

**Plotting Crime: Comparing Representations of the Spatial Distribution of Crime in an
Urban Context**

by

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Abstract

Over the past few decades, research into public perceptions of crime has largely focused on how mass media consumption shapes beliefs about crime. Substantially less research has been dedicated to exploring the potential influence of alternative sources of information, and even less attention has been devoted to exploring the spatiotemporal aspect of perceptions of crime. This thesis combined Geographic Information Systems (GIS) and structured interviews in order to explore the narratives about crime constructed by three sources: (1) the Ottawa Police Service, (2) the *Ottawa Citizen* newspaper, and (3) residents of Ottawa. Eight participants were taken on a walking tour interview, and their responses were compared to two maps depicting the geographies of crime presented by the Ottawa Police Service and the *Ottawa Citizen*. It was found that the places participants believed to be criminal ones were poorly maintained and dirty, were populated by large numbers of homeless individuals, had little to no commercial space, were geographically close to other areas of the city believed to be criminal spaces, and were poorly lit. The three construction of the spatial distribution of crime in Ottawa shared many common features (such as a focus on the Byward Market area as highly criminal) while remaining distinct in their presentation of certain types of spaces (such as the newspaper's presentation of homeless shelters as highly criminal spaces). Ultimately, this thesis explores three distinct narratives about the geography of crime in Ottawa through the use of a unique mixed methods design that provides an alternative way of interpreting data most commonly analyzed through deductive or quantitative means.

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1.0 Introduction

Perceptions of crime and fear of victimization have received a great deal of research attention over the past few decades. A particularly central and popular aspect of this body of literature has focused on the role of mass media consumption, particularly the impact of violent television viewership. For the most part, researchers and theorists have argued that a heavy amount of violent media consumption results in heightened levels of fear of crime and an increased belief in the risk of personal criminal victimization (Ebring, Goldenberg, & Miller, 1980; Sheley & Ashkins, 1981; Heath & Gilbert, 1996; Chiricos, Padgett, & Gertz, 2000; Koomen, Visser, & Stapel, 2000; Nabi & Sullivan, 2001; Yanich, 2001; Romer, Hall Jamieson, & Aday, 2003; Young, 2003; Weitzer & Kubrin, 2004; Banks, 2005). One of the most notable theories to emerge from this body of research is cultivation theory, which posits that violent television viewership “cultivates” a view of crime that is far more severe and violent than it truly is in “reality”. This theory has been used in large part to explain why levels of fear of crime have been found to be increasing despite falling rates of recorded crime (Gerbner & Gross, 1976; Romer, Hall Jamieson, & Aday, 2003; Young, 2003; Morgan & Shanahan, 1999).

This body of literature is not without its critics. Many researchers have argued that this view of the mass media is over-simplistic, and patronizing to those who consume violent media. These researchers argue that cultivation theory homogenizes the viewer population and ignores individual differences in demographics and consumption patterns that may affect how media messages are interpreted (Ebring, Goldenberg, & Miller, 1980; Potter, 1993). As a result, some researchers have attempted to find alternative reasons for heightened levels of fear of crime in light of falling recorded crime statistics. Some have argued that knowledge

of other, more local factors are much more important than mass media consumption. For example, it has been argued that knowledge of local officially-recorded crime rates has a much greater influence over perceptions of crime than does the mass media (Doob & MacDonald, 1979; Sheley & Ashkins, 1981; Gross & Aday, 2003).

Aside from the external information sources that have been reported to raise levels of fear of victimization, researchers have also attempted to determine whether visual cues in the physical environment have an impact over perceptions of crime. Although the greatest amount of research attention has been devoted to determining how the manipulation of lighting levels can influence perceptions of criminality in a particular place, other physical features, such as prospect (amount of physical obstructions blocking a person's ability to see all surroundings), dilapidation, cleanliness, and potential opportunities for escape or concealment have also been studied with regards to their relationship to public perceptions of crime (Brantingham & Brantingham, 1993; Loewen, Steel, & Suedfeld, 1993; Blobaum & Hunecke, 2005; Nasar, Fisher, & Grannis, 1993; Herbert & Davidson, 1994; Painter, 1996; Pain, MacFarlane, Turner, & Gill, 2006). This body of literature has been quite influential with respect to crime prevention initiatives. Despite conflicting or inconclusive findings, crime prevention initiatives such as Closed Circuit Television (CCTV) or Crime Prevention Through Environmental Design (CPTED) have been developed in an attempt to "design out" crime by eliminating the physical features thought to be associated with crime (Hier, 2004; Welsh & Farrington, 2009; Gill, Bryan, & Allen, 2007; Parnaby, 2006; O'Shea, 2000; Tijerino, 1998; Merry, 1981).

On a much larger (macro) scale, researchers from the field of criminology have joined forces with geographers in an attempt to determine how crime patterns emerge and

function over time and place (Vann & Garson, 2001). The use of Geographic Information Systems (GIS) has been gaining popularity over recent years as a research tool, particularly in determining the location, size, and characteristics of crime “hotspots” (single areas where crime rates are higher than average; Ratcliffe, 2002; Ratcliffe, 2004; Grubestic & Mack, 2008; Chainey, Tompson, & Uhlig, 2008, Thompson & Townsley, 2010). GIS has also been adopted by law enforcement organizations in order to better inform and plan their crime prevention initiatives and examine how their initiatives may impact existing crime hotspots (Craglia, Haining, & Wiles, 2000; Vann & Garson, 2001; Brunson, Corcoran, & Higgs, 2007). Some researchers have emphasized the importance of combining GIS with a variety of other research and analytical approaches in order to gain a greater understanding of crime (Pain et al., 2006), while others have argued that time is as important as place when examining crime in a geographic context (Ratcliffe & McCullagh, 1998; Ratcliffe & McCullagh, 1999; Ratcliffe & McCullagh, 2001; Ratcliffe, 2002; Ratcliffe, 2004).

This thesis both expands upon and unites the existing literature addressing the spatial distribution of crime and public perceptions of crime. Although this body of criminological and geographic research is extensive and oftentimes conflicting, this thesis combines aspects of past research into public perceptions of crime and the role of mass media and officially-recorded statistics in informing those perceptions, geographic patterns in crime hotspots, and physical indicators of crime, in order to explore the ways in which the geographies of crime are constructed by three sources: the local municipal police (the Ottawa Police Service), a local newspaper (the *Ottawa Citizen*), and Ottawa residents.

The geography of crime constructed by the Ottawa Police Service was examined by creating a map from raw data provided by the police service itself that included reported

crimes responded to by the OPS and their respective geographic locations by 100 block address. The geography of crime constructed by the *Ottawa Citizen* was examined by creating a map from data obtained through the manual coding of individual newspaper articles; this data recorded the individual geographic locations for each crime published in the newspaper during the selection period where an address or approximate area was identified. For both the police and newspaper maps, the data used to construct the maps was recorded between January 1st and August 31st, 2011. The final geography of crime examined was that of eight Ottawa residents (four females and four males) who participated in a structured interview that took place, in part, during a walking tour of areas of downtown Ottawa identified by the OC map as both criminal and noncriminal. During the walking tour, participants also provided a numerical rating best describing the crime rate they believed to exist in that area (on a scale of one to 10, with 1 being extremely low crime and 10 being extremely high crime). Participants also took part in a structured interview that, at each of eight pre-determined interview locations, provided insight into why each numerical rating was provided. This approach drew upon the work of Pain et al. (2006), who claim that GIS can be enriched with qualitative data to provide the greatest depth of analysis possible. Additionally, Garofalo (1981) asserts that discussing fear of crime in a laboratory setting does not provide an accurate picture of fear of crime, as participants must be in a field setting to observe the environmental cues that trigger fear.

The research questions and sub-questions investigated in this thesis are as follows:

1. How do the Ottawa Police Service, the *Ottawa Citizen*, and Ottawa residents describe the geography of crime in the City of Ottawa?

2. Which areas of Ottawa are identified as high/low crime areas by the official crime statistics recorded by the Ottawa Police Service?
3. Which areas of Ottawa are identified as high/low crime areas by the *Ottawa Citizen* newspaper?
4. Which areas of Ottawa are believed by participants to possess the highest/lowest crime rates?
 - a. Which environmental or physical characteristics factor into the participants' individual assessments of the crime rates present in an area?
5. At which locations in the city of Ottawa do more than one source (Ottawa Police Service, *Ottawa Citizen*, participants) agree that especially high/low crime rates exist?

By answering these research questions, it is hoped, first, that this thesis will provide a unique perspective on the construction of geographies of crime by comparing the spatial distributions of recorded crime presented by three different sources, each of which plays an important role in the literature. This comparison could provide valuable insight into the potential relationships between these three sources. Second, it is hoped that this thesis can inform further research into conflicts within the criminological and geographic literature, particularly with regards to the role that both the mass media and officially-recorded crime statistics play in the formation of public perceptions and geographies of crime.

The findings of this thesis could also potentially have important implications for law enforcement policy. As GIS is being used increasingly by law enforcement agencies in an attempt to better understand crime and allocate police resources accordingly, the findings of this thesis may contribute to proactive and social programming that can target the roots of

neighbourhood stigma. As Stark (1987) argues, stigmatized neighbourhoods are those that also experience the highest recorded crime rates; exploration of the markers individual citizens use when assessing an area as criminal or noncriminal may contribute to a greater understanding of how particular Ottawa neighbourhoods are stigmatized. Identifying these markers may potentially be used to better direct and allocate social programming throughout the city to help marginalized populations dealing with high rates of crime.

In order to answer the research questions while attempting to remain sensitive to the aforementioned literature spanning a wide variety of criminological and geographic topics, this thesis combined a variety of data collection and analytical techniques. GIS mapping techniques were used to allow for a visual comparison of the three geographies of crime (the OC and OPS data were both mapped, then the qualitative and numerical participant data were used to complete the comparison).

Thematic analysis was used to examine both the qualitative data obtained from the participant interviews and the maps constructed using GIS techniques. Thematic analysis was chosen in order to remain consistent over such a wide variety of data sources and types. This form of analysis can be applied to visual data in addition to interview data, and the search for similarities, differences, omissions, irregularities, and trends can be adapted to address either data form.

This thesis begins with a thorough review of the criminological and geographic literature pertaining to the effects of mass media consumption, the influence of recorded crime statistics on perceptions about crime, environmental indicators of crime or danger, and the use of GIS techniques for law enforcement purposes. Then, an in-depth overview of the methodological considerations, data collection, and analysis techniques used is presented.

This is followed by a thorough exploration and discussion of the findings gleaned through the analysis process. The thesis concludes with a summary of findings, a discussion of the limitations and implications of the findings, and suggestions for future areas of research.

2.0 Literature Review

2.1 Introduction

Over the past few decades, a great deal of academic literature has focused on the potential origins of perceptions of crime and the ways in which these perceptions affect everyday activities. Such research has drawn links between heavy mass media consumption and the belief that crime is becoming increasingly rampant and violent (Ebring, Goldenberg, & Miller, 1980; Sheley & Ashkins, 1981; Heath & Gilbert, 1996; Chiricos, Padgett, & Gertz, 2000; Koomen, Visser, & Stapel, 2000; Nabi & Sullivan, 2001; Yanich, 2001; Romer, Hall Jamieson, & Aday, 2003; Young, 2003; Weitzer & Kubrin, 2004; Banks, 2005). Contrary to such findings, other research has found that knowledge of local recorded crime rates is more closely related to the perception that crime rates are rising (Doob & MacDonald, 1979; Sheley & Ashkins, 1981; Gross & Aday, 2003). Others have attempted to demonstrate that many individuals make cognitive links between environmental cues in the immediate physical environment and danger (Greenberg & Rohe, 1984; Loewen, Steel, & Suedfeld, 1993; Nasar, Fisher, & Grannis, 1993; Painter, 1996; Schweitzer, Kim, & Mackin, 1999; Lianos & Douglas, 2000; Kuo & Sullivan, 2001; Blobaum & Hunecke, 2005). Varying levels of neighbourhood social cohesion are also said to fluctuate alongside perceptions of crime (Rosenbaum, 1987; Norris & Kaniasty, 1992; Taylor, Gottfredson, & Brower, 1984). Attention has also been dedicated to determining the common demographic variables among those who believe crime rates to be rising (Lavrakas, 1982; Madge, 1997; Dixon & Linz, 2000; Moran, Skeggs, Tyrer, & Corteen, 2003; Brownlow, 2005). Despite this plethora of findings, individual studies often relate perceptions of crime to a single variable without

investigating any possible interactions between perceptions of crime and a number of other potentially related factors.

