demographics over time. Results indicate that despite changes in the demographic composition of the population, fear levels in 1994 are still higher than in 1984. In addition to this, fear levels in 2004 not only declined from 1994, but are slightly lower than 1984. The multiple regression model indicates gender explains the largest amount of variance in fear of crime which is consistent with previous findings in the literature. Women, visible minorities, the less educated, and married individuals expressed higher levels of fear,

while the elderly expressed lower levels of fear. It is awkward to compare the age results with some of the literature due to the way in which fear was measured in this study.

Other studies which involve age and use the general or global measure of fear (which asks respondents how afraid they are of walking alone at night), report findings different from our offence specific measures. Measurement issues surrounding age will be explored further when discussing the vulnerability model.

The final section of the analysis dealt with the differences between male and female fear of crime. This section more directly tested the hypotheses associated with the vulnerability model and “multiple jeopardy” hypothesis. The vulnerability model states that individuals who are more physically vulnerable to crime such as women and the elderly will express heightened levels of fear. Because women report greater fear than males, analyses were used to discover contributing factors (age, ethnicity, socioeconomic status) and test for gender-fear interactions. As expected, the female model was more effective for predicting fear of crime. Overall, females were definitely more fearful than males, and other indicators of vulnerability increased fear for them more than for males, supporting a multiple jeopardy hypothesis.

5.2.1 Theoretical Explanations

5.2.2 Risk Interpretation Model

The first hypothesis, “there is a positive association between offence specific fears and increases in the crime rate” was derived from the Risk Interpretation Model. Briefly,

this model states that individuals are accurate at estimating their risk of becoming a victim of crime. Ferraro (1995) added to this model by arguing that individuals are aware of their higher risk of property and lower risk of murder. He stated that individuals are less accurate in judging property crime risk, changes in crime, and crime prevalence in their immediate area. In contrast, Warr (2000) argued that the public exaggerates the risk of serious victimization and underestimates the frequency of more common crimes. Results indicate that there is little support for the first hypothesis. There was no observable association between offence specific fears and changes in the crime rate over time. There is little support for either Ferraro's or Warr's argument. Ferraro believed that an individual accurately estimates the risk of becoming a victim of personal crime in their local area, and that they are quite aware of their higher risk of property crime victimization and lower risk of violent crime. The data, however, did not support this argument over time. Specifically, while property crime was lower and violent crime was higher from 1984 to 1994, overall fear levels were increasing. In addition, while violent crimes grew from 1994 to 2004, fear levels declined. In other words, the only consistency found was between the violent crime rate and fear of crime between 1984 and 1994.

Warr, on the other hand, argued that the public exaggerates the frequency of violent crime and underestimates the probability of property crime. Contrary to Warr, increases in Winnipeg resident's fear levels were consistent with increases in violent crime from 1984 to 1994. However, while violent crime was continuing to increase from 1994 to 2004, resident's fear actually decreased. Overall there was a lack of support for both Ferraro and Warr's theories on the relationship between fear and official crime.

Understanding of the lack of support for the Risk Interpretation Model is aided by examining the literature on the association between personal victimization and fear. Despite the inconsistencies in this literature, some of the same results are found when looking at the relationship between individual rates of victimization and fear of crime. Many researchers have not found that the experience of crime heightens victims fear; in fact victimization sometimes lowers fear (Agnew 1985; Box, Hale & Andrews 1988; Sharp & Dodder 1985; Van Der Wurff & Stringer 1989; Weinrath & Gartrell 1996). Agnew (1985) argues that individuals develop neutralization techniques in order to maintain and limit the damage to their psychological well-being. Using a social learning perspective, Skogan (1987) introduces a learning effect hypothesis, indicating that individuals reduce their fear of crime by engaging in more rational and prudent precautionary behaviour as a result of becoming victimized. These explanations partially support this study's findings. If individuals who have been directly victimized do not experience higher levels of fear, then why would individuals experience elevated levels of fear when crime rates change?

Another explanation may be that people are confused when they talk about the problem of fear of crime. People may actually not be fearful at all, but rather, they may be angry about the possibility of becoming a victim of crime. A study conducted by Ditton (1999) confirmed that being angry about the threat of criminal victimization is more frequently reported than being afraid of it. He argues that this is a common-sense explanation and that is why many researchers have chosen to avoid it. An obvious explanation or not, it may be one of the missing links in the association (or lack thereof) between fear of crime and official crime statistics.

A final explanation that can be used to understand the lack of association between the official crime statistics and fear of crime is the Hazards Explanation. This theory focuses on the process of adaptation. It is argued that people get used to crime just like they get used to living on flood plains, drought-stricken areas, or on earthquake faults (Taylor and Shumaker 1990). Individuals may resort to a perceptual adaptation for some crimes due to the inoculating effects of prior exposure. Particularly in the case of Winnipeg, which is known as a violent city and the “Murder Capital of Canada”, residents may have just become accustomed to the increase of crime in the city. Despite the increase in violent crime from 1994 to 2004, Winnipeg residents’ fear has declined to its former low level.

It is important to note that the hazards explanation for the decline in fear levels is different from the previous explanation of statistical regression to the mean. The hazards explanation is a social learning perspective whereas statistical regression to the mean is a naturally occurring phenomenon.

Whatever the explanation is for the lack of correlation between fear and official crime, future research needs to be directed towards tracing fear levels on a yearly basis.

5.2.2 Indirect Victimization Model

The second research hypothesis, “Increases in fear will be highest when violent crime increases” was derived from the indirect victimization model. The indirect victimization model argues that individual’s fear is influenced by “shock waves”. Individuals become indirect victims of fear because their fear increases when they hear

about crime through local contacts or more specifically the media. In particular, this model focuses on violent crime because the media has a tendency to sensationalize and over-report violent crime occurrences such as murder and assaults. Results of this study do not support the above hypothesis over the twenty year time span. Initially there is a reported association between the increased fear levels from 1984 to 1994 and the rise in violent crime. However, this association then dissipates from 1994 to 2004. Despite continued increases in violent crimes such as robbery, assault and sexual assault, the mean levels of fear decreases during this time period.

This lack of support for the indirect victimization model may be due to the increased media reporting of violent crimes around 1994, or the result of a moral panic which Warr (2000) suggests is the most common form of fear. Although there were increases in violent crime over both periods of time (1984 to 1994 and 1994 to 2004) media reporting practices may have changed or issues such as gangs may have been more prevalent in 1994. In the 1990s there was a substantial emergence of street gangs in the City of Winnipeg and more generally, the province. According to Aboriginal and Northern Affairs, there were 37 street gangs which actively recruited during the 1990s. Street gangs were a definite threat to public safety in the 1990's and they have been blamed for the steadily increasing crime rate throughout the 1990's (Province of Manitoba, Aboriginal and Northern Affairs website 2000). Only by using methods such as content analysis of media reports would one be able to explain the lack of consistency and support for the indirect victimization model.

5.2.3 *Vulnerability Model*

The third hypothesis, “females will experience greater increases than males in fear as crime rates escalate” was derived from the vulnerability model. According to Skogan (1981) the vulnerability model has two dimensions: physical and social. Individuals who feel vulnerable are more likely to experience increased levels of fear. If individuals are physically vulnerable they are often open to attack, powerless to resist attack and exposed to traumatic physical and emotional consequences if attacked. Women and the elderly are more likely to fall into the physically vulnerable category. Analyses supported the third hypothesis. Females reported not only higher mean levels of fear but also more significant increases in fear levels in 1994 than males. Females also experienced a greater decrease in fear from 1994 to 2004 than males. This indicates that females are driving the overall fear of crime rate.

When looking at age on the other hand, there is no support for the vulnerability model. As previously mentioned, there was a reverse effect for age, the older an individual was the less fear they expressed. This is counterintuitive: the elderly should be more fearful due to the reduction in physical prowess, if this theory was correct.

This conundrum may be a result of measurement issues. In other words, the elderly may not be afraid of specific crimes such as assault and robbery, but rather things such as youth congregating in large groups around their home. A study conducted by Christian (2001) on elderly women and fear of crime helps put measurement limitations into perspective. Her study indicated that fear for elderly women was typically associated with domestic violence, harassment on the street and bus stops, being followed

and confrontations by panhandlers. Overall, elderly women reported a broader concern of personal safety rather than concern of specific crimes (Christian 2001). Christian's findings may help explain why the elderly did not express higher levels of fear. Validity issues may arise when attempting to assess fear of the elderly by offence specific fear measures.

The second dimension, social vulnerability, states that, "people are socially vulnerable to crime when they are frequently exposed to the threat of victimization because of who they are, and when the social and economic consequences of victimization weigh more heavily upon them" (Skogan 1981). Individuals who are generally included in the socially vulnerable category are visible minorities, and individuals with lower levels of socioeconomic status. Results of the multivariate analysis did show support for the vulnerability model. Both visible minorities and individuals with lower levels of education (surrogate measure for socioeconomic status) expressed higher levels of fear than their counterparts. Although education is a good measure of socioeconomic status, the resident's city location was not. As indicated previously residents of the inner city area did not show significantly higher levels of fear. The lack of relationship at the area level may be due to two reasons. First, there was a large number of missing cases that could not be identifiable to a certain area of the city. Without the city location, it is impossible to determine whether the cases missing were from the inner city area. This was more of a problem in 1984. Secondly, it is also plausible that the poorest areas of the city were not captured. In other words, there may be areas outside the city core that experience financial hardship that were not included in

the inner city area. In order to deal with this inherent possibility a linkage would have to be formed between incomes and certain areas within the city from census data.

There was also support for the fourth hypothesis, "Indicators of vulnerability will produce greater increases in female fear than males". Upon testing for gender-fear interactions indicators such as ethnicity, and education were found to have stronger effects of female fear as opposed to male. This lends credence to the "multiple jeopardy" hypothesis which postulates a multiplicative effect in fear when individuals have more than one vulnerable characteristic.

Overall, out of the three models explored, the results of the study only showed some support for the vulnerability model and "multiple jeopardy" hypothesis. The lack of support for the other models may be due to issues of measurement or just to a lack of relationship between the official rates of crime and fear. Future research using annual surveys could provide more thorough analyses.

5.3 Measurement Issues

A repeated cross-sectional analysis was undertaken for this longitudinal study. Repeated cross-sectional data contains independent random samples drawn from each point in time. Unfortunately, repeated cross-sectional data is not the best kind of longitudinal data since the same respondents (panel data) or respondents with the same characteristics (cohort data) were not interviewed over time. Menard indicates that, "the principal limitations to the repeated cross-sectional design are its inappropriateness for studying developmental patterns within cohorts and its inability to resolve issues of

causal order” (1991:21). In other words, changes seen in fear levels over the three points in time may not be necessarily due to changes in fear but rather differences of respondents.

Another issue which is directly related to interpreting changes over time is the use of regression with repeated cross-sectional data. Although regression is not the most robust technique and is sensitive to extremities, it has been used by a number of researchers in their longitudinal studies (Glenn 1998; Uggem & McMorris 2000; Tanner, Davies and O’Grady 1999; Brown, Dorius & Krannich 2005). In particular, the study by Brown et al. (2005) uses dummy variables to represent years for independent variables within their regression model, similar to this study. Menard (1991) provides a review of types of analysis appropriate for longitudinal data. He states that Anova and regression with dummy variables, and mixed continuous categorical independent variables are appropriate, but not the best, methods for longitudinal data.

It is important to note, however, that regression analysis is the least robust technique for this type of data and by using structural equation models such as LISREL or Path Analysis changes in the population over time would have been taken into account. This being said, results in changes of fear over time discussed in this thesis must be interpreted with caution. Changes seen may be due to other factors such as differences in the sample studied at each point in time. In order to deal with some of the insecurities surrounding different samples the data was weighted according to gender to ensure the samples were representative of the Winnipeg population.

In addition to limitations of describing change, the use of repeated cross-sectional data does not allow one to determine how long specific fear trends lasted. For example,

although there was a peak in the fear of crime levels shown in 1994, it cannot be determined what year fear peaked, or when it started to decline. In a perfect research world, panel or cohort longitudinal data would be easily accessible. These types of data would allow one to assess changes over shorter periods of time and allow for the comparison of year to year crime rate changes. Although these data are more appropriate, they also come with limitations such as participant attrition and expense. Even when trend data is available, there is a lack of correlation between official crime rates and fear of crime even when annual surveys have been used. For instance, Forde (1993) was able to use annual surveys from 1981 to 1992 in his study on fear of crime in Winnipeg. He found that there was a lack of correspondence between citizen's perceptions of crime and the official crime statistics. Ideally, one would desire data that was recorded on a yearly basis. However, if fear of crime in Winnipeg is a phenomenon which hovers around equilibrium, yearly data would not provide any superior advantages that outweigh the costs of panel or cohort studies.

Another measurement issue that must be taken into consideration is the use of offence specific measures. Based on previous research conducted by Warr (2001), one would have expected to find a correlation between the trends of individual offences such as burglary and fear of someone breaking into their house. Although Warr (2001) argues that the offence specific data provides context for the respondent, the use of these measures did not appear to make a difference in the correlations found between official crime and fear of crime. Although there are a number of other issues to consider, such as fear versus anger, it must be questioned whether people really focus in on specific offences when thinking about their reactions to crime.

5.4 Policy Implications

Crime prevention initiatives such as street patrol and neighbourhood watch tends to measure success by the reduction in fear of crime levels. With the possibility that fear of crime levels regress to the mean and remain at equilibrium, is it appropriate to use fear as a measure to assess crime prevention policy effectiveness? More specifically, how does one claim a crime prevention initiative was successful if fear always regresses back to an acceptable mean level despite intervention? It may be more appropriate to measure policy and program effectiveness by looking at public satisfaction of these independent programs. If one chooses to use fear as a measure of policy effectiveness it should be used in addition to other evaluation methods and measures.

This study showed that generally, Winnipeg residents are not that fearful and that crime may not be as an important issue as many think. With this in mind one must question the allocation of monies to crime prevention initiatives directed at fear reduction. Rather monies should be redirected into other areas of the criminal justice system or even other areas with limited funding such as health care.

More generally, the public needs to be educated on the likelihood of becoming a victim of crime. They need to become aware of the actual amount of crime occurring not only in their local neighbourhoods but the city of Winnipeg in general. Being aware of crime risk helps individuals to protect themselves and their properties from potential victimization. When crime is reported to the public in a concise and accurate fashion, they become aware of their actual risk of becoming victims to certain crimes such as theft (possible) or murder (unlikely). Educating the public about the actual amount of crime in

their neighbourhoods reduces the likelihood of moral panic which is often a result of the media over-reporting violent crimes. In order to reduce the inaccuracy of media reporting the media and criminal justice experts need to become unified and work together on getting accurate information out to the public.

Another finding from the study with potential policy implications is the increased fear levels for vulnerable groups such as minorities, lower socioeconomic groups, and especially women. If researchers such as Scott (2003), Ferraro (1995) and Stanko (1990) are accurate in arguing that women's fear is a result of fear of men's violence, more resources need to be directed towards making women feel safe. Additional resources need to be offered for women who have become victims and are potential victims of men's violence. Anonymous shelters and educational resources need to be present and promoted within the communities. Society has to become even less tolerant to violence, especially violence against women. This includes stalking, which Scott (2003) has found to play a very strong role in the production of fear in women's lives.

Although reported differences between minorities and Caucasians, and lower and higher socioeconomic groups were minimal, there still needs to be a greater proportion of resources directed towards vulnerable individuals. They need to be offered greater protection and victim service programs to ensure that they have resources available if they do become victimized. This could include anything from safe shelters, and medical attention to legal support counsel.

Overall, fear of crime does not appear to be a large issue for residents in the city of Winnipeg. In general, fear levels are reasonably low, even lower than they were 20 years ago despite rising crime rates. However, it is important to note that despite low fear

levels, vulnerable groups such as women and minorities are experiencing higher fear levels than males and Caucasians. Policies should reflect these findings by directing public monies towards crime reduction, victim resources and educational awareness.

5.5 Global Contributions to the Literature

Due to the lack of longitudinal research in the area of fear of crime, this study makes a contribution to the literature in this area, particularly with respect to Canada. There are two longitudinal Canadian studies (Roberts 2001 and Forde 1993) on fear of crime and its relation to other criminal justice issues and perceived crime. The results of this study are similar to Roberts (2001), however, his sample was drawn from the general Canadian population, and used descriptive statistics only. His conclusions, much like the ones presented here, are that overall fear of crime is relatively consistent and the percentage of Canadians expressing fear in recent years (2000) is slightly lower than it has been for many years. He does not, however, compare fear of crime levels to official crime rates.

Forde (1993), on the other hand, looks specifically at respondents in the City of Winnipeg. His study was published almost one decade ago and used only a 4 point ordinal measure of fear and bivariate correlations. He also found no changes in fear over an 11 year period of time. Forde (1993) also concludes that there is an overall lack of correspondence between citizen perceptions of crime and official crime rates, in addition to a weak relationship between perceived crime and fear.

The relative consistency of fear of Winnipeg residents, despite a fluctuation in 1994, is similar to that of the situation of Canada and more internationally the United States. Warr's (1995) study of US Gallop poll results show relatively consistent levels of fear over a 28 year period despite a moderate increase. Warr (1995) even used the same offence specific measures as used in this study.

The study findings are generally consistent with the larger literature on the demographics associated with fear. The study, however, goes beyond the first order relationships between fear and demographics and tests for multiplicative effects of vulnerable demographic characteristics using the multiple jeopardy hypothesis. Weinrath and Gartrell (1996) were the first to introduce the multiple jeopardy hypothesis into the fear literature however they only tested for age and gender interactions. This study also included ethnicity and education (an indicator for socioeconomic status).

Finally, this study incorporated some theories or partial theories surrounding fear of crime. Much of the literature presented previously failed to test the partial theories and models. Despite the lack of support for the risk interpretation model and indirect victimization model, results showed promise for the vulnerability model. This model in particular is important for social policy makers attempting to implement services for individuals in need. It may, however, be the case that the data was limited in its ability to test the risk interpretation model and indirect victimization model. Further research should incorporate the testing of these models as they are important to the understanding of fear of crime.

Overall, the Winnipeg situation is similar to Canada's and the United States in that fear is relatively consistent and typically regresses to an average mean level. This

study goes beyond what has been completed in the past and terms of testing of various models and looking at interaction effects. It does however, like all studies, have its limitations so future research, particularly in the global sense is encouraged.

5.6 Future Research

Considering the problematic nature of longitudinal research and lack of findings supporting the linkage between fear of crime and official crime, a number of recommendations can be made regarding the direction of future research. Of particular importance is the way in which fear of crime has been measured. In order to gain an accurate picture of fear of crime, researchers need to approach the phenomena with a triangulation of methods. Fear of crime surveys can be enriched by alternative approaches and the subtle insights they offer. These could include ethnographic studies, life histories, and individual and group interviews. When dealing with a complex issue such as fear of crime a conglomeration of methods can offer information that fixed survey questions often overlook. Take for example the issue of whether individuals experience anger as a response to crime as opposed to fear. Only through narrative explanation could one determine that anger was a potential response to crime.