At the same time, a number of mapping, community intervention, and policing techniques have emerged to study the perception that crime rates are rising. Although the success of such programs varies, it is noteworthy that much of the available literature similarly examines each program in isolation from the others while ignoring some of the potential social and environmental forces that may also correlate with the perception that crime rates are rising, as listed above (Zenou, 2003).

The following review will examine the perception of crime literature that has emerged to date. I will begin by exploring the claims and theories that attempt to describe the link between perceptions of crime and the mass media, and then explore similar assertions that the perception that crime rates are rising stems from direct knowledge of local crime rates. Next, I will examine how the perception of crime literature has attempted to identify the potential environmental cues that are factored into an individual's risk assessment of a particular place, and how assumptions about these cues have been incorporated into a number of theories and crime prevention strategies. Finally, I will provide an analysis of crime mapping techniques that aim to not only plot, but to also predict, high crime areas. Following this review of the literature, the implications and limitations of the available body of literature will be discussed in detail. Because of the substantial amount of literature supporting opposing and irreconcilable conclusions, further research into the potential variables related to the perception that crime rates are rising is crucial. Specifically, the literature examining the potential relationships between perceptions of crime and mass media consumption, knowledge of official crime statistics, demographic

variables, and environmental cues is highly contradictory and requires further exploration. Additionally, as most research into perceptions of crime has been conducted outside of Canada where social, cultural, and mass media tastes may differ, further insight into perceptions of crime as experienced by Canadians is essential. I will attempt to address all of these research gaps and contradictions throughout this thesis.

2.2 Perceptions of Crime

2.2.1 Perceptions of Crime and Mass Media Consumption

The potential correlation between perceptions of crime and mass media consumption has been thoroughly investigated in recent decades. One of the most influential theories attempting to address this relationship is cultivation theory, which posits that mass media consumption contributes to the enculturation of its consumers (Gerbner & Gross, 1976). Heavy consumers “cultivate” a view of reality that more closely resembles media depictions than official crime statistics or typical experiential tendencies (Romer, Hall Jamieson, & Aday, 2003; Young, 2003). According to cultivation theory, individuals who consume mass media heavily tend to be more likely to believe that crime is becoming increasingly violent and rampant due to the fact that they have internalized a view of the world in which that is said to be true (Morgan & Shanahan, 1999). In the mass media, atypical, severe, and violent depictions of crime have become increasingly popular in both fictional dramas and news reporting (Raney & Bryant, 2002; Young, 2003; Jewkes, 2004). Considering the core tenets of cultivation theory and these popularized crime depictions, it is perhaps unsurprising to note that viewers have become increasingly concerned about random street-level violence independent of official crime rate statistics displaying trends towards the contrary (Sheley & Ashkins, 1981; Romer et al., 2003).

Although Gerbner and Gross (1976) originally focused on the role of violent television programming in socializing its viewers, cultivation theory has since been extended to other forms and genres of mass media (Weitzer & Kubrin, 2004). It has been argued that consumers interpret information differently depending on the mass media type (Heath & Gilbert, 1996; Koomen, Visser, & Stapel, 2000). For example, broadsheet style newspapers are considered by readers to be more credible than tabloid style newspapers (Williams & Dickinson, 1993), and the online version of a newspaper lacks the hierarchical organization of its print counterpart that signals to readers the “importance” of a news story (Tewksbury & Althaus, 2000). These characteristics are said to influence the degree to which consumers internalize crime depictions, although much of the research examining the relationship between perceptions of crime and the mass media has ignored the way each type of medium presents information and how such delivery is interpreted by audiences (Heath & Gilbert, 1996; Hetsroni & Tukachinsky, 2006).

Despite a number of studies that have found support for cultivation theory, these results become more complex once individual characteristics and local geographic contexts are controlled for. Much of the academic literature examining cultivation theory has homogenized mass media audiences; that is, levels of viewership, individual interests, and pre-existing issue sensitivities are almost entirely ignored as viewers are assumed to be passive and equally-receptive (Ebring, Goldenberg, & Miller, 1980; Potter, 1993). However, even the notion that “pre-existing sensitivities” result in different rates of attention paid to crime stories is fraught with difficulties, as there is no clear consensus about the origins of these sensitivities. For example, Ebring et al. (1980) claim that these sensitivities arise out of past experience or prior victimization, while others posit that such sensitivities are

themselves the product of internalized mass media agenda-setting (Gross & Aday, 2003). Such research findings indicate that once the audience is afforded a degree of agency and individual differences in consumption are taken into account by investigators, the relationship between mass media consumption and perceptions of crime is not as simple as formerly thought (Hetsroni & Tukachinsky, 2006).

Few academic analyses of the relationship between perceptions of crime and mass media have taken spatial context into account. Like the aforementioned individual values, Banks (2005) claims that wider community attributes may contribute to the way that mass media depictions of crime are consumed, interpreted, and internalized. For example, individuals living in a racially heterogeneous neighbourhood are more likely to ignore stereotypical mass media portrayals of racialized minorities as “criminal” than their counterparts living in racially homogeneous areas (Dixon & Linz, 2000; Gilliam, Valentino, & Beckmann, 2002). Such claims suggest that direct personal experience and knowledge potentially have a moderating effect on which mass media information is internalized. Again, audiences are not merely passive recipients of media messages as was posited by early “hypodermic” models; rather, their attributes and values can act as a “filter” through which some depictions are given more attention and credence than others (Gross & Aday, 2003). However, the precise influence of external community forces remains a point of disagreement: while some research indicates that the mass media are more influential than community experiences due to the fact that residents maintain a view of crime as being highly violent and widespread despite controlling for local neighbourhood crime rates (Chiricos, Padgett, & Gertz, 2000), other research has found that these media effects virtually disappear once community crime rates are taken into account (Doob & MacDonald, 1979;

Doran & Lees, 2005). Clearly, cultivation theory is not universally supported. One major criticism of the theory is that it implies directionality; that is, cultivation theory assumes that mass media consumption *causes* perceptions of crime to become increasingly negative (Reiner, 2007). Ditton, Chadee, Farall, Gilchrist, and Bannister (2004) acknowledge that individuals who consume mass media tend to perceive that crime is becoming more violent and widespread, but they also note that research to date has yet to prove a causal relationship between the two. It is possible that individuals who hold such beliefs consume greater quantities of violent media because of their pre-existing perceptions of crime, or it is possible that the two co-exist without any relational link at all due to a spurious third factor (Ditton et al., 2004).

In addition to earlier-noted research that concludes that the immediate surrounding neighbourhood impacts consumption and internalization patterns, investigations into the correlation between the mass media and perceptions of crime must also take into account the geographic origins of a mass medium and its particular depictions of crime. Local news reports are used by its consumers to construct a sort of “cognitive map” of their surroundings, on which hotspots of crime are mentally plotted (Hay & Israel, 2001; Yanich, 2001). Nabi and Sullivan (2001) found that these cognitive crime maps are often mobilized in a discriminating way; individuals with such internalized maps may choose to avoid an area or to adopt self-protective measures when travelling through an area depicted by the media as a crime hotspot. Interestingly, comparisons between local crime stories and stories about crime in distant neighbourhoods can actually make an individual feel safer by comparison. Thus, while local news stories appear to have the greatest impact on perceptions of crime among individuals living in the depicted neighbourhood, the belief that

crime is highly violent or rampant can be relegated if other neighbourhoods are made to appear more dangerous and crime-ridden than one's own (Liska & Baccaglini, 1990).

It should also be noted that while much of the research examining the relationship between mass media consumption and perceptions of crime has been conducted in the U.S.A., Dowler (2004) found that the differences between American and Canadian media content and reporting styles are largely negligible. However, more research into the potential relationship between perceptions of crime and mass media consumption in a Canadian context is needed. Because the aforementioned literature stresses the importance of situating perceptions of crime in a geographic context, it cannot be assumed that American findings can be generalized in Canada. The generalization of American research examining the relationship between perceptions of crime and other variables such as mass media types, consumption patterns, crime rates, and culture risks overlooks potential nuances unique to the Canadian context. Furthermore, it is important to note that the literature addressing cultivation theory focuses on street crime in particular, and ignores other types of crime that may not be so immediately obvious in public spaces or in the media.

Taken as a whole, the research on the relationship between mass media consumption and perceptions of crime appears highly contradictory. Much of the literature has simplified this potential relationship by excluding other potential mediating forces, such as the unique values and demographic variables of the consumers, and the spatial characteristics of the mass media and the context in which it is consumed. These contradictions signal a need for more inclusive research designs that can adequately assess potential interactions, and that are accompanied by clear definitions of the terms mobilized.

2.2.2 Perceptions of Crime and Official Crime Statistics

There is another major contradiction evident in the literature addressing mass media effects: the inclusion of local crime statistics. As mentioned above, research has supported two entirely opposing and irreconcilable conclusions in this domain: that the mass media has little to no effect on perceptions once local crime rates have been controlled for (Doob & MacDonald, 1979; Doran & Lees, 2005); and that the mass media has an effect on perceptions even when researchers control for local crime rates (Chiricos et al., 2000). This clearly calls for further research, but perhaps equally troubling is the lack of any distinction between official, police-recorded crime statistics and the “reality” of crime in a given area. Knowledge of official crime statistics is different from knowledge of local criminal incidents or disorder. It cannot be assumed that official crime statistics are wholly indicative of the actual instances of crime; the “dark figure of crime” represents the unknown number of criminal acts that go either unreported to, or unrecorded by, police (MacDonald, 2002). Increased police attention to certain areas or types of crime could also cause crime rates to become inflated (Goudriaan, Wittebrood, & Nieuwebeerta, 2006). Additionally, this dark figure is not equally distributed among all crime categories, as less serious offences and crimes committed by close friends and family members are most likely to remain unreported (Skogan, 1977). The dark figure of crime changes in character and severity over time in accordance with shifting social and economic trends. It is accordingly very difficult for researchers to estimate the precise proportion of crimes going unreported at any given time (MacDonald, 2001). Considering the difficulties associated with official crime statistics and measurements such as over-reporting, under-reporting, and discriminatory policing, these statistics must be considered a construct in themselves rather than as a true indicator of the

reality of crime. Given the apparent impossibility of accurately measuring crime occurrences, it is understandable that official statistics are often taken to be the truest indicator of reality. However, the difficulties associated with these official statistics must be noted by researchers in order to avoid conflation between official statistics and occurrences of crime (a distinction that is not often made in the related academic literature).

Much of the academic literature investigates the relationship between space and either perceptions of crime or official crime rate patterns, without considering the potential interactions between these three concepts (Doran & Lees, 2005). Given that perceptions of crime often do not reflect recorded crime rates and that the literature addressing the relationship between mass media consumption and perceptions is so inconclusive, it is necessary to search for other potential sources of perceptions in social and spatial contexts (Schweitzer, Kim, & Mackin, 1999). Although, once again, the literature is somewhat conflicted regarding the influence of physical characteristics of the built environment and neighbourhood social factors over both perceptions of crime and actual crime occurrences, there is, in fact, some agreement within this domain.

2.2.3 Perceptions of Crime and Environmental Characteristics

In many respects, the Chicago School of sociology founded in the 1920s served as the groundwork for the decades of academic research into the environmental, spatial, and ecological characteristics of crime that have followed (Stark, 1987). A particularly influential contribution of the Chicago School was the attempt to map crime rates and identify correlations with neighbourhood demographic information. Park and Burgess (1925) noted that when mapped, the spatial distribution of social groups and crime rates within the city of Chicago could be illustrated using concentric circles (p. 50). Of particular

importance to criminological study was the concentric ring identifying the “zone of transition” that encircled the downtown business sector (Park & Burgess, 1925, p. 148). The zone of transition was said to be an area characterized by disorder, as the neighbourhoods within this zone possess low levels of social cohesion and a predominantly transient and migrant population (Park & Burgess, 1925; Stark, 1987).

In his classic study on the ecology of crime, Stark (1987) criticized the Chicago School’s overemphasis on the demographic composition of high crime neighbourhoods, particularly the presence of racialized minorities. He noted that neighbourhoods characterized by high rates of crime sustain these elevated rates despite a complete turnover in its population. This suggests that there are certain neighbourhood characteristics that support and enable crime independently of the social and demographic features of the community itself. He indicated five fundamental neighbourhood characteristics that tend to be present across a wide variety of high crime areas: (1) population density; (2) poverty; (3) mixed use of neighbourhood space; (4) transient population; and (5) dilapidation (Stark, 1987, p. 895). Research completed over the past few decades has confirmed the presence of these characteristics in a variety of high crime areas and their independence from shifting social and demographic factors (Harries, 1976; Block, 1979; Sampson, 1985; Perkins, Wandersman, Rich, & Taylor, 1993; Harries, 2006). In addition, the physical design of a given neighbourhood tends to be associated with both the perception that crime rates are increasing and with actual incidents of crime (Schweitzer et al., 1999). Interestingly, there is some overlap between the physical cues assumed by individuals to be associated with crime and those cues that actually *are* associated with instances of criminal activity (Garofalo,

1981). This suggests that perceptions of crime are informed at least in part by knowledge about the reality of crime and disorder as it is distributed in the local geographic area.