Future research on fear of crime should be focused towards developing additional survey measures. Although the offence specific measures used in this study have been used widely within the literature (Warr 1995, 2001; Forde 1993), the usefulness of some measures must be questioned. For instance, the measure used for theft, "How much do you worry about the possibility that someone will steal your coat, when you have left it

unattended?" does not appear to portray a realistic estimate of fear of theft. It may be more reasonable to refer to a purse or wallet. Additionally, based on the amount of auto theft in the City of Winnipeg, fear of crime surveys should be revised to include a fear of auto theft measure.

The use of repeated cross-sectional data presented a number of limitations within this study. By studying different individuals at three periods in time our ability to describe changes in fear levels over time was limited. These limitations could be significantly reduced by using panel study data which incorporates more sophisticated models. Panel studies, although costly and time consuming, are a very rich source of data which have a number of beneficial research implications. Studying social phenomena over time is very important for policy makers as it allows them to assess program and policy effectiveness. Whether it is panel data on fear of crime or any other social phenomena more financial resources need to be directed towards longitudinal panel research.

The conundrum between fear and anger must be examined in depth in future studies. Ditton, Banister Gilchrist, and Farrall (1999) touch on an important, yet neglected, dimension of fear. Future studies need to closely examine the emotional experiences one feels when thinking about the possibility of being victimized. In addition to a triangulation of methods, researchers need to design measurements for capturing the majority of emotions associated with the possibility of being a victim of crime. Once explorative studies have taken place, and general emotions towards crime have been uncovered, survey questions can be designed to capture larger samples from

the population. These two methods combined should expose other emotions besides fear as a reaction to crime.

Due to the lack of correlation between fear of crime and official crime rates one final future research recommendation is offered. Researchers need to examine the process of how people accommodate to increases in crime. The decline of fear after the peak in 1994 suggests that individuals became accustomed to crime in their local neighbourhoods as well as the surrounding city areas. One must question what behaviors or mental cognitions individuals engage in, in order to relieve reactive emotions surrounding the possibility of becoming victimized. Individual interviews would provide a better analysis of individual's coping behaviors and patterns. Although there has been a number of studies on the precautionary behaviors individuals engage in to avoid becoming a victim of crime, there has been very little research conducted surrounding the strategies people use to reduce their fear of crime. This is a potentially rich area of research for policy makers who are responsible for devising programs aimed at reducing fear of crime.

Finally, future research needs to be conducted in the area surrounding media influence on crime, particularly in relation to this longitudinal study. In order to gain a comprehensive understanding of the fear trends that have taken place in Winnipeg over the last 20 years one would have to conduct a contextual analysis of the media reporting in Winnipeg prior to and during the years in question (1984, 1994 and 2004). Without data from methods such as content analysis it is difficult for one to understand why fear levels peaked in 1994. Content analysis of media reports, although highly time consuming, provide researchers with a moderately accurate way of going back in history

to gain an understanding of the events that take place during the time. Gaining an understanding of the social situations that were take place prior to fear surveys data would allow for the researcher to potentially explain changes in residents fear.

5.7 Conclusion

This longitudinal fear of crime study of Winnipeg residents addressed the question of whether people are becoming more or less fearful over time. It has also made a contribution to the debate surrounding the relationship between fear of crime and official crime. It identified implications for crime prevention initiatives which measure program success upon reduction of fear of crime. Due to the specific direction of the vulnerable individual's fear, it is recommended that monies be directed towards public education on crime and victim support strategies, particularly for women and minorities. Future research that uses a triangulation of methods is recommended. A combination of content analysis and other qualitative methods that allow for in depth exploration of the fear of crime phenomena should serve to guide future theory and policy development. Most importantly, it will help researchers to understand the exhaustive range of emotions associated with the threat of becoming a victim of crime.

Bibliography

- Alvi, S. , Schwartz, M. D. , Dekeseredy, Maume, O. (2001) . Women's fear of crime in public housing. *Violence Against Women*, June, 1-20.
- Agresti, A. & Finlay, B. (1997) *Statistical methods for the social sciences (3rd ed)*. New Jersey: Prentice Hall Inc.
- Babbie, E. (2001) . *The Practice of Social Research (7th ed.)*. California: Wadsworth Publishing Company.
- Brown, R. , Dorius, S. , & Krannich, R. (2005) . The boom-bust recovery cycle: Dynamics of change in community satisfaction and social integration in Delta, Utah. *Rural Sociology*, 70 (1) , 28-49.
- Christian, C. (2001) . Urban elderly women and fear of crime: A sociological analysis. *Unpublished Master Thesis*.
- Cortina, J. (1993) . What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78 (1) , 98-104.
- Currie, R. & Ursel, J. (1984) . Selected findings from the 1984 Winnipeg Area Study. Winnipeg: University of Manitoba Department of Sociology.
- Day, K. (1994) . Conceptualizing women's fear of sexual assault on campus: A review of causes and recommendations for change. *Environment and Behavior*, 26 (6) , 742-765.
- Denkers, A. J. M. & Winkel, F. M. (1998) . Crime victims' well-being and fear in a prospective and longitudinal study. *International Review of Victimology*, 5 , 141-162.
- Ditton, J., Bannister, J., Gilchrist, E., & Farrall, S. (1999) . Afraid or angry: Recalibrating the fear of crime. *International Review of Victimology*, 6 , 83-99.
- Ditton, J., Chadee, D., & Khan, F. (2003) . The stability of global and specific measures of the fear of crime: Results from a two wave Trinidadian Longitudinal Study. *International Review of Victimology*, 10, 49-70.
- Farrall, S., Bannister, J., Ditton, J., & Gilchrist, E. (1997) . Questioning the measure of the 'fear of crime': Findings from a major methodological study. *British Journal of Criminology*, 37 (4) , 658-679.

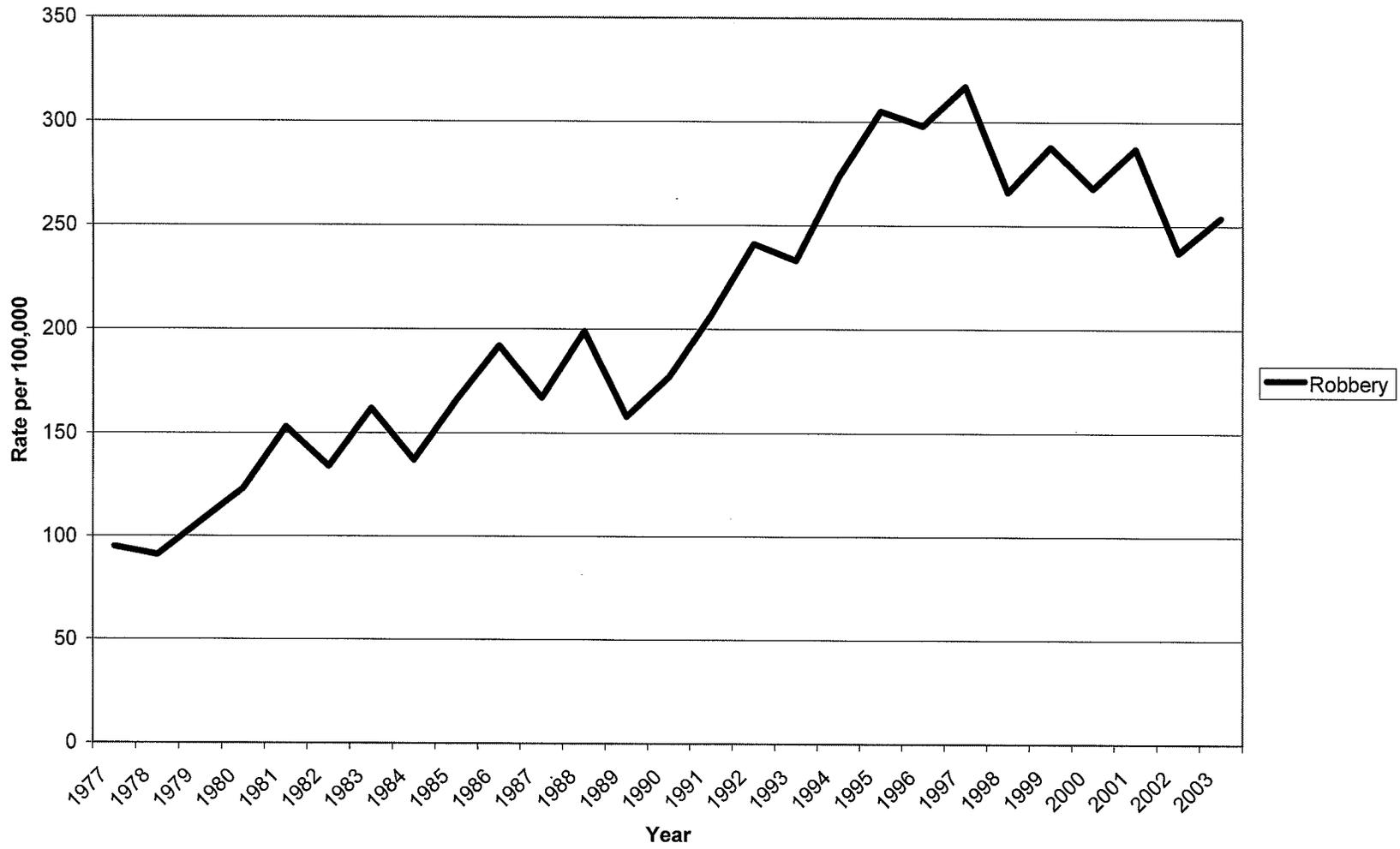
- Ferraro, K. F. (1995). *Fear of crime: Interpreting victimization risk*. New York: State University of New York.
- Ferraro, K. F. (1996) . Women's fear of victimization: Shadow of sexual assault? *Social Forces*, 75 (2) , 667-691.
- Ferraro, K. F. , & LaGrange, R. L. (1988) . Are older people afraid of crime? *Journal of Aging Studies*, 2 (3) , 277-287.
- Forde, D. R. (1993) . Perceived crime, fear of crime, and walking alone at night. *Psychological Reports*, 73, 403-407.
- Forde, D. R. (1994) . Selected findings form the 1994 Winnipeg Area Study. Winnipeg: University of Manitoba Department of Sociology.
- Gardner, C. B. (1990) . Safe conduct: Women, crime and self in public places. *Social Problems*, 37 (3) , 311-328.
- Gerber, L. (1990) . Multiple Jeopardy: A socioeconomic comparison of men and women among the Indian, Metis, and Inuit peoples of Canada. *Canadian Ethnic Studies*, 22 (3).
- Glenn, N. (1998) . The course of marital status and failure in five American 10-year marriage cohorts. *Journal of Marriage and the Family*, 60 (3) , 569-576.
- Gordon, M. T. , & Riger, S. (1989) . *The Female Fear*. New York: The Free Press, A division of Macmillian Inc.
- Hale, C. (1996) . Fear of crime: A review of the literature. *International Review of Victimology*, 4, 79-150.
- Haynie, D. L. (1998) . The gender gap in fear of crime, 1973-1994: A methodological approach. *Criminal Justice Review*, 23 (1), 122-136.
- Heath, L., Kavanagh, J., & Thompson, S. R. (2001) . Perceived vulnerability and fear of crime: Why fear stays high when crime rates drop. *Journal of Offender Rehabilitation*, 33 (2) 1-14.
- Homans, G. (1961) . *Social behavior: Its elementary forms*. London: Routledge & Kegan Paul.
- Houts, S. , & Kassab, C. (1997) . Rotters social learning theory and fear of crime: Differences by race and ethnicity. *Social Science Quarterly*, 78 (1) , 122-136.
- Jackson, W. (1995) . *Doing Social Research Methods*: Scarborough: Prentice-Hall Canada Inc.

- Keane, C. (1992) . Fear of crime in Canada: An examination of concrete and formless fear of victimization. *Canadian Journal of Criminology*, April , 215-224.
- Kelly, K. D. , DeKeseredy, W. S. (1994) . Women's fear of crime and abuse in college and university dating relationships. *Violence and Victims*, 9, 17-30.
- Krannich, R. S. , Berry, E. H. , & Greider, T. (1989) . Fear of crime in rapidly changing rural communities: A longitudinal analysis. *Rural Sociology*, 54 (2) , 195-212.
- Kury, H. , & Ferdinand, T. (1998) . The victim's experience and fear of crime. *International Review of Victimology*, 4, 93-140.
- LaGrange, R. L. , Ferraro, K. F. , & Supancic, M. (1992) . Perceived risk and fear of crime: role of social and physical incivilities. *Journal of Research in Crime and Delinquency*, 29 , 311-334.
- Lewis, T. , & Roberts, M. (2004) . The 2004 Winnipeg Area Study sample report. Winnipeg: University of Manitoba Department of Sociology.
- Madriz, E. (1997) . *Nothing Bad Happens to Good Girls: Fear of Crime in Women's Lives*. California: University of California Press.
- Mesch, G. S. (2000) . Women's fear of crime: The role of fear for the well-being of significant others. *Violence and Victims*, 15 (3) , 323-336.
- Menard, S. (1991) . Longitudinal Research. London: Sage Publications.
- Norris, F. H. & Kaniasty, K. (1992) . A longitudinal study of the effects of various crime prevention strategies on crime victimization, fear of crime, and psychological distress. *American Journal of Community Psychology*, 20, 625-648.
- Pain, R. (2001) . Gender, race, age and fear in the city. *Urban Studies*, 38 (5/6) , 899-914.
- Pantazis, C. (2000). 'Fear of crime', vulnerability and poverty: Evidence from the British Crime Survey. *British Journal of Criminology*, 40, 414-436.
- Parker, K. D. , & Ray, M. C. (1990) . Fear of crime: An assessment of related factors. *Sociological Spectrum*, 10 (1) , 29-40.
- Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998) . Using the correct statistical test for the equality of regression coefficients. *Criminology*, 36 (4) 859-865.

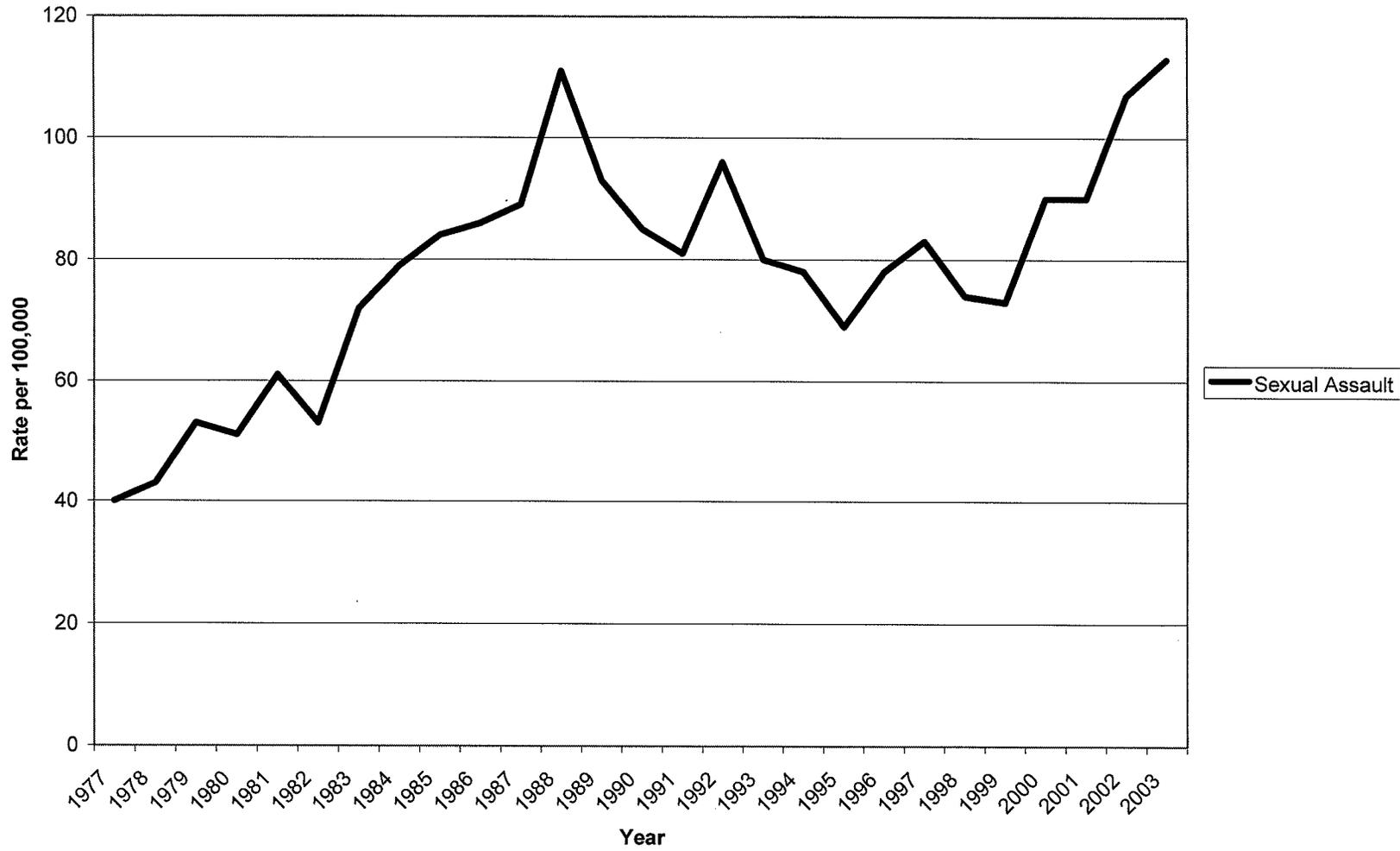
- Pendakur, R. & Mata, F. (1998) . Patterns of ethnic identification and the Canadian response. *Canadian Ethnic Studies*, 30 (2) 125-138.
- Roberts, J. V. (2001) . Fear of crime and attitudes to criminal justice in Canada: A review of recent trends. *Report of the Ministry of the Solicitor General of Canada*.
- Rountree, P., & Land, K. (1996) . Perceived risk versus fear of crime: Empirical Evidence of Conceptually Distinct Reactions in Survey Data. *Social Forces*, 74 (4) 1353-1376.
- Rucker, R. E. (1990) . Urban crime: Fear of victimization and perceptions of risk. *Free Inquiry In Sociological Spectrum*, 10 (1) , 29-40.
- Sacco, V. F. (1994) . Fear and personal safety. *Juristat* 15 (9), 1-20
- Savoie, J. (2001) . Crime statistics in Canada. *Juristat*, 22 (6).
- Scott, H. (2003) . Stranger danger: Explaining women's fear of crime. *The Western Criminology Review*, 4 (3).
- Skogan, W. , & Maxfield, M. (1981) . *Coping with crime: Individual and neighborhood reactions*. California: Sage.
- Smith, W. , Torstensson, M. , & Johansson, K. (2001) . Perceived risk and fear of crime: Gender differences in contextual sensitivity. *International Review of Victimology*, 8, 159-181.
- Smith, L. N. , & Hill, G. D. (1991) . Perceptions of crime seriousness and fear of crime. *Sociological Focus*, 24 (4) , 315-327.
- Stanko, E. (1990) . *Everyday violence: How women and men experience sexual and physical danger*, London: Pandora Press.
- Stanko, E. (1995) . Women, crime, and fear. *Annals of the Academy of Political and Social Science*, 46 , 46-58.
- Streiner, D. (2001) . Regression toward the mean: its etiology, diagnosis and treatment. *Canadian Journal of Psychiatry*, 46 (1) 72-76.
- Tanner, J. , Davies, S. , & O'Grady, B. (1999) . Whatever happened to yesterday's rebels? Longitudinal effects of youth delinquency on education and employment. *Social Problems*, 46 (2) , 250-274.
- Taylor, R. B. (1999) . Crime, grime, fear, and decline: A longitudinal look. *National Institute of Justice*, July, 1-12.