A number of scholars report that both the potential offender and the potential victim assess their proximate physical surroundings in order to determine the level of risk associated with that area. In particular, lighting levels, prospect (the ability to clearly see the surrounding area), and opportunities for escape are most commonly involved in this risk assessment (Brantingham & Brantingham, 1993; Loewen, Steel, & Suedfeld, 1993; Blobaum & Hunecke, 2005). These findings claim that perceptions of crime in public space is related to uncertainty about the psychical surroundings and the recognition that an area could conceal potential dangers (Nasar, Fisher, & Grannis, 1993). Of these three physical indicators, the association between levels of lighting and the perception that crime rates are high has received the most research attention. While it is unclear whether improved lighting actually reduces crime rates, it has proven effective in relegating the belief that crime is rampant and in increasing the use of formerly-darkened areas (Herbert & Davidson, 1994; Painter, 1996; Pain, MacFarlane, Turner, & Gill, 2006). It is thought to be likely, however, that improved lighting can reduce crime rates as well, due to an increased presence of bystanders and, thus, opportunities for informal social control (Painter, 1996).

The notion of opportunity plays an important role in the perception of crime and spatial pattern literature. Specifically, much of the research that focused on examining the relationship between space and both perceptions of crime and actual criminal tendencies is rooted within routine activity theory. This theory posits that crimes are the result of three simultaneously converging conditions: (1) the presence of a target; (2) the lack of adequate guardianship over the target; and (3) a motivated offender who conducts a cost-benefit

analysis before deciding to act (Felson & Cohen, 1980, p. 392). At the core of routine activity theory is the notion that crime is opportunistic and can be reduced if a potential offender concludes through his or her cost-benefit analysis that the risks associated with a crime are too great (Groff, 2008; Sampson, Eck, & Dunham, 2010). An offender can also reassess the situation as he or she is committing the crime; for example, a victim may unexpectedly fight back, thus making the “target” more heavily guarded and less easily attainable by the offender (Guerette & Santana, 2010). Therefore, routine activity theory suggests that a potential offender can be deterred if a potential target or victim is made unattainable or spontaneously becomes more elusive.

It is important to note that the central tenets of routine activity theory did not originally include a spatial aspect; the theory has been adjusted and adapted over time to address crime hotspots in order to determine the characteristics of those areas that potentially contribute to their criminogenic nature (Sherman, Gartin, & Buerger, 1989). This modification appears to have led to a veritable explosion in crime prevention tactics based on routine activity theory principles, many of which have questionable effects and seem to be rooted more deeply in lay theory than in academic evidence. Closed circuit television (CCTV) systems are perhaps the most common example of this dynamic.

CCTV systems have been installed throughout much of the United Kingdom in recent years, and are now spreading throughout the Western world (Hier, 2004). The attractions of CCTV systems appear to be two-fold: first, our increasing dependence and daily interaction with technological security systems have led to the internalization of the idea that unguarded public space is inherently dangerous in the absence of such technological controls (Lianos & Douglas, 2000); and second, there is a common belief that CCTV systems can act as an

effective deterrent, as potential offenders notice the cameras and become anxious that they will be used against them effectively in an investigation following the criminal act (Welsh & Farrington, 2009). It is in the latter aspect that routine activity theory can be most obviously identified. CCTV is thought to act as a sort of guardian that makes the target less easily attainable, as potential offenders supposedly take these systems into account during their cost-benefit analyses. However, research into public opinion and the purported effects on crime rates surrounding the implementation of CCTV systems have not supported these common sense assumptions. CCTV systems have not only failed to meet the expectations of local residents in areas where the cameras have been introduced (Gill, Bryan, & Allen, 2007), but they have also had very negligible effects on officially recorded crime rates (Welsh & Farrington, 2009). The most significant effect has been found in car parking garages, but even in this context, the individual contributions of CCTV systems are difficult to ascertain as the cameras are often installed in parallel with other additional security precautions (Welsh & Farrington, 2009). In the specific case of CCTV, routine activity theory does not appear to gain support; even when a target has been “hardened” following the installation of security cameras, offenders still choose to offend.

CCTV is not the only prevention tactic that mobilizes the assumptions of routine activity theory. Crime Prevention Through Environmental Design (CPTED) is an architectural and landscaping design strategy that attempts to “design out” any potential opportunities for a criminal act to take place (Parnaby, 2006). Again, this strategy assumes the offender conducts a cost-benefit analysis prior to acting (O'Shea, 2000). But in addition to these routine activity principles, CPTED can also be thought of as being rooted in notions of defensible space. Practitioners of CPTED argue that crime is inevitable unless property

owners assume responsibility for their safety and that of their belongings (Parnaby, 2006). Crimes are said to occur less frequently when a target outwardly appears to be guarded (Tijerino, 1998). Defensible space in CPTED contains physical cues signaling target guardianship and the presence of informal social control (Merry, 1981; Parnaby, 2006), while the mobilization of routine activity theory in CPTED practices can be conceptualized as the construction of design barriers that make it physically difficult or impossible to reach the target (O'Shea, 2000).

Although CPTED has not enjoyed particularly widespread academic support (although it *is* a relatively well-received and popular prevention tactic among individuals who believe crime rates to be increasing), it has received a greater level of empirical support than CCTV systems (Merry, 1981). Like CCTV, CPTED does not appear to produce any significant alterations of local perceptions of crime. However, its main effect appears to be in reducing actual instances of victimization (Minnery & Lim, 2005). But this limited success cannot be interpreted as support for routine activity theory and its central argument that crime can be prevented by reducing opportunities to offend in the physical environment. Merry (1981) attributes any successful crime prevention effects gained through physical design alterations, however minimal, to associated increases in informal social control. Anyone willing to pay for the construction of preventative architecture or landscaping is clearly interested in protecting his or her own property; it would therefore follow that these individuals are also willing to actively protect their property should offenders manage to bypass the CPTED design features (Merry, 1981). Therefore, the limited success of CPTED may not actually be due to target hardening at all, but rather to pre-existing informal social

control that may intensify once the decision has been made to actively invest in physical protection.

Again, researchers have had difficulty determining the precise relationship between both physical design cues and informal social control on one hand, and the reduction of crime rates and the belief that crime rates are rising on the other hand. These relationships do not appear to be simple or obvious; as noted above in the CPTED discussion, informal social control appears to have more influence on reducing recorded crime than the alteration of physical design features (Minnery & Lim, 2005). However, the opposite seems to be true in areas with low social cohesion (Rosenbaum, 1987). Generally speaking, different crime prevention programs experience varying degrees of success depending on neighbourhood characteristics (Hope, 1995; White & Sutton, 1995). Physical environment alterations corresponding to routine activity theory principles appear to be most influential in neighbourhoods characterized by low levels of social cohesion and a near-absence of informal social control. Such tactics appear to be less effective in areas where informal social control is already present and can be intensified through the union of community members (Greenberg & Rohe, 1984; Rosenbaum, 1987; Hope, 1995; Schweitzer, Kim, & Mackin, 1999). It also appears to be risky to attempt to “force” informal social control, social cohesion, and precautionary behaviours upon a community that is characterized by alienation and unfamiliarity; such activities can actually *increase* the perception that crime rates are rising among community members (Norris & Kaniasty, 1992). In the long term, this can in turn increase crime rates as informal social control may further deteriorate, causing the neighbourhood to spiral into decline and disorder (Skogan, 1986; Taylor & Gottfredson, 1986). Clearly, research into this domain is inconclusive and somewhat

contradictory. However, if a conclusion were to be drawn, it is that the success of crime prevention programs is largely dependent upon the social characteristics of the neighbourhood in which these programs are to be implemented. There is no “universal” prevention program, and the failure to recognize neighbourhood peculiarities can actually result in an *increase* in both crime rates and perceptions that crime rates are rising.

Alteration of the physical environment appears to be a sort of tactic of last resort to be put into place when informal social control mechanisms cannot be improved.

It is also interesting to note that crime prevention tactics rooted in routine activity theory principles attempt to address street-level opportunistic crime, even though the bulk of all recorded criminal activity is not of this type (Clarke, 1980; Croall, 2009). Conversely, individuals who believe that crime rates are rising tend to be most concerned about these random “stranger” crimes (Nabi & Sullivan, 2001). Taken together, these observations seem to suggest that crime prevention tactics based on routine activity theory tenets will have limited success in reducing officially recorded crime statistics, while targeting clients’ perceptions about crime more specifically. In this way, such crime prevention tactics can perhaps be seen as consumer “products” that exploit its clients’ highly negative beliefs about crime for financial gain and to legitimate the existence of such strategies (Parnaby, 2006). Crime prevention programs exclusively targeting architecture or landscaping have also been criticized for failing to address the root causes of crime; perhaps opportunities to offend in a particular area are removed by these programs, but the impulse to offend in another time and place cannot be extinguished without socially-based programs that target criminogenic living or social conditions (Clarke, 1980; Roncek, 1981; Taylor, Gottfredson, & Brower, 1984).

2.2.4 Perceptions of Crime and Demographics

While the aforementioned literature discusses the potential connections between perceptions of crime and the physical design characteristics of a neighbourhood, other literature posits that perceptions of crime are linked to the demographic variables that characterize the residents of a neighbourhood. For example, Moran, Skeggs, Tyrer, and Corteen (2003) report that neighbourhoods and districts catering to homosexual lifestyles are often characterized by the belief that crime is becoming increasingly violent and widespread. The authors argue homosexual individuals are often constructed as objects of fear, as many straight individuals are unfamiliar with the gay lifestyle. Homosexual individuals also expressed feeling particularly unsafe in their own “gay districts” in this study, as they are often afraid that violent outsiders will target the area in order to attack individuals they do not “approve of” (Moran et al., 2003). Such an example demonstrates the ways in which demographic variables can affect perceptions of crime across geographic space.

Gender, race, and age are commonly-studied demographic variables often linked to the perception that crime rates are rising (Madge, 1997; Lavrakas, 1982). Numerous studies have found that women generally perceive crime as being more violent and widespread than their male counterparts, despite the statistical findings that males are more commonly victimized than females (Brownlow, 2005).

Members of racialized minority groups appear to be doubly-disadvantaged when it comes to perceptions of crime, as they have not only been constructed as objects of fear in the mass media, but they also tend to be more likely to believe that crime is rampant than non-racialized individuals (Madge, 1997; Dixon & Linz, 2000; Gilliam et al., 2002). The belief that crime is highly violent and widespread spikes for many of these individuals in

particular situations and geographic areas (Lavrakas, 1982; Madge, 1997; Moran et al., 2003; Brownlow, 2005). Interestingly, although women, the elderly, and members of visible minorities all express the perception that crime is rampant in certain public spaces, each demographic group appears to believe that they are most likely to become the victim of a different criminal act. Women seem to be most afraid of sexually-motivated attacks, the elderly appear to be most wary of muggings, while members of racialized minority groups express concerns about becoming the victim of racially-motivated violence (Madge, 1997). To date, the literature has failed to adequately investigate the potential relationships between perceptions of crime and demographic variables, the built environment, and social cohesion, and has similarly ignored the potential interactions that may possibly between these factors.

2.3 Crime Mapping and Geographic Information Systems (GIS)

While the aforementioned literature examines the characteristics of individuals who perceive crime as being violent and widespread, other research has focused on the physical attributes of neighbourhoods in which these beliefs are manifested. Geographic information systems (GIS) are geographer-developed tools that are being used increasingly by social scientists to visually map patterns of crime (Vann & Garson, 2001). But similar to the literature examining the relationship between demographic characteristics of individuals and perceptions of crime levels, GIS used in isolation from qualitative data also risks oversimplification. Crime mapping techniques are useful for visually representing the macro-level spatial distribution of crime across a wide geographic area, but such information needs to be qualified in order to avoid glossing over demographic variables and social forces existing at the micro-level (Pain et al., 2006).