- Taylor, R. B. , & Hale, M. (1986) . Testing alternative models of fear of crime. *The Journal of Criminal Law & Criminology*, 77 (1), 151-189.
- Taylor, R. B. & Shumaker, S. A. (1990) . Local crime as a natural hazard: Implications for understanding the relationship between disorder and fear of crime. *American Journal of Community Psychology*, 18 (5) , 619-641.
- Uggen, C. & McMorris, B. (2000) . Alcohol and employment in the transition to adulthood. *Journal of Health and Social Behavior*, 41 (3) , 276-294.
- Wallace, M. (2004) . Crime statistics in Canada. *Juristat*, 24 (6).
- Warr, M. (1987) . Fear of victimization and sensitivity to risk. *Journal of quantitative criminology*, 3 , 29-46.
- Warr, M. (1995) . The polls-poll trends: Public opinion on crime and punishment. *Public Opinion Quarterly*, 59, 296-310.
- Warr, M. (2000) . Fear of crime in the United States: Avenues for research and policy. *Criminal Justice*, 4, 451-489.
- Weinrath, M. (1997) . Explanations of drunk driving recidivism: An exploratory analysis. *Unpublished PHD Dissertation*.
- Weinrath, M. (1999) . Violent victimization and fear of crime among Canadian Aboriginal. *Race, Ethnicity, Sexual Orientation, Violent Crime: The Realities and Myths*: The Haworth Press Inc.
- Weinrath, M. & Gartrell, J. (1996) . Victimization and fear of crime. *Violence and Victims*, 11 (3) , 187-197.
- Werts, C., & Linn, R. (1970) . Cautions of applying various procedures for determining the reliability and validity of multi-item scales. *American Sociological Review*, 35 (4) , 757-759.

Appendix A: Robbery Rate per 100,000



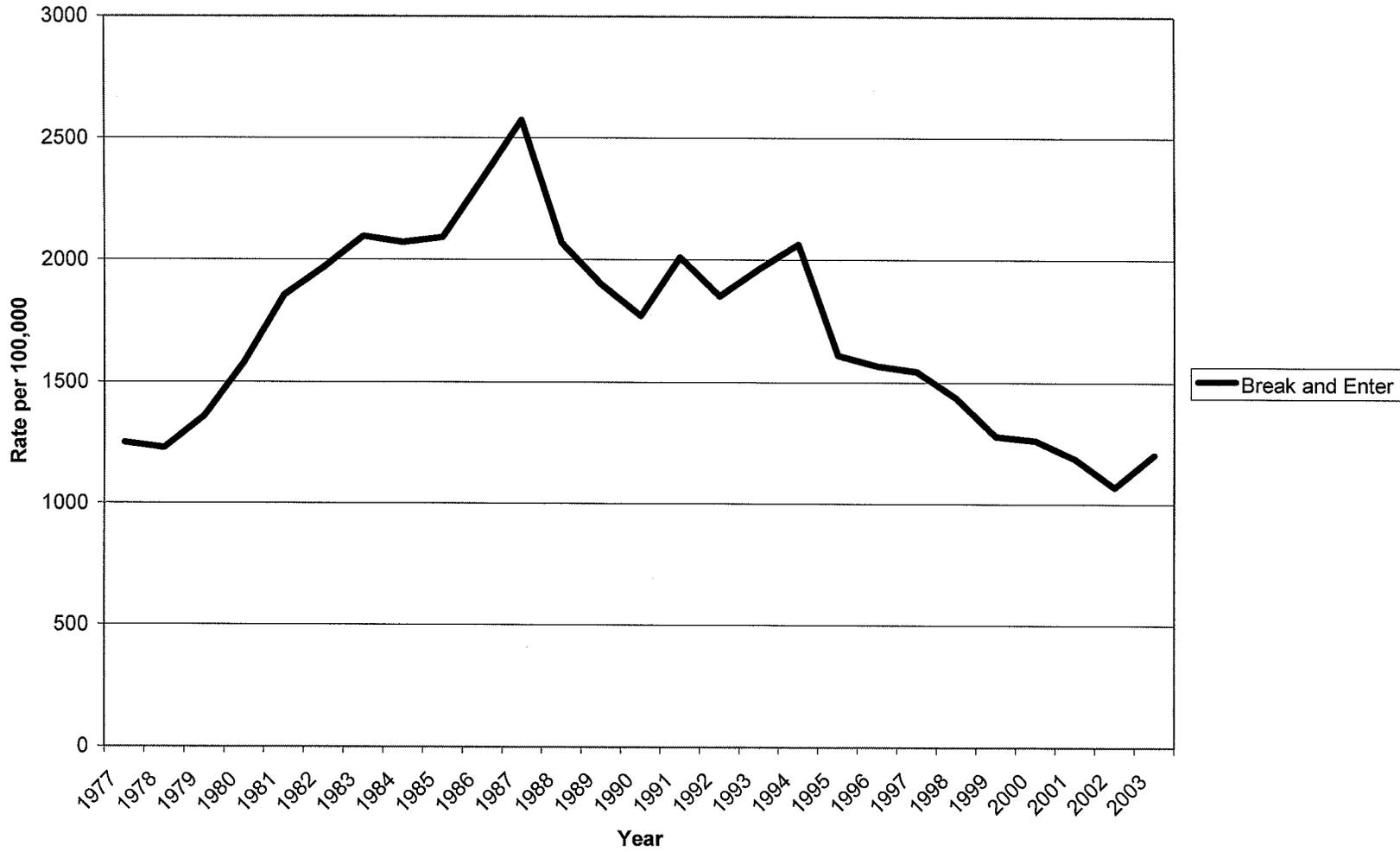
Appendix B: Sexual Assault Rate per 100,000



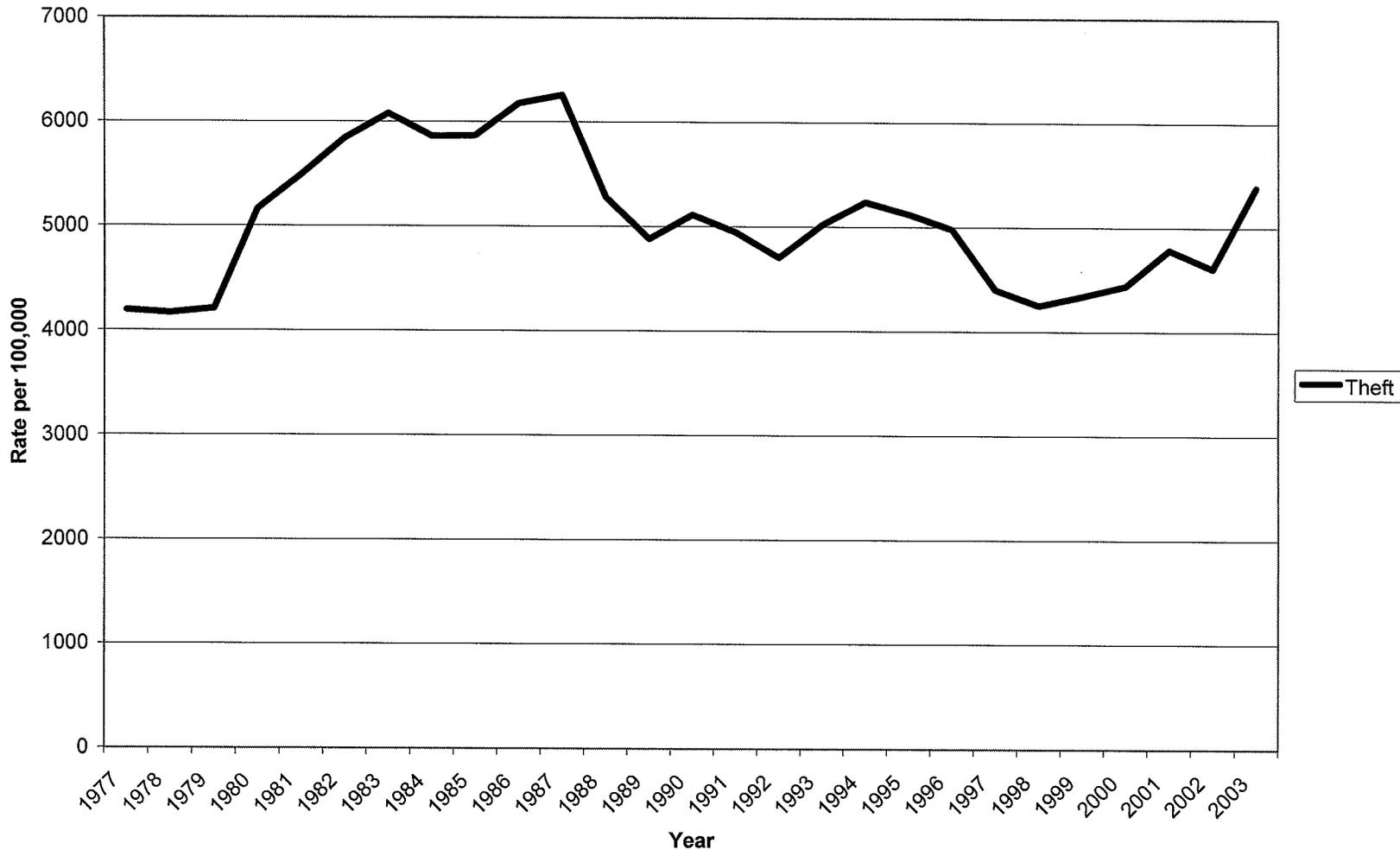
Appendix C: Assault Rate per 100,000



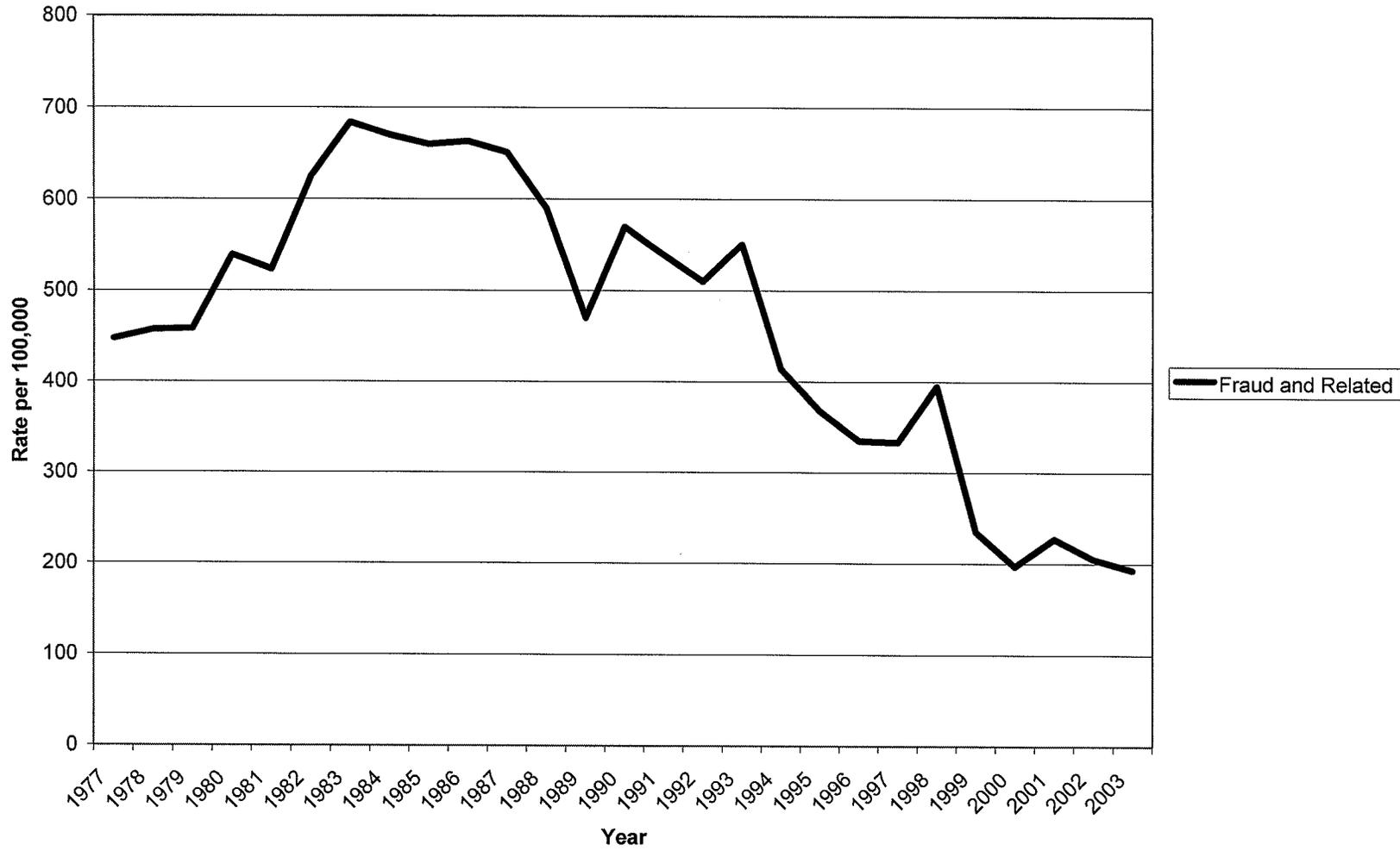
Appendix D: Break & Enter Rate per 100,000