Increasingly, police departments and social scientists alike are using crime mapping techniques and technology developed in other disciplines to determine spatial patterns of recorded crime (Craglia, Haining, & Wiles, 2000; Vann & Garson, 2001; Brunsdon, Corcoran, & Higgs, 2007). In particular, geographers and social scientists have established a mutually-beneficial research relationship that supports the improvement of both crime mapping techniques and their practical and theoretical interpretations (Wilson, 2007). Hotspot mapping is quite popular in studies of crime patterns (Ratcliffe, 2002; Ratcliffe, 2004; Grubestic & Mack, 2008; Chainey, Thompson, & Uhlig, 2008, Thompson & Townsley, 2010). Hotspots are areas characterized by high crime rates. While the idea of identifying these hotspots seems universally-important among practitioners and researchers, there exists a wide variety of mapping techniques and methods to interpret these “high crime areas”. For example, two key geospatial and mapping researchers, Jerry Radcliffe and Michael McCullagh, have repeatedly noted the importance of temporal considerations in GIS data collection (Ratcliffe & McCullagh, 1998; Ratcliffe & McCullagh, 1999; Ratcliffe & McCullagh, 2001; Ratcliffe, 2002; Ratcliffe, 2004). In particular, these authors have noted the distinction between two subcategories of hotspot temporal patterns: the “hotpoint” and the “hotbed”. While hotpoints are small, geographic areas characterized by high crime rates that remain relatively stable over long periods of time, hotbeds are broader geographic areas that possess a number of smaller high crime zones that spike and relocate throughout the hotbed over time (Ratcliffe & McCullagh, 1999). Other research has found that different crimes have different spatiotemporal patterns; that is, certain types of crime may be concentrated in one area of the city and are most likely to occur during a particular time of day (Brown, 1982; Grubestic & Mack, 2008).

The importance of such spatiotemporal considerations becomes clear when one examines the practical uses of GIS by police forces and community groups. Crime and hotspot mapping techniques are constantly being refined in search of predictive value. The assumption is that crime patterns vary over time, but once they are identified and understood, crime patterns can be used to predict where hotspots are most likely to emerge in the future (Bowers, Johnson, & Pease, 2004). While research has yet to provide conclusive and convincing evidence of the efficacy of these predictive techniques, early research has suggested that these strategies are, in fact, capable of predicting where street-level crime hotspots are likely to arise (Chainey et al., 2008). The ability to identify and predict crime hotspots may provide police forces with useful information that can be used to refine policing tactics and to allocate services to areas where they are most needed (Thompson & Townsley, 2010). Community-based crime prevention programs are also making use of the crime maps made public by local police forces. This can be seen as the product of a neo-liberal agenda; community members living in high crime areas are encouraged to “help themselves” by using crime mapping data to recognize their neighbourhood’s alleged crime problem (Wallace, 2009). However, the danger here again is the lack of attention to temporal patterns and social factors conducive to crime present in that area. Making spatial crime rate information available to the public could possibly serve to increase the perception that crime rates are rising among residents of areas not previously believed to be high crime neighbourhoods, and could result in preventative responses targeted at altering the physical environment rather than at the underlying criminogenic social conditions (as discussed earlier in section 2.2.3).

Like all prevention strategies mentioned so far, the use of GIS-based crime prevention strategies have received a great deal of criticism. Targeted policing, a tactic in which police resources are focused on a crime hotspot and areas where hotspots are predicted to arise, has been criticized for not truly preventing crime, but rather merely displacing it to another time and place (Barr & Pease, 1990). Therefore, crime rates are not reduced; their spatial patterns are simply altered in response to blocked opportunities. Of course, the notion of blocking opportunities and preventing the offender from reaching the target are firmly based in routine activity theory (Cornish & Clarke, 1987). However, other research into the effects of target-hardening programs (such as targeted and hotspot policing) has found that displacement does not operate as simply and clearly as it does in theory. While such research concedes that displacement *is* an apparently unavoidable reality, certain types of crime are more opportunistic than others, and are therefore less frequently displaced (Fabrikant, 1979). Even when opportunistic crimes are effectively displaced, they often manifest in reduced numbers as the costs and limitations to the offender have increased (Repetto, 1976). It is also known that many offenders do not commit their crimes in their own neighbourhood, suggesting that these individuals seek out and take advantage of opportunities to offend (Greenberg, Rohe, & Williams, 1982; Andresen, 2006). These findings again suggest that displacement is likely to occur, at least to the degree to which potential offenders are able to identify and access other opportunities throughout space if the first opportunity is found to be blocked.

The idea that space-based crime prevention and control strategies affect crime patterns has troubling implications. In particular, knowledge that crime prevention programs displace certain types of crime to other spatiotemporal settings raises ethical questions; such

displacement or deflection of criminal activity may cause formerly “safe” neighbourhoods to experience rising crime rates, and the residents of these neighbourhoods to become victimized in ways they had not been before (Barr & Pease, 1990). In general, these findings suggest that criminological research should take crime prevention and control programs into account when attempting to understand the geospatial nature of criminal activity (Lowman, 1986).

On a similar note, crime prevention programs must also take into account the potential impact of local perceptions of crime that directly result from an increased police presence. While any police program is likely intended to quell beliefs that crime rates are rising, the opposite can occur. For example, the broken windows model of policing is intended to address minor physical signs of disorder (such as broken windows, graffiti, and litter) to prevent a spiral into further decline and increased rates of more serious crime. However, the increased presence of police officers that logically follows from the implementation of this policing practice has been found to actually increase the belief that crime rates are rising among local residents (Hinkle & Weisburd, 2008). As mentioned earlier, the perception that crime rates are increasing can cause social cohesion to deteriorate, which can itself contribute to the production of conditions most conducive to crime (Taylor & Gottfredson, 1986; Rosenbaum, 1987).

2.4 Literature Inconsistencies and Research Implications

A careful review of the available academic literature focusing on perceptions of crime, geospatial crime patterns, and preventative programs reveals a number of incongruities and debates that are currently unresolved. At first glance, there appears to be almost no academic consensus among this literature, save for a few specific contexts and

phenomena (for example, while the true nature of crime displacement is debatable, its mere existence is generally undeniable). This lack of consensus also exposes the complex nature of the relationship between both social and environmental factors in determining perceptions of crime and geospatial crime distributions. Any future attempt to conduct research in this domain should recognize the plurality of potential external forces and avoid oversimplification.

As mentioned earlier during the discussion of the literature positing a relationship between perceptions of crime and mass media, much of the available research to date has been conducted outside of the Canadian context. When taking into account the possibility that perceptions of crime are also related to neighbourhood social cohesion and a degree of knowledge about local crime trends, it is unreasonable to assume that the vast collection of single variable research conducted in a foreign context can be adequately combined and generalized to a Canadian city. Disagreement throughout the literature positing relationships between perceptions of crime and another single variable suggests that there is a need for Canadian research examining the potential interactions between perceptions of crime, levels of mass media consumption, knowledge of local crime trends, and demographic characteristics among individuals who believe crime rates to be increasing and those who are believed to be criminals.

Such research would also likely have important policy implications or, at the very least, would contribute to policy discussions. In particular, targeted policing techniques and private design alterations have emerged as popular crime prevention programs in recent years, but the actual efficacy of these programs in either reducing actual occurrences of crime or improving perceptions of crime is debatable (Ratcliffe, 2004; Minnery & Lim,

2005). As these programs are quite costly and, as has been claimed in increased police visibility, can actually serve to *increase* the belief that crime rates are increasing (Hinkle & Weisburd, 2008), more knowledge is needed in order to determine which variables, or which combination of variables, are related to the belief that crime rates are increasing. Only once such relationships become clear can crime prevention programs that effectively target crime rates and perceptions of crime be generated.

Literature discussing crime mapping techniques and hotspot interpretations, particularly work conducted by Ratcliffe (2002; 2004) and Ratcliffe and McCullagh (1998), has emphasized the importance of recognizing and observing the shifting spatial distributions of crime. Such research suggests that crime hotspots do not remain stationary indefinitely. And as this thesis seeks to determine whether perceptions of crime are related to knowledge about local crime rates, there is a possibility, if these two variables *are* correlated, that the spatial distribution of negative beliefs about crime will eventually move in parallel with relocating hotspots. It is important to note the existence of literature claiming that crime trends vary geographically over time, but this literature will, unfortunately, be outside the scope of this project. Due to time constraints making a longitudinal study unfeasible, the data will only be measured during a single time frame. The inability to examine spatio-temporal trends in both crime rates and perceptions of crime is a limitation of this thesis.

3.0 Methodology

3.1 Conceptualization and Context

The conceptualization of my project design was based on Adoni and Mane's (1984) social reality heuristics. Adoni and Mane (1984) identify three heuristics that can be used when researching and thinking about social reality. The first is objective social reality, which is the “common sense” view of reality an individual possesses. This reality may be questioned or defined in different ways by different individuals, and includes thoughts about the physically existing world with which an individual interacts. Objective social reality may be referred to in an empirical manner, as the world "out there" that is believed to exist regardless of subjective interpretations. The second is symbolic social reality, which refers to representations of objective social reality, as exemplified by the mass media and art. The last heuristic is referred to as subjective social reality, which is created by the individual social actor through the input of both objective and symbolic social realities. The objective, physically-observable characteristics of the world combine with claims being made by others about reality to influence an individual's own unique impression of the world. Therefore, subjective reality is what is most often thought of when conducting social constructionist research (Adoni & Mane, 1984, pp. 325-326).

The design of this study was intended to touch upon each of these social reality heuristics: objective social reality was to be addressed through field visits to particular areas in downtown Ottawa; symbolic social reality was to be addressed by the mass media articles and the official police statistics (as these are both claims being made about the "reality" of crime in Ottawa); and subjective social reality was to be explored through the responses of participants. Therefore, the field interviews were intended to hint at both objective and

subjective social realities; the responses of each participant were expected to be indicative of their own subjective realities, as interpretations of the physically existing "objective reality" they were observing. Adoni and Mane (1984) state that objective social reality and symbolic social reality are the inputs to subjective social reality. Therefore, it was hoped that by investigating all three, a more thorough analysis of how perceptions about the existence of crime shifts over geographic areas could be conducted.

3.2 Definition of Terms and Concepts

3.2.1 *Geographic Information Systems (GIS)*

Often referred-to in its abbreviated form, GIS is a set of software programs originating in the discipline of geography to analyze spatial data. In the past few decades, social scientists have increasingly recognized the spatial aspect of social data and the potential for GIS to act as a powerful analytical tool (Vann & Garson, 2001). While GIS has been increasing in popularity as a research tool among social scientists, Steinberg and Steinberg (2006) note that it is predominantly used either as a quantitative technique or as a visual aid. These authors also argue that it is entirely feasible to adapt qualitative data analysis tools (such as thematic analysis and grounded theory) to GIS, as is the intention of this thesis (Steinberg & Steinberg, 2006).

With regards to GIS, it is important to explain what I mean by the “spatial distribution of crime” or the “geography of crime”. These concepts refer to the identification of locations where crime occurs or is believed to occur. They refer to a broad view of the spaces deemed criminal or noncriminal. But this simple definition has another facet: I also focused on determining whether these geographies of crime are affected by the time of day. While not as complex as the spatiotemporal or “aoristic” analyses studied in particular by

Ratcliffe and McCullagh (1998; 1999; 2001; 2002; 2004), I attempted to maintain a degree of sensitivity to changes over time. As a result, I took half of my participants on the walking tour at night, and the other half during the day. The crime maps could not be plotted according to time of day because it was not possible to obtain this detailed information for all crime points on the OPS and OC maps, so sensitivity to time of day was restricted to the geographies of crime formed by participants. However, since my principle goal was to examine the interaction between the three levels of reality, and it is at the subjective level that the participants make sense of the objective and symbolic realities around them, I concluded it was valid to examine any similarities and differences in perceptions throughout the time of day.

3.2.2 Selected Types of Crime

It was my intention to give participants as much freedom in speaking about their beliefs about crime as possible; they were not discouraged from speaking about any form of crime that came to mind. Because the interviews were conducted in public settings at pre-determined locations outdoors, it was expected that street-level crimes might most immediately come to mind. However, if participants wished to speak about crimes they believed may have occurred behind closed doors in nearby businesses or homes, they were allowed to do so and their thoughts about these crimes were taken into consideration. A definition of “crime” was not provided to participants prior to or during the interviews. This was done because it was believed that a strict definition of “crime” may differ from the definition already held by each participant; it would be unproductive to explore participants’ geographies of crime while imposing a definition of this concept upon them. Asking participants to rethink this concept had the potential to cause them to think differently about

their own narrative about crime and space. Of course, it must also be acknowledged that taking participants on a walking tour of Ottawa streets is somewhat leading because the spatial context of the interview encourages participants to focus on street-level crime, which could serve to reproduce stereotypical images of where crime occurs and the type of person likely to commit crime.