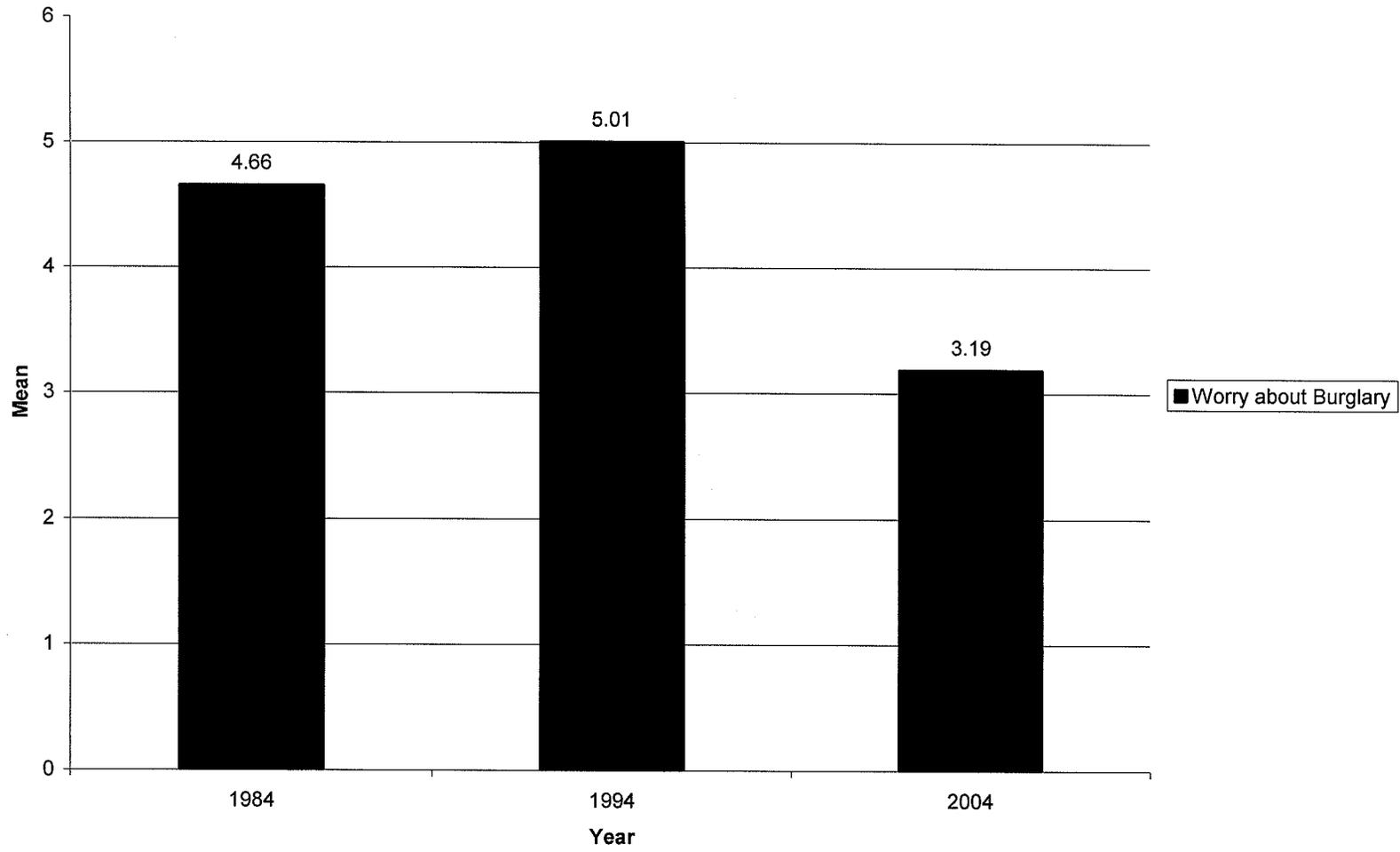
Appendix E: Theft Rate per 100,000



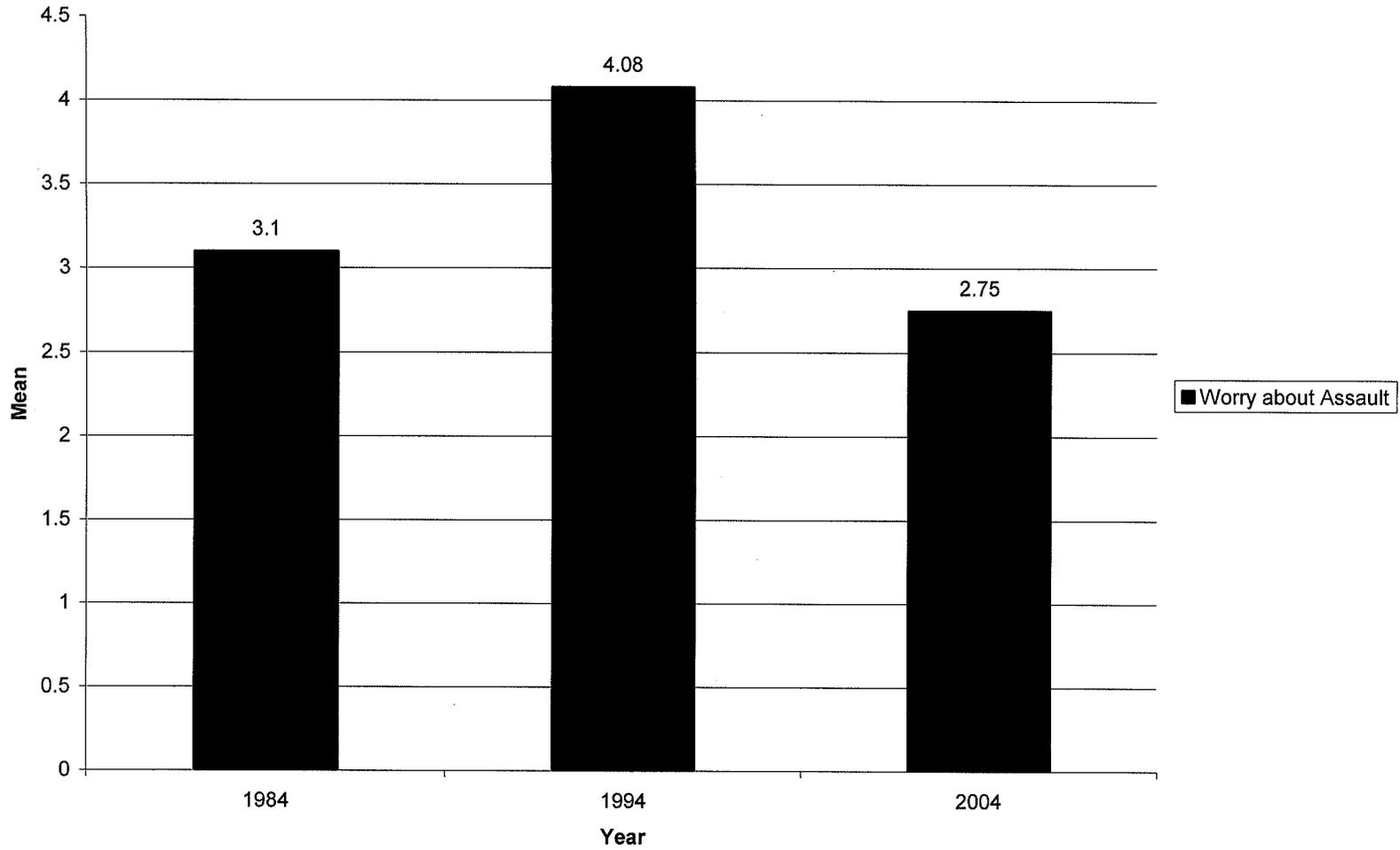
Appendix F: Fraud Rate per 100,000



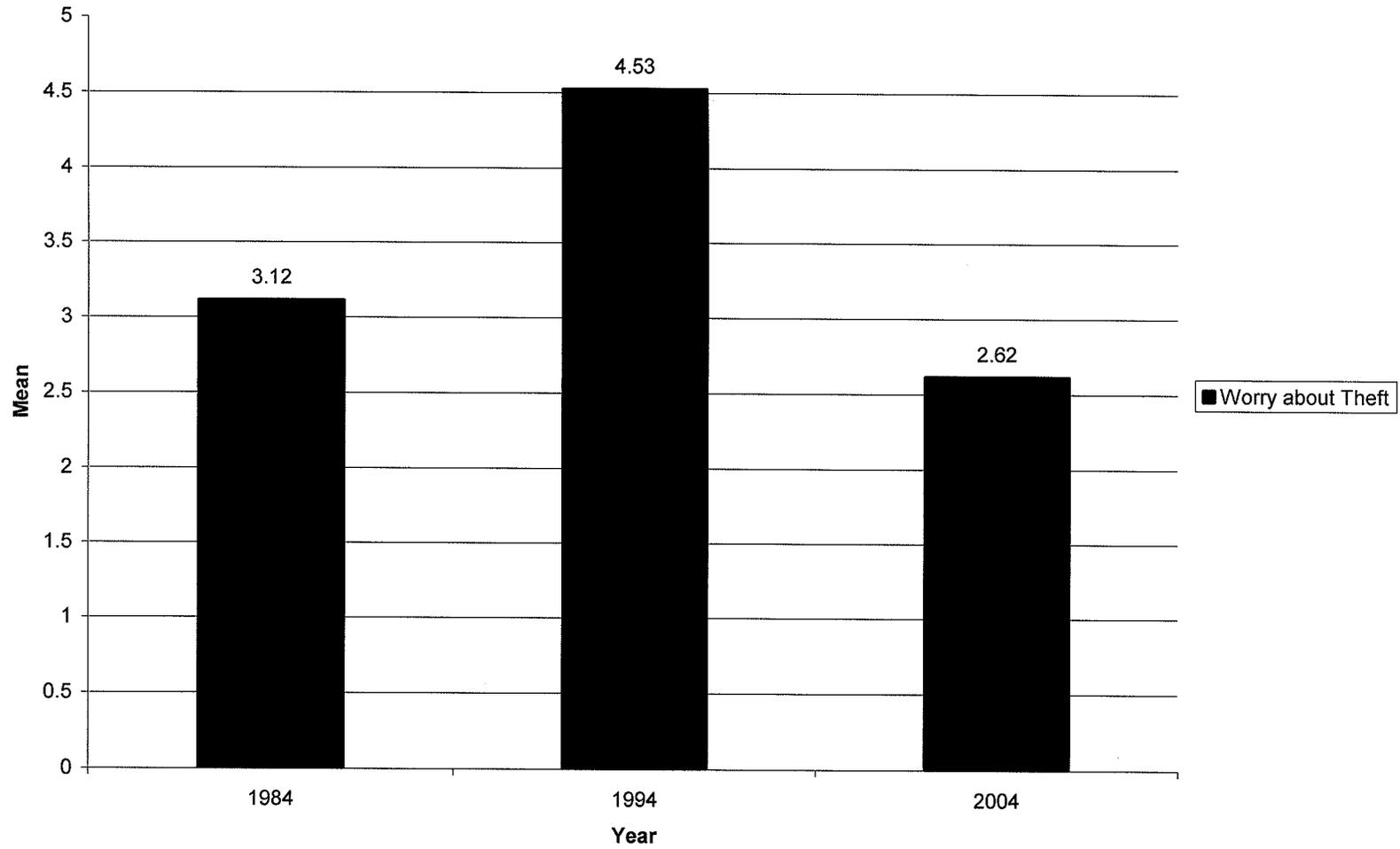
Appendix G: Worry About Someone Breaking In