Because this thesis required the construction of crime maps for analysis, it was necessary to determine the sort of crimes that would be included on these maps and which would be excluded. In general, any crimes associated with a discernible physical location were included, regardless of the type of crime. Data was obtained from the Ottawa Police Service (OPS) in order to construct a visual map of the city portraying areas where their officers have recorded criminal incidents. This information was provided as raw spatial data, and originally included 234 671 data points. However, this number was later reduced to 38 549 data points, for two reasons. First, a number of offence types (including traffic, other alarm, death, missing person, community policing, and proactive policing), were often not associated with criminal charges or were listed as false alarms. Second, improperly inputted points (for example, points that were given geographic coordinates at the zero/zero point and were therefore not plotted within the city) were removed from the sample. The coordinates provided by OPS were anonymized to 100 block addresses to protect confidentiality, and were inputted into the ArcGIS software without manipulation aside from the aforementioned removal of certain points. The OPS map was analyzed as a representation of the spaces constructed as criminal and non-criminal by the municipal police service through its

reporting of geospatial data. Only criminal acts were included; for example, parking tickets, false 911 calls made to police, or missed court dates¹ were not included.

Data about crimes reported in newspaper articles were selected from the print version of the *Ottawa Citizen* (OC), accessed through the Canadian Newsstand Major Dailies database and visually screened by title and by date (articles published in the print version of the newspaper between the dates of January 1st, 2011 and August 31st, 2011 were accessed). All titles published between these dates were read individually, and any articles that appeared to be about a criminal incident were read in their entirety. If the article was found to provide details about a criminal incident and it was possible to connect it to a geographic location, the location was converted into numerical geographical coordinates using Google Maps. These coordinates were inputted into a Microsoft Excel spreadsheet for later input into the mapping software. Specific addresses were not required as long as an approximate location could be determined. For example, it was considered acceptable to include a crime that occurred at the intersection of Elgin and Somerset Streets, or in the parking lot of the Carlingwood Shopping Centre as these locations can easily be pinpointed on a map. Each individual mention of a crime in an OC article was inputted into this spreadsheet; therefore, some single incidents were inputted multiple times. This was done in order to represent the amount of attention the incident received in the media; the more attention a single crime received in the newspaper, the more frequently its associated geographic location was pinpointed on the map. In many cases these articles anonymized locations to 100 block addresses (much like the data obtained from OPS), but the OC also commonly reported specific addresses. Therefore, micro-level comparisons between the OPS and newspaper

¹ Although a missed court date would potentially lead to a criminal charge of failing to appear, the focus of this study was on criminal acts committed against property or people, and not administrative criminal charges designed to protect the integrity of the criminal justice system.

maps were made at the block level rather than at specific addresses. Much like the OPS map, the OC map provides a visual representation of the OC's construction of criminal and non-criminal spaces in the city. In total, the newspaper coding resulted in 449 data point entries.

3.3 Sampling Methods and Sample Characteristics

Snowball sampling, also known as “chain-referral” sampling, involves asking each participant to provide a referral for another individual who may also be interested in participating in the research (Biernacki & Waldorf, 1981). The name “snowball sampling” therefore refers to this goal of reaching greater numbers of potential participants following an initial selection. This technique is most commonly used in order to reach elite, stigmatized, or hidden populations, although these characteristics do not describe the population that I sampled (Atkinson & Flint, 2001). I believed this sampling technique to be appropriate, however, because I had only a short period of time in which to access a wide range of participants, with whom I may have nothing in common aside from the fact that we are Ottawa residents. Snowball sampling allowed me to quickly access a wide variety of individuals who fit the eligibility criteria mentioned in the next section. The greatest advantage of this sampling method for this project were the rapid referrals I obtained; asking participants for referrals at the end of their interviews often provided a small list of potential participants more quickly than could likely have been obtained by waiting for individuals to respond to a recruitment poster.

Snowball sampling has been criticized for its potential to produce an unrepresentative sample. That is, snowball sampling is said to produce a sample that is non-generalizable because of its alleged tendency to access only a single social network (Biernacki & Waldorf, 1981). However, since I am looking at the construction of crime, my findings are not

intended to be generalized to the larger population. Therefore, this critique of snowball sampling is not particularly relevant to this thesis.

Biernacki and Waldorf (1981) identify five common (but surmountable) problems that may arise when attempting to use snowball sampling: (1) starting the referral chain; (2) verifying participant eligibility; (3) engaging respondents to participate; (4) controlling the type and number of chains; and (5) pacing and monitoring the chains and data quality (p. 144). Each of these potential problems will now be considered with regard to this thesis.

In order to start my referral chain, I asked an acquaintance to provide the initial referral. This provided a starting point for my chain, but ensured that the initial participant was not already known to me. Any interested individuals who contacted me as a result of this initial referral chain were provided with thorough information regarding my thesis and what could be expected so that they could make an informed decision whether to participate. Following their interviews (if he or she chose to proceed), I then asked each participant to contact potentially-interested acquaintances via e-mail and provide my contact information. When I was contacted by further individuals interested in participating, I once again took the opportunity to provide the detailed information necessary for making their decision to participate. I decided to interact with potential participants via e-mail in order to reduce the possibility that they may feel obligated to participate. I felt that e-mail (as opposed to over the phone or in person) provides potential participants with an opportunity to thoroughly examine the proposed research and to make a more informed choice as to whether to participate. This also relates to Biernacki and Waldorf's (1981) third common problem identified above. There was no compensation offered in exchange for participating; individuals were hoped to agree to participate strictly because they had a desire to do so.

The criteria for participation were quite open as there were few requirements to meet in order to be eligible. My criteria for participation were: participants must be over the age of 18; must have resided in Ottawa for a minimum of one year; and must not have a pre-existing background knowledge about crime beyond what an average Ottawa resident could be expected to possess. For example, I intended to exclude any participants with a degree in criminology or who work for the local mass media outlet providing the data for one of the crime maps. These criteria were selected in order to ensure that participants have a general geographic understanding of Ottawa and have lived in the city for the entire period selected for “symbolic social reality” analysis. That is, the participants must have resided in Ottawa from the beginning of January 2011 to the end of August 2011, as this is the time period during which the official crime statistics and local mass media articles were collected and mapped. To ensure this was the case, participants were considered eligible if they have lived in Ottawa for at least one year. I interviewed eight people: four females and four males.

In response to the final two common problems identified above, I started with only one chain and assessed the need to begin another upon completion of the initial interview and referral process. I did not want to start too many chains and needlessly bother an excessive number of potential participants. As it was anticipated that each participant may provide more than one referral, however, I did not want the chain to snowball out of control. Therefore, I began with a single chain and when it became clear that some participants only provided a single referral or no further referrals agreed to participate, I began another new chain using the same initial participant recruitment strategy outlined above.

3.4 Data Collection Procedures

3.4.1 *Structured Interviews*

Although I entered the structured interviews with a set of pre-determined questions (see Appendix C for the interview guide), additional questions were occasionally asked depending on the responses provided. For example, the first question asked at each location determines whether or not the participant has been to that place before. If the answer was no, the second question of the structured interview was then asked. If the answer was yes, two sub-questions were pre-prepared in order to explore the nature and extend of the participant's experience with that specific location. Therefore, even though the questions were all pre-prepared, a set of pre-prepared sub-questions were also ready in the event that more elaboration was needed. Aside from the pre-prepared sub-questions, basic prompting questions were asked if a participant's response was unclear. These prompting questions were not pre-prepared; questions such as, "what are your reasons for feeling this way?" or "could you please explain why you believe this to be true?" are examples of common prompting questions asked when needed. Pre-prepared questions, sub-questions, and spontaneous prompting questions provided a structured interview format that still provided a degree of flexibility if further information was needed. It was decided that this form of interview would be most effective in order to obtain rich data while maintaining the ability to compare this data across all eight locations and between all eight participants.

During the structured interviews (each individual was interviewed independently), participants were also given a clipboard in order to provide an assessment rating of each area. At each location, participants were asked to rate, on a Likert scale from one to ten (with ten being the highest), their judgment about the amount of crime that occurs in that

location. This Likert scale rating was necessary in order to compare participant perceptions of crime at specific locations to the OPS and OC maps mentioned earlier in this chapter. As such, the Likert scale ratings were not used for quantitative statistical analyses, but rather as a consistent means of identifying extremes and averages. Additionally, space was provided below each Likert scale (eight individual scales were provided, one for each location) for the participant to write any other opinions he or she would like to share. As the interviews were conducted primarily in public places (the “initial questions” identified in Appendix C were asked in a private room at the University of Ottawa), I recognized that participants may not feel comfortable vocalizing certain statements in public for fear of being overheard. For example, if a participant had an uneasy feeling about a certain individual present in the area and this person affected the participant’s assessment for that location, it is unlikely that the participant would feel comfortable admitting this aloud. Therefore, space below the Likert scale was provided to identify other issues the participants would like to divulge in a more discrete manner. It was hoped that this approach would enhance the participants’ sense of comfort and prompt them to willingly provide honest responses (Peak, 1990). The structured interviews were also audio-recorded and transcribed. The accompanying ethical considerations will be discussed at the end of this chapter, while the nature and implications of transcription will be addressed later in this section.

3.4.2 Interview Locations

Before each interview began, I met with each participant in a private setting at the University of Ottawa (most commonly the Louk Hulsman room at Thompson Residence or an empty office in Thompson Hall when available) in order to get acquainted and to set up the walking tour interview. I also verified (for a second time, as participants were screened

through personal communication via e-mail in advance) that the participant fit the eligibility criteria necessary in order to participate. It was intended that if a participant was found to no longer fit the eligibility criteria, he or she was to be informed that this was the case, and offered the opportunity to participate should he or she still wish to do so; however, the data would not be used in the final analysis. Fortunately, all individuals who chose to participate were found to be eligible to do so.

The interview itself was conducted “on-location”, meaning that participants were asked questions about a particular place while actually present at that location. The specific locations visited were determined using the OC map that was already plotted. Although it would have been ideal to use both the OPS and OC maps in order to plot a route, bureaucratic delays meant caused the OPS data to only be obtained well after the interviews were already completed. In the interest of time, it was decided to proceed with the interviews rather than await the OPS data. Although the OC map was not ready at this point either, the raw data used for its construction was examined to distinguish broad patterns. I then compared those patterns with a Google map of Ottawa. A total of eight locations were chosen based on the following criteria: proximity to the classroom setting where the initial interview took place (this was done in order to ensure the walking tour does not span an unfeasibly large area), crime hot spots identified in the OC raw data, and areas identified as having a low reported crime rate in the OC raw data.

Location Number	Approximate Address	Additional Notes
1	232 Laurier Ave.	South side near traffic median with tree
2	154 Daly Ave.	South side near alleyway
3	322 Rideau St.	Beside Shoppers Drug Mart
4	261 King Edward Ave.	At north end of abandoned buildings
5	Murray St. at Cumberland	Back garden at St. Brigid's Church
6	31 York St.	On centre parking median
7	Sussex Drive at Rideau St.	Courtyard near Metropolitan restaurant
8	550 Cumberland St.	Park outside of Tabaret Hall

Table 1. List of walking tour locations.

The choice to interview participants in the field was made following arguments made by both Sin (2003) and Herzog (2005) that the choice of interview location affects the sort of responses that may be elicited. As certain places or social contexts may have a unique meaning for different individuals, it is possible that placing the participant into a similar context will provide a richer description than could be provided if the participant were simply asked to “imagine” being in that same situation (Sin, 2003; Herzog, 2005). The on-location portion of the interview is particularly important to the conceptualization of this project as I am mobilizing Adoni and Mane’s (1984) social reality heuristics, as described in the first section of this chapter. I do not believe it is possible to explore the influence of the “objective social reality” input if participants must use their imaginations. I interpret the use of imagination or pictures as closer to the symbolic social reality heuristic. Additionally, half of the participants were interviewed at night while the other half was interviewed during the daylight hours. Interviewing in the field has accompanying ethical considerations that must be made; these will be discussed in detail at the end of this chapter.

3.4.3 Researcher Location Ratings

Following completion of the walking tour component, the physical characteristics of each interview location were rated in order to compare the locations to one another and to

more easily compare the location to participant assessments (see Appendix A for a detailed rating scale and criteria list). Each interview location was rated a total of six times: three separate times during the day, and three separate times at night. The scores for lighting levels, prospect, and maintenance were then averaged. The spatial use and homelessness ratings were not averaged as the numerical values indicated a description and not a scale (see Table C2 and Table C3).

During the data analysis phase, these researcher location ratings facilitated comparisons. For example, if participants stated that lighting levels made them uncomfortable at one location, it was possible to see if lighting levels rated to be comparable at other interview locations were perceived in the same way. Therefore, these researcher location ratings provided the opportunity to further examine how certain physical characteristics of space are interpreted differently depending on geographic location or their combination with other physical features.

Location Number	Lighting	Prospect	Maintenance	Spatial Use	Homeless
1	6	5	5	4	0
2	2	2	7	1	0
3	4	6	4	6	2
4	9	4	2	3	5
5	3	4	2	3	3
6	8	2	4	5	1
7	8	5	8	6	0
8	5	4	7	8	0

Table 2. Average researcher location ratings by location: day time.

Location Number	Lighting	Prospect	Maintenance	Spatial Use	Homeless
1	8	7	5	4	0
2	3	3	5	1	0
3	6	6	4	6	0
4	9	4	2	3	5
5	3	3	3	4	4
6	7	3	4	5	3
7	5	3	7	6	0
8	3	3	8	8	1

Table 3. Average researcher location ratings by location: night time.

Location Number	Lighting	Prospect	Maintenance
1	7.0	6.0	5.0
2	2.5	2.5	6.0
3	7.0	6.0	4.0
4	9.0	4.0	2.0
5	3.0	3.5	2.5
6	7.5	2.5	4.0
7	6.5	4.0	7.5
8	4.0	3.5	7.5

Table 4. Average researcher location ratings by location: overall averages.

Note. The “Spatial Use” and “Homeless” categories were not averaged as the numerical values indicated a description and not a scale (see Table C2 and Table C3).

3.4.4 Transcription

Participant interviews were audio recorded and transcribed into text immediately following their conclusion. It is important to note at this stage that although transcriptions are taken to be an unadulterated “window” into a participant’s reality, a transcription is in itself a text, and therefore, a co-production (Poland, 1995). It can be seen as yet another step in between the participant’s actual views about reality and my own interpretation of those realities. Furthermore, transcriptions are often claimed to be “verbatim”, but this is almost impossible to achieve. Choices made during the transcription process, such as where to insert punctuation, how to deal with inaudible portions, and whether to exclude the emotional value of speech, can all potentially lead to a misrepresentation of the participant (Poland,

1995). In an attempt to maintain as much accuracy as possible, commas were used to identify very brief pauses in speech (less than one second), ellipses were used to identify longer pauses in speech (more than one second), inaudible sections were identified by an ellipses followed by the word “inaudible” in parentheses, and speech that was difficult to hear on the recording and may have been misinterpreted was italicized and followed by a question mark in parentheses.

3.4.5 Geographic Information Systems (GIS) and Mapping

Two maps of Ottawa were constructed for comparison using GIS software: (1) the OPS map; and (2) the OC map. The maps were plotted using ArcGIS 10² and QGIS³ software, which allows for the flexible input and manipulation of spatial data. Nick Ochoski⁴ collaborated on this portion of this thesis, by performing the mapping processes and providing advice as to the most appropriate mapping approaches.

In order to input the OC data into the ArcGIS 10 software, it was arranged manually as described above in section 3.3.4. The OPS data was obtained in a form pre-prepared for GIS input, and the selection of crime types for inclusion on the OPS map was conducted within the ArcGIS 10 software. After the relevant crime type points were selected (either in advance in Excel the case of the OC map or within the ArcGIS 10 software in the case of the OPS map), the events were collected. This task weighted the crime events based on their occurrences at each location, by city block. Finally, a hot spot analysis was performed using the Getis-Ord Gi* statistic, which provided the z-scores identified in Table 5. (N. Ochoski, personal communication, April 23, 2012). It is important to point out that although z-scores are most commonly associated with quantitative research, they were used for a different

² ESRI 2012. ArcGIS Desktop: Release 10. Redlands, CA: Environmental Systems Research Institute.

³ Quantum GIS 2012. QGIS: Release 1.7.4-Wroclaw. Licensed under GNU General Public License.

⁴ B.A. Honors in Geomatics, and M.Sc. Geography (Geomatics and Remote Sensing).

purpose in this thesis. The z-scores generated by the GIS software were used to indicate general broad trends and areas of extremes, rather than for any statistical analyses. In this sense, the z-scores were used as a means of consistently comparing locations within a single map or across maps.

Location number	OPS map	OC map
1	-2.0 to -1.0	N/A
2	1.0 to >2.0	N/A
3	>2.0	1.0 to 2.0
4	>2.0	1.0 to 2.0
5	>2.0	1.0 to 2.0
6	>2.0	1.0 to 2.0
7	>2.0	1.0 to 2.0
8	1.0 to 2.0	N/A

Table 5. OPS map vs. OC map: z-scores by interview location.

Note. Z-scores were collected by the nearest score plotted within a one-city block radius of each location. If the stop was found to be equidistant to two different scores, a range was provided. “N/A” indicates that no recorded crimes were plotted within a one-city block radius of the location.

Because it was not possible to create a map of the participants’ ratings that could be easily compared to the OPS and OC maps, tables of their ratings by interview location were instead constructed (see Table 6 and Table 7). In order to visually compare these ratings with the OPS and OC maps, each interview location was plotted on all downtown maps (see Figure 1 and Figure 2) and identified by their respective location number. Therefore, these location numbers correspond to those found on Table 6 and Table 7 and were used to facilitate a comparison between the participant ratings and the OPS and OC maps.

Location number	Ratings				Average rating
	M1	M2	F1	F2	
1	3	4	1	4	3.00
2	4	2	1	3	2.50
3	6	1	8	4	4.75
4	5	8	8	8	7.25
5	6	8	9	7	7.50
6	7	8	7	6	7.00
7	6	2	6	5	4.75
8	2	2	1	4	2.25
City-wide	5	5	6	6	5.50
Participant average	4.88	4.38	5.13	5.13	4.88

Table 6. Participant ratings by location: day time interviewees.

Note. Ratings are listed individually by participant numbers, with M = Male and F = Female.

Location number	Ratings				Average rating
	M1	M2	F1	F2	
1	3	1	4	7	3.75
2	7 ^a	1	5	6	4.00
3	6	5	6	7	6.00
4	8	6	6	9	7.25
5	8	3	5	8	6.00
6	6	2	5	6	4.75
7	2	1	1	5	2.25
8	3	1	1	5	2.50
City-wide	7	6	4	5	5.50
Participant average	5.38	2.50	4.13	6.63	4.56

Table 7. Participant ratings by location: night time interviewees.

Note. Ratings are listed individually by participant numbers, with M = Male and F = Female.

^a The rating for stop #2 provided by participant M1 was given at a nearby, alternate location due to a construction-related road closure on the interview date.

It should also be noted that these maps were approached in a manner much differently than is typical for studies that use GIS data. Usually, GIS is used for deductive purposes and statistical analyses. For this thesis, the maps were viewed from an inductive approach, and were seen not as factual depictions, but as visual representations or “snapshots” of different narratives about the spatial distribution of crime in Ottawa.

3.5 Thematic Analysis

Thematic analysis was used in order to interpret the maps. While GIS is intended to allow for quantitative analyses of spatial data, Steinberg and Steinberg (2006) point out that

qualitative analytical tools are equally applicable to such data. Just as a “theme” would be identified in an interview transcript, a researcher can inductively distinguish spatial trends by applying thematic analysis to crime maps. This is a relatively new yet innovative approach to the interpretation of GIS outputs (Steinberg & Steinberg, 2006).

The inductive approach of such analytical techniques as thematic analysis and grounded theory are ideal for the interpretation of data for qualitative researchers interested in studying how narratives and symbolic meanings are constructed. As I planned on entering the research process as a learner rather than an expert, I attempted not to impose predetermined categories upon the data as would be done through a deductive method such as a typical correlational analysis using GIS (Ezzy, 2002a). This inductive approach is intended to allow for greater freedom and flexibility; rather than determining whether participants’ responses can be slotted into one category or another, the thematic analysis approach allows such categories to “emerge” from the data itself.

However, it is important to point out that this notion of allowing themes to “emerge” from the data, as is commonly asserted by researchers adopting a thematic analysis or grounded theory approach, is problematic. Again, the very word “emerge” implies that the data is self-interpreting and that themes occur naturally and under objective, value-free conditions (DeSantis & Ugarriza, 2000). This is, of course, not the case and entirely impossible. As both the transcripts and maps are representations of claims in themselves, and I was required to make decisions about the themes that are “emerging”, the data analysis stage is not neutral or value-free at all (Poland, 1995; DeSantis & Ugarriza, 2000). I decided which themes were present and which were worth reporting. For this reason, the choices I made during the data analysis process were documented in a personal codebook journal.

Weston et al. (2001) stress the importance of documenting the changes made to the codebook over time in order to facilitate a reciprocal relationship between the codes themselves and the phenomena being studied. Therefore, the codes must remain reflexive and subject to change as understanding of the text evolves (Weston et al., 2001). By documenting the decisions made in the data analysis process, I hoped to maintain a degree of personal reflexivity as well, while challenging the notion of objective, “emerging” themes.

Ryan and Bernard (2003) point out that researchers are more likely to explain the steps taken to analyze the data than they are to define what exactly is meant by the term “theme” or how it was identified. They explain twelve potential techniques that may be used by researchers to identify themes, including eight observational techniques and four manipulative techniques. Three of the twelve techniques identified by Ryan and Bernard (2003) were used in order to identify themes in the data analysis stage: (1) repetitions (which involves looking for words or ideas that frequently appear); (2) similarities and differences (involves making comparisons across data units, including between participants and between a participant’s responses at different interview locations, for example); and (3) missing data (involves examining what was left unsaid). These three approaches were chosen because, as stated by Ryan and Bernard (2003), “most of the techniques described are applicable to textual data, but only a few are appropriate for analyzing visual data” (p. 100). This is, of course, an important consideration for this thesis. In order to maintain the same analytic approach across all data to be interpreted, any theme identification techniques that could not be applied to visual data were excluded.

The steps involved in the coding process for thematic analysis are highly similar to those used by researchers conducting a grounded theory analysis (Ezzy, 2002a). However,

the grounded theory approach was deemed inappropriate for this thesis. Orthodox grounded theory is criticized for being nearly impossible to translate into practice, and for requiring a significant degree of *a priori* experience in a given area (Weston et al., 2001; Ezzy, 2002a).

When analyzing both the maps and the textual data, I attempted to combine the thematic analysis steps outlined by Ezzy (2002a) with the three aforementioned thematic identification techniques described by Ryan and Bernard (2003). These two approaches are complementary; while Ezzy (2002a) outlines the various stages and types of codes to be developed, Ryan and Bernard (2003) provide the tools necessary for identifying themes to begin with.

3.6 Ethical Considerations

The field work necessary for the completion of this thesis was performed only once it was approved by the Research Ethics Board at the University of Ottawa. Although this review certainly highlighted and addressed some of the ethical considerations that must be made before conducting the field work, it is insufficient to ensure that each unforeseen circumstance will be dealt with in an ethical manner (Johnson & Altheide, 2002).

In accordance with university standards, participants were presented with an informed consent form prior to data collection or on-location interviewing. This meant informing the interviewees, in detail, about the goals of the research, how their accounts were to be used, any potential dangers or risks they may be presented with, how their identities will be protected, and their rights as a research participant (Grbich, 2004).

Participants were informed prior to data collection that they have absolutely no requirement to participate, answer every question, visit each location, or continue to participate. This right was made clear even at the recruitment stage; participants were informed that there was

absolutely no pressure to even respond via e-mail if they did not wish to participate. If a participant wished to withdraw from the study, they would also have the right to have their own data removed from the study and destroyed. Furthermore, their right to withdraw did not vanish once the interview was completed. As each participant was provided with contact information, they reserved the right to contact me or my thesis supervisor at any point to have their data removed and destroyed.

In order to protect the identities of my participants and ensure confidentiality, they were given pseudonyms at the transcription stage. Although they were required to sign the informed consent forms, their pseudonyms were the names used on all other materials. Numerical codes were used on the Likert scale forms used during the walking tours in order to associate the forms with a recording while keeping responses anonymous (the codes used “D” or “N” to specify whether an interview was conducted during the day or night respectively, a “F” or “M” was used to specify whether the participant was female or male respectively, and a number between 1 and 8 was used to identify the interview recording number). The audio tapes and transcripts will be kept under lock and key for approximately five years, and the participants were made aware of this in advance. Transcripts are not attached to this thesis manuscript, and any other potentially identifying information provided during the interviews was removed during the transcription phase.

As I conducted part of each interview in the field, certain additional risks to participants could have arisen. In addition to the potential emotional and psychological dangers that may necessarily accompany discussions about crime and victimization (although I did not directly ask about past personal victimization, participants may have voluntarily chosen to discuss this topic or may have been reminded about a traumatic past

personal experience while in the field), participants could also have been at physical risk. Participants were informed at the recruitment stage that this research involved walking in a public space, and each participant was shown a map of the locations to be visited in advance. The walking tour map was used in order to allow participants the opportunity to identify any areas they were not personally comfortable visiting or assessing. If a participant wished to avoid a particular interview location, that spot would be excluded entirely and a suitable bypass route would be formulated with the participant's input (although this did not actually occur, participants were informed of this option). As half of the participants were interviewed at night, these participants were asked at the recruitment stage if they felt comfortable doing so. If not, the interview could be conducted during the day.