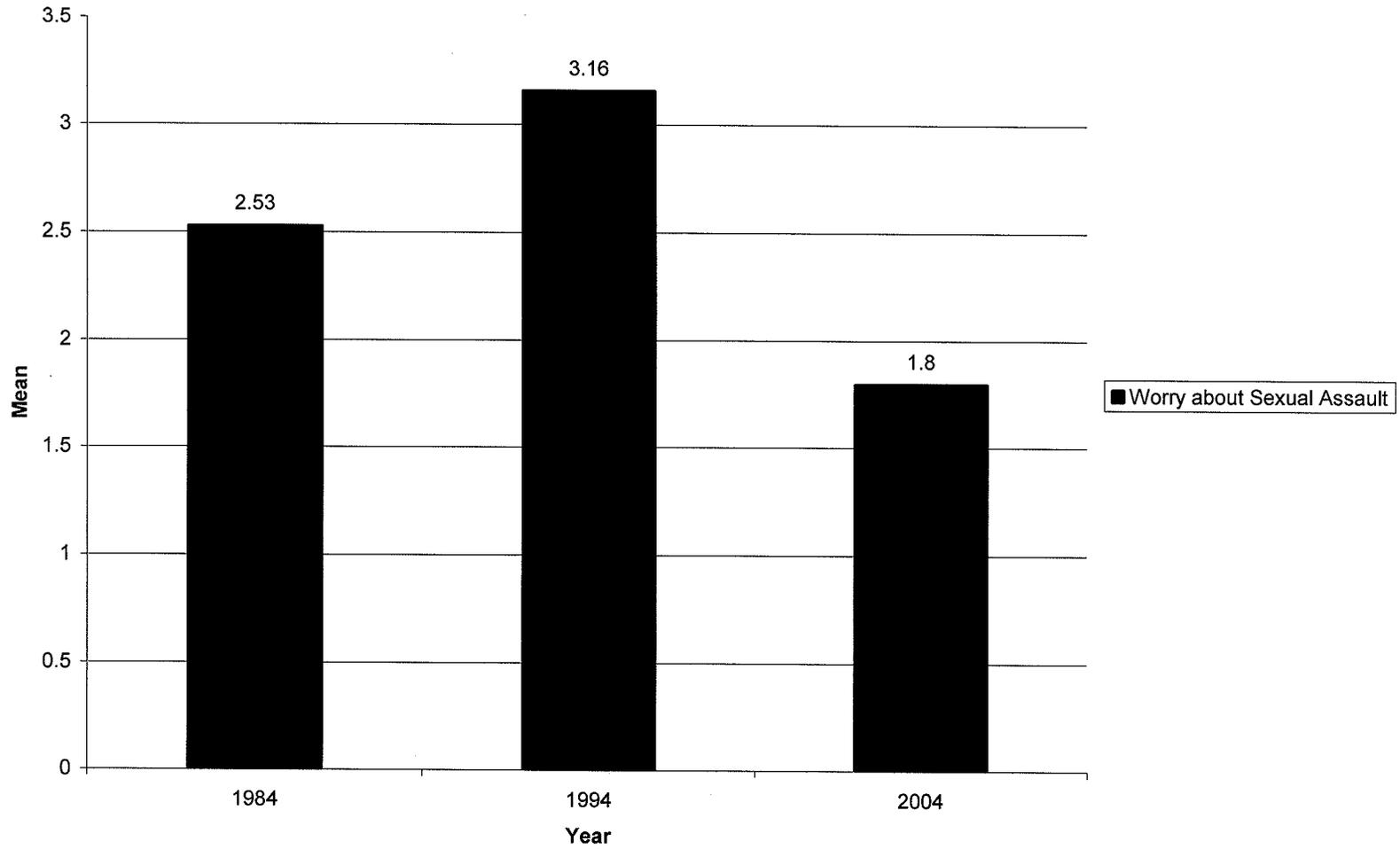
Appendix H: Worry about Assault



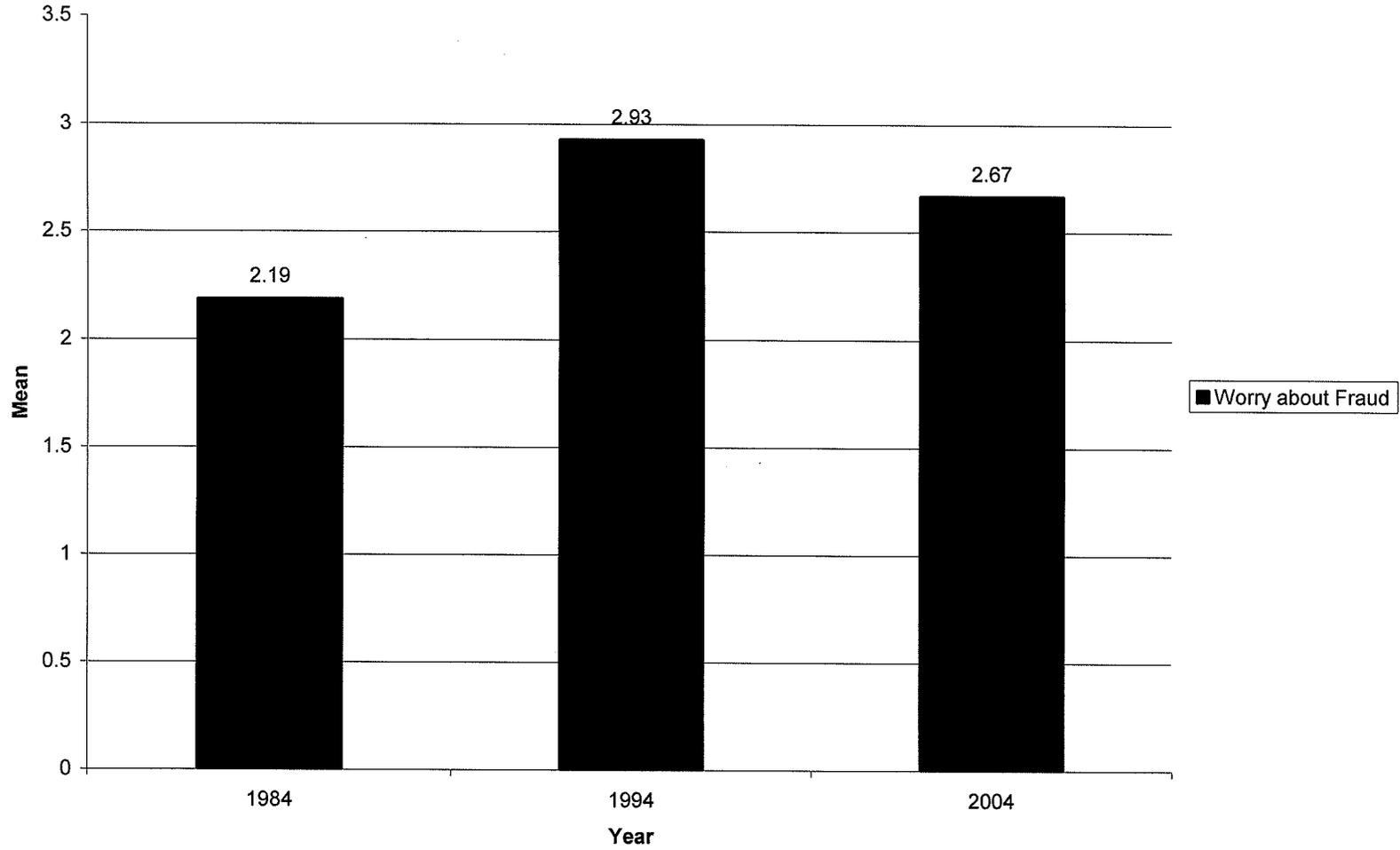
Appendix I: Worry about Theft



Appendix J: Worry About Being Sexually Assaulted



Appendix K: Worry About Being Cheated or Conned



Appendix L: Sample Weights

*Weighted only for inconsistencies in gender between Winnipeg Area Study sample and Winnipeg Census Population

	<u>1984</u>	<u>1994</u>	<u>2004</u>
Female	.94	.88	1.05
Male	1.08	1.18	.95

Appendix M: Correlation Matrix of Dependent and Independent Variables

	Fear of Crime index	Visible Minority	Marital Status	Gender	Income	Education	Age	Innercity	V1984	V1994	V2004
Fear of Crime Index	1.00	** .099	0.004	** 0.21	** -0.155	** -0.144	** -.169	-0.018	* -.049	** 0.257	** -0.228
Visible Minority		1.00	* -.048	** -.055	** -.122	-0.008	** -.149	-0.029	* -.043	-0.013	* .053
Marital Status			1.00	** -.059	** .169	0.026	** .102	** .060	* .053	0.005	** -.055
Gender				1.00	** -.290	* -.043	* .051	0.011	0.001	-0.001	0.001
Income					1.00	** .295	** .198	** -.071	** -.222	-0.007	** .221
Education						1.00	** -.191	** -.067	-0.035	-0.032	** .067
Age							1.00	** -.067	-0.035	-0.032	** .067
Innercity								1.00	** .438	** -.237	** .157
V 1984									1.00	** -.507	** -.394
V1994										1.00	** -.593
V2004											1.00

Appendix N: Correlation Matrix of Dependent and Independent Variables For Males

	Fear of Crime index	Visible Minority	Marital Status	Income	Education	Age	Innercity	V1984	V1994	V2004
Fear of Crime Index	1.00	**0.084	-0.04	**-.096	**-.129	**-.136	-0.03	*-.061	** .223	**-.181
Visble Minority		1.00	*-.061	**-.179	-0.003	**-.148	-0.036	-0.046	-0.015	0.059
Marital Status			1.00	** .390	0.024	** .334	*.079	0.056	*-.062	0.014
Income				1.00	** .258	** .286	-0.065	**-.225	0.02	** .193
Education					1.00	**-.134	0.016	** .173	0.015	** .145
Age						1.00	-0.028	-0.03	-0.023	0.052
Innercity							1.00	** .397	**-.243	**-.111
V 1984								1.00	*-.508	**-.393
V1994									1.00	**-.593
V2004										1.00

Appendix O: Correlation Matrix of Dependent and Independent Variables For Females

	Fear of Crime index	Visible Minority	Marital Status	Income	Education	Age	Innercity	V1984	V1994	V2004
Fear of Crime Index	1.00	** .143	0.057	** -.111	** -.091	** -.220	-0.013	-0.044	** .296	** -.275
Visible Minority		1.00	-0.042	** -.095	-0.019	** -.148	-0.022	-0.039	-0.01	0.047
Marital Status			1.00	** -.098	0.023	** -.091	0.046	0.051	* .065	* -.118
Income				1.00	** .365	** .141	* -.075	** -.237	-0.037	* .270
Education					1.00	** -.242	-0.017	** .176	0.006	** .158
Age						1.00	** -.102	-0.041	-0.04	** .082
Innercity							1.00	** .475	** -.231	** -.198
V 1984								1.00	** -.507	** -.394
V1994									1.00	** .592
V2004										1.00

Appendix P: Fear and Crime Trend Comparison

	<u>1984-1994</u>	<u>1994-2004</u>
Robbery Rate	↑	↑
Fear of Burglary	↑	↓
Sexual Assault Rate	↑	↑
Fear of Sexual Assault	↑	↓
Assault Rate	↑	↑
Fear of Assault	↑	↓
Break and Enter Rate	↓	↓
Fear of Break and Enter	↑	↓
Theft Rate	↓	↑
Fear of Theft	↑	↓
Fraud Rate	↓	↓
Fear of Fraud	↑	↓