In the event that a discussion or location was found to be especially distressing to the participant ("distress" was to be determined through physical body language indicators such as crying, anger, shaking, nervousness, or an explicit statement that he or she is uncomfortable), the participant would be asked if he or she would like to continue with the interview and would be given time to regain composure. I also kept with me a list of local counseling services that could be provided to the participant if desired.

In addition to psychological and emotional considerations, walking in public and being present in public space itself presents physical risks to both the participant and researcher (Lee-Treweek & Linkogle, 2000). However, these risks were not expected to be any greater than those that would be faced on a daily basis by an average Ottawa resident travelling through public areas. Once I had decided upon the interview route, I personally walked between them multiple times in order to determine the safest, quickest, and most suitable route between each point. The best route was chosen based on the following

criteria: minimal pedestrian and vehicular traffic, moderate to high maintenance standards (i.e., even ground, no ongoing construction zones, few obstacles), the presence of cross walks, the greatest amount of walking space (i.e., wider sidewalks), and the use of areas intended for pedestrian traffic (i.e., avoiding alleys and travelling through buildings). Each interview location was also visited in advance to ensure that a reasonably safe space was available where the interview may be conducted.

4.0 Data Analysis and Discussion

This chapter provides an overview of my findings across all three data sources. I will begin with a summary and comparison of the geographies of crime presented by the Ottawa Police Service, the *Ottawa Citizen*, and the participants. Then, I will continue with a description and comparison of the two maps (Ottawa Police Service and *Ottawa Citizen*), followed by an overview of the major themes that arose throughout the participant interviews. I will conclude this chapter with a summary and outline of the major findings of this thesis.

4.1 Geographies of Crime: An Overview

Through an examination of the ratings and qualitative responses provided by participants, a picture of their geography of crime in Ottawa begins to emerge. This geography of crime can be described at both the micro and macro level: at the micro level, participants made note of certain physical characteristics that consistently resulted in high ratings when present; at the macro level, participants appeared to base their assessments (at least in part) on a location's geographic position relative to areas already believed to be criminal spaces.

Participants frequently explained that they believed criminal spaces were characterized at the micro-level by poor maintenance and a lack of cleanliness, large numbers of homeless individuals, few other people within visible distance, little to no commercial space, close geographic proximity to other areas of the city believed to be criminal, and poor lighting. Despite providing numerous reasons for their assessments at each location, it appears as though the most consistent and defining features of criminal

spaces for participants were that these spaces were dirty, lacked general upkeep and maintenance, and possessed a visible homeless population.

When examined at a macro level, it appears as though participants believed that criminal spaces cluster closely together; rarely is there a single highly criminal space that exists without other highly criminal spaces nearby. Places located far away from areas already believed to be highly criminal are thought to be substantially safer. This suggests that participants use a sort of pre-constructed cognitive map of the city when determining which places they believe to be criminal; not only do participants examine the micro-level characteristics of a location (such as its cleanliness and maintenance) when making judgments about its level of criminality, they also take into consideration its geographic proximity to other areas of the city with a known criminal or negative reputation.

With these micro- and macro-level characteristics of criminal spaces in mind, it appears as though the participants constructed a geography of crime in the city that locates the most highly criminal areas around the Byward Market, the homeless shelters along Murray Street and at its intersection at King Edward Drive, the entire Vanier neighbourhood, and the nightclub district in the area of York and George Streets. Non-criminal spaces were, for the most part, found as far away from these areas as possible. The University of Ottawa Campus, the Sandy Hill residential neighbourhood in the area east of the university, and the areas surrounding the upscale hotels and government buildings to the southwest of the Byward Market were all seen as low crime areas.

The OPS and OC maps portray their respective geographies of crime in Ottawa in a very similar way, with only a few differences. On both maps, the Byward Market is identified as an extremely criminal space, particularly the area extending northeast from the

Rideau Centre shopping mall to the intersection of Murray Street and King Edward Avenue. The residential areas and university campus space surrounding the Byward Market is, for the most part, shown to be low crime areas on both maps.

The OPS and OC maps have two important differences between their geographies of crime. First, the OC map has two major crime hotspots: one in the aforementioned area of the Byward Market, and the other at the OPS HQ on Elgin Street. The OPS map shares the OC map's depiction of the Byward Market, but does not identify the OPS HQ as a highly criminal space. This is an important distinction considering that the OC map portrays the OPS HQ as the single most criminal space in the entire city. The second distinction between the OPS and OC maps' geographies of crime is that they differ in terms of their portrayal of the boundaries between high and low crime areas. The OPS map shows an extremely abrupt transition zone that occurs over approximately 1-2 city blocks. The OC map, on the other hand, portrays transition zones between high and low crime areas that are less clear and occur over the space of approximately 4-6 city blocks.

A comparison across all three sources suggests that they agree that the Byward Market area is a highly criminal space, from the Rideau Centre shopping mall and the nearby York and George Street nightclub district to the homeless shelters in the Murray Street and King Edward Avenue area. The OPS map and the participants identify the Byward Market as the most criminal space in the city, while this area is second to the OPS HQ on the OC map in terms of its crime rate. All three sources also concur when it comes to the clustering of high crime areas. Each of the three sources identify high crime areas that are usually within extremely close proximity to other high crime areas, and in general, crime rates decrease as the geographic distance away from such high crime areas increases. The result is

that the residential, university campus, and government building areas surrounding the Byward Market are identified as low crime areas by all three sources. It can be said, therefore, that all three sources share the macro-level geography of crime characteristic that the criminality of a space depends on its geographic location relative to other criminal spaces in the city.

Where the participants' geography of crime differs from those of the OPS and OC maps appears to be at the micro-level. In particular, the geographies of crime portrayed by the OPS and OC maps had much less regard for the cleanliness and maintenance of a space than did the participants. This is made particularly evident at location #7, which is still located within extremely close proximity to the Byward Market but is substantially cleaner, newer, and better maintained than most nearby areas. Both the OPS and OC maps identified location #7 as an extremely criminal space, yet the participants saw it as a very low crime space. This suggests that the aesthetics of a place were more influential in the construction of the participants' geography of crime than its proximity to other criminal spaces, while the reverse was true for the geographies of crime portrayed by both the OPS and OC maps.

4.2 Crime Maps

4.2.1 Introduction

Data was obtained from the Ottawa Police Service (OPS) in order to construct a visual map of the city portraying areas where their officers have recorded criminal incidents. This information was provided as raw spatial data, and originally included 234 671 data points. However, this number was later reduced to 38 549 data points, for two reasons. First, a number of offence types (including traffic, other alarm, death, missing person, community policing, and proactive policing), were often not associated with criminal charges

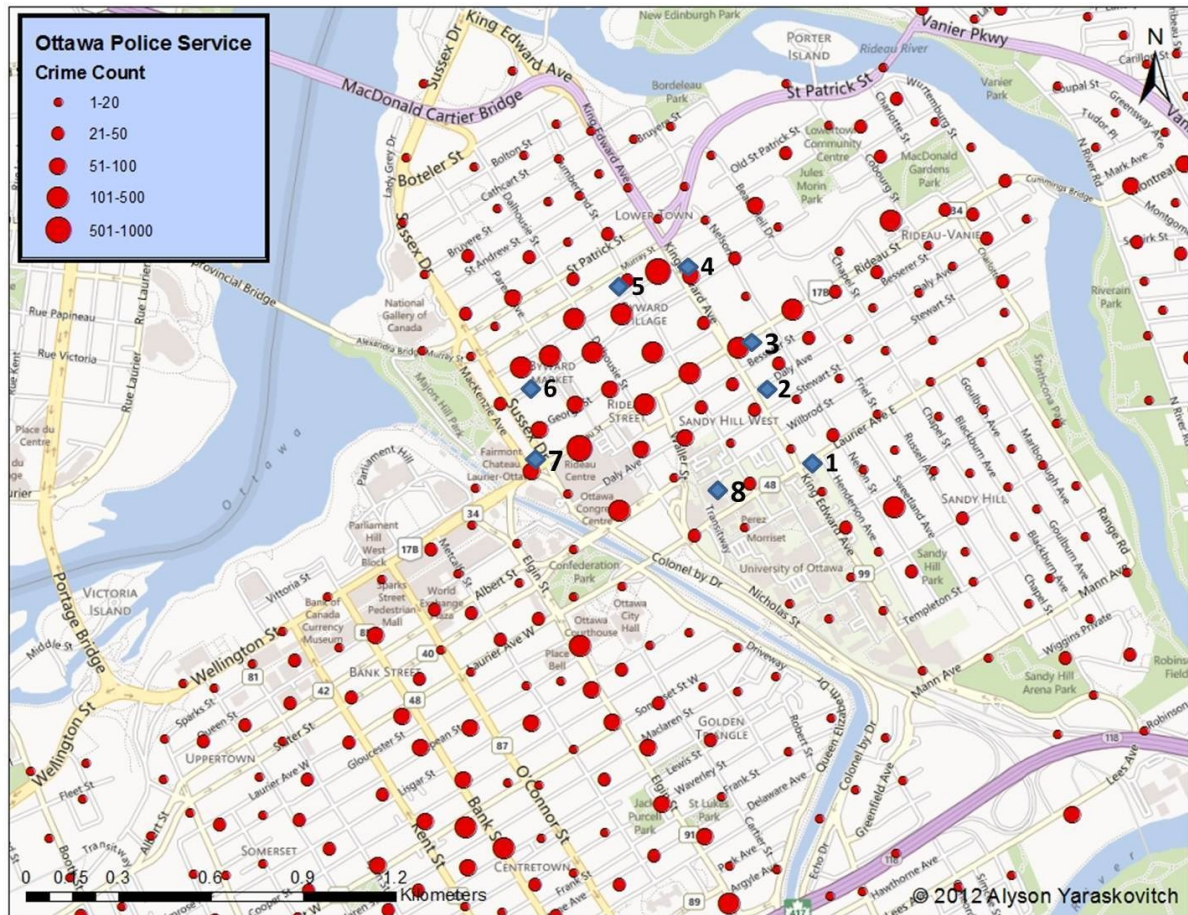


Figure 1. Ottawa Police Service collected crime count map of downtown Ottawa.

or were listed as false alarms. Second, improperly inputted points (for example, points that were given geographic coordinates at the zero/zero point and were therefore not plotted within the city) were removed from the sample. The coordinates provided by OPS were anonymized to 100 block addresses, and were inputted into the ArcGIS software without manipulation aside from the aforementioned removal of certain points. The OPS map was analysed as a representation of the spaces constructed as criminal and non-criminal by the municipal police service through its reporting of geospatial data.

Data about crimes reported in newspaper articles were selected from the print version of the *Ottawa Citizen* (OC), as made available through the Canadian Newsstand Major Dailies online database accessed through the uOttawa library. Articles that mentioned a

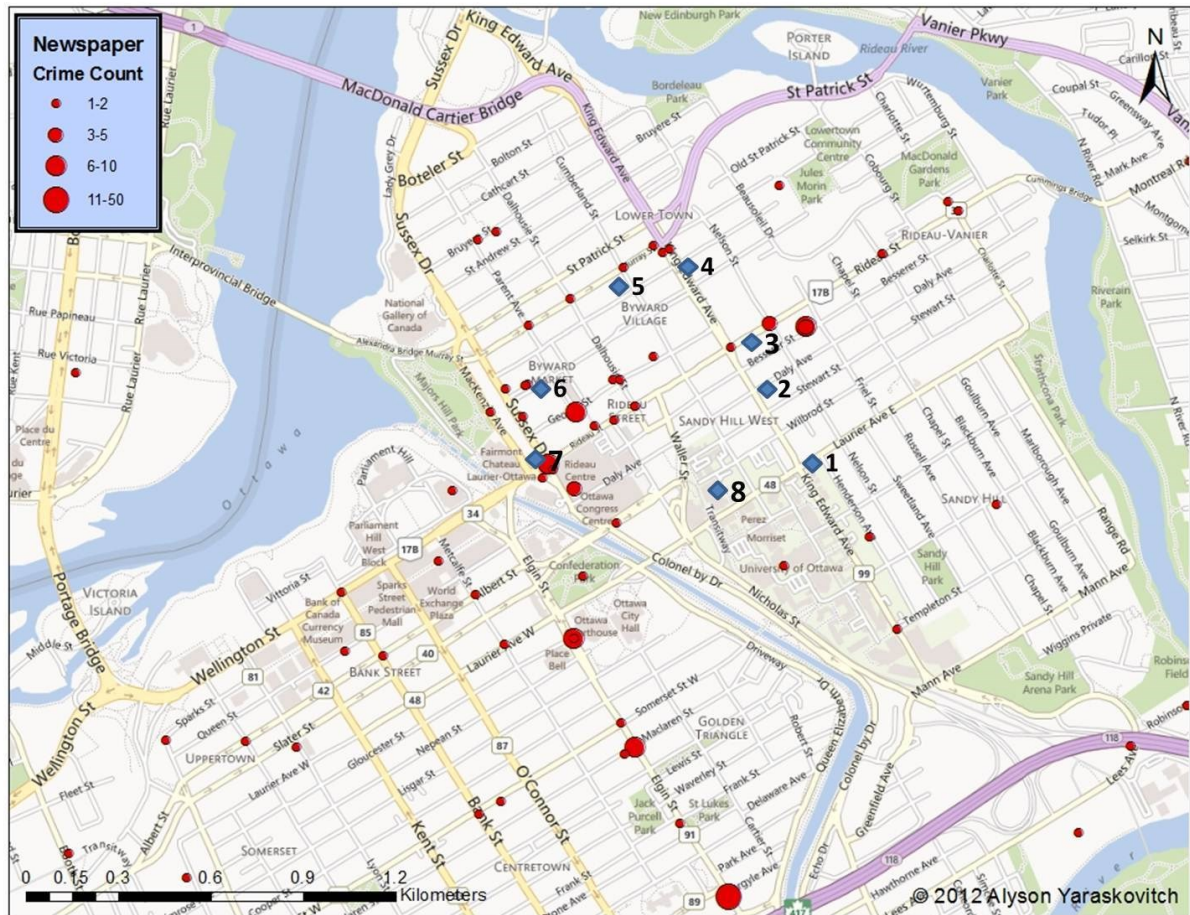


Figure 2. *Ottawa Citizen* collected crime count map of downtown Ottawa.

criminal act in their titles were individually examined and, if the article associated a criminal incident with a geographic location, the geographic coordinates were recorded. A total of 449 data points were obtained this way and then plotted on the newspaper map. In many cases these articles anonymized locations to 100 block addresses (much like the data obtained from OPS), but the *Ottawa Citizen* also commonly reported specific addresses. Therefore, micro-level comparisons between the OPS and newspaper maps were made at the block level rather than at specific addresses. Much like the OPS map, the OC map provides a visual representation of the *Ottawa Citizen's* construction of criminal and non-criminal spaces in the city.

4.2.2 Map Comparison: Similarities

The OPS map presents a particular construction of the geography of crime in the city of Ottawa. The area of the highest crime is the downtown core⁵ in general, and the Byward Market⁶ specifically. Within the Byward Market, the Rideau Centre shopping mall along with the York and George Street bar districts are portrayed as the extreme centre of this crime hotspot where more crimes are said to occur than in any other single specific geographic location in the city. Although the Byward Market is portrayed as a highly criminal space overall when viewed at the macro level, there exists a degree of variation throughout this neighbourhood when examined more closely at the micro level. In other words, while the entire Byward Market is constructed as a more highly criminal space when compared to the rest of the city, recorded crimes tend to cluster within individual blocks and properties within the neighbourhood. The OPS map constructs the areas where dense commercial spaces converge with areas with a high concentration of bars as the most highly criminal spaces of all. The area stretching from Clarence Street to the north, George Street to the south, Sussex Drive to the west, and Cumberland Street to the east is home to approximately 17 bars, 72 restaurants, and 90 retail stores. In the summer, approximately 260 outdoor farmer and artisan stands can also be found within this area (ByWard Market Business Improvement Area, 2012).

The OPS map also locates a high number of criminal occurrences along public transit routes. Crimes cluster around the two major bus stations servicing the Rideau Centre

⁵ The area of Ottawa commonly considered to be the “downtown core” is the geographic area that includes the Lowertown, Byward Market, Sandy Hill, Golden Triangle, and Centretown neighbourhoods. Therefore, this area could be said to stretch approximately from the Rideau River to the east, the Ottawa River to the north, Bronson Avenue to the west, and the Queensway to the south (LAGGISS, 2012b).

⁶ The Byward Market is a historic neighbourhood in downtown Ottawa that is bordered by the Rideau River to the north, the Ottawa River to the west, Cumberland Street to the east, and the Rideau Canal and Daly Avenue to the south. The neighbourhood is known as a busy nightlife and shopping district that is popular among Ottawa residents and tourists alike (LAGGISS, 2012a).

shopping mall (i.e., the Rideau Street and the Mackenzie King Bridge stops; see Figure 1 and Figure 2) and extend eastward on Rideau Street along the primary bus route used by many local service city buses. All of the areas identified by the OPS map as having high numbers of recorded criminal incidents are areas of very high pedestrian, vehicle, and public transit traffic. However, this is most pronounced at the Rideau Centre shopping mall and its surrounding exterior space (see Figure 1). This shopping centre is located at the south east corner of the Byward Market; it is used by many people not only for its intended commercial purpose, but also as a route to access other areas of the Byward Market. The shopping centre also has public transit stops at opposite ends of the building and the most substantial amount of indoor parking anywhere in the Byward Market area (OC Transpo, 2012).

The shopping centre complex is located at the south east corner of the Byward Market. There are two public transit stops immediately adjacent to the complex. The Mackenzie King Bridge stop at the south end services 47 buses (including six 90-series buses, which are the city's rapid-transit routes and are among the most frequently used), all of which travel along the OC Transpo Transitway. The Rideau Street stop at the north end is used by 12 buses, four of which are 90-series rapid transit buses. There are also indoor and outdoor parking lots that service approximately 1700 vehicles, so the shopping centre is also a traffic hub for the area. It is also the main bus stop for those people who wish to visit the Market area (OC Transpo, 2012a). People getting off at the Mackenzie King Bridge (which itself is located along the OC Transpo Transitway⁷) often walk through the complex to access the Market.

⁷ The OC Transpo Transitway is a rapid transit route that was built with the intention of reducing transit times by keeping most of the route free of non-bus traffic. Although most of the Transitway is entirely isolated from Ottawa streets, they overlap in the downtown core where dedicated lanes keep bus traffic separate. Where this overlap occurs, the Transitway stretches from the intersection of the Mackenzie King Bridge and Waller Street

Like the OPS map, the OC map locates the highest concentration of recorded crime within the downtown core of the city, especially within the Byward Market area. Again, the area surrounding the Rideau Centre shopping mall is presented as particularly high crime, as are the aforementioned public transit routes located along Rideau Street and the OC Transpo Transitway immediately to the south of the shopping centre. When compared visually, it also becomes clear that the OPS map and OC map are quite similar in terms of the geographic shape of the main hotspot around the Byward Market area. On both maps, the main hotspot is presented as encompassing the Rideau Centre entirely, then extending to the northeast diagonally across the space of approximately five city blocks. As such, both maps indicate there is a crime hotspot enveloping the entire area from the Rideau Centre to the corner of Murray Street and King Edward Avenue in an approximately oval shape. On both maps, the surrounding areas outside of this primary hotspot have a much lower number of recorded crimes that are somewhat evenly and sparsely distributed throughout when compared to the Byward Market hotspot. In fact, the areas surrounding the Byward Market hotspot are quite comparable to the rest of the city in terms of crime density, which is surprising considering its close proximity to an area portrayed as having such high level crimes by both maps. Therefore, when general trends are examined at the macro level, both the OPS and OC maps are highly similar in their constructions of the geography of crime.

Although the OPS and OC maps share some highly noticeably common trends, there are also a number of differences between the two maps that become apparent when they are examined more closely. First, it is clear that the OPS and OC maps differ in terms of the “types” of places where high amounts of crime are said to exist. Second, the OPS map has

to the east to the intersection of Albert Street and Empress Avenue to the West. The Transitway also extends down both Slater and Albert Streets throughout the downtown core between these intersections, as both streets are one-way (in opposing directions) (OC Transpo, 2012b).

only one clearly defined main hotspot, while the OC map has two. Third, the OPS and OC maps can be distinguished in terms of the way they represent the boundaries between criminal and non-criminal spaces.

4.2.3 Types of Criminal Spaces

Considering where the media obtains its information regarding criminal incidents, it is perhaps unsurprising that the OPS and OC maps are so similar when it comes to the location of their primary crime hotspots. Sheley and Ashkins (1981) note that media reporters rely primarily on police wire services, which selectively provide police information on only certain types of cases, such as those that are sensational, those that represent current police interests, or those in which reporters have previously expressed interest (p. 493). Furthermore, Chermak (1995) argues that police services are actively involved in the construction of crime news as the service itself has a vested interest in portraying itself in a positive light. Chermak (1995) also explains that the relationship between the media and police services is in a constant state of evolution, as external forces influence both how the police services wish to present themselves and how the media must operate in order to remain competitive with each other. Therefore, in many cases, police wire services represent an extremely cheap and easily accessible information source that cuts costs to news media corporations and allows for news stories to publicly “break” more quickly (p. 21). Because the media relies so heavily on the information selectively provided by municipal police over their wire services, it is unsurprising that the OC map so closely resembles the OPS map.

While the OPS and OC maps both identify the Byward Market as a high crime area, it is clear that there are differences between these two constructions in terms of the specific types of spaces within their respective hotspots they delineate as high crime. The first

difference is that the OC map identifies the homeless shelters in the Murray Street and King Edward Avenue area (within the Byward Market) as being a more isolated high crime area that the OPS map does. Both the OPS and OC map identify this area as having extremely high crime rates ($z > 2.0$ on both maps); however, it is each map's portrayal of the surrounding blocks that makes this place either indistinguishable (in the case of the OPS map) or highly noticeable (as it is on the OC map). While these homeless shelters are not presented as being the most highly criminal points in the Byward Market hotspot in terms of the number of recorded crimes that occur there (while this entire hotspot is made up of places where $z > 2.0$, recorded crime counts show that crimes are much more frequent in the Rideau Centre and York and George Street bar district areas), it is interesting to note that these locations are identified to the exclusion of all other places with a three-to-four block radius in almost every direction on the OC map. The result is that the OC hotspot (which was described earlier as encompassing the broad area from the Rideau Centre to the corner of Murray Street and King Edward Avenue in an oval-like shape when viewed at the macro level) takes on a vaguer shape when examined at the micro level and this particular intersection stands out visually on the OC map as a high crime place.

By comparison, the OPS map depicts the aforementioned Murray Street and King Edward Avenue area as within the main Byward Market hotspot; it is not clearly distinguishable from the surrounding blocks. On the OPS map, the area surrounding this intersection certainly does possess an extremely high level of crime when compared to the overall city-wide average, but these crime levels do not appear to be exceptionally high at the micro-level where the surrounding blocks within the hotspot all possess similarly elevated

levels. Therefore, crime rates in the area of the Murray Street and King Edward Avenue intersection are comparable to those of the surrounding 2-3 blocks.

Research into homeless populations and their involvement in crime has been undertaken from one of three perspectives according to DeLisi (2000): the homeless as responsible for their own fate; the homeless as victims of broader social forces and inequalities; and the homeless as the victims of unnecessary police harassment. DeLisi (2000) notes that there are a number of misconceptions among the public about homeless individuals. For example, he notes that it is commonly believed that homeless individuals are predominantly mentally ill and criminally dangerous. However, DeLisi argues that although homeless individuals are incarcerated at a disproportional rate in the USA, they tend to be imprisoned for offences related to survival or life on the street (such as theft, disobeying public ordinances, public intoxication etc.) and homeless individuals are no more likely than non-homeless individuals to be incarcerated for a violent offence. Fitzpatrick, La Gory, and Ritchey (1993) further argue that homelessness is not only a form of victimization in itself, but that homeless individuals are victimized at a rate substantially higher than non-homeless or impoverished individuals. This point is reinforced by the arguments of Barak and Bohm (1989), who note that because homeless individuals are much more commonly the victims of criminal acts than the perpetrators, they do not represent a serious or dangerous threat to society.

Cohen (1972) argued that when the media reports stories about deviance, they often mark the beginning of what he called a deviancy amplification spiral. News media reports about crime are often presented in a way that suggests that these are simply the cases we have found out about, and that the problem is actually much more widespread than we are

aware of. Details of the case or statistical evidence about similar incidents that would reduce the sensational value of the story are often withheld in these media reports, which Cohen argues has the effect of feeding public consumption as people become concerned about keeping themselves informed. This increased attention can lead to glamorization or desensitization, which can actually increase the deviant behaviour. In the final stage of Cohen's deviancy amplification spiral, law enforcement officials devote more resources towards addressing the apparent problem in order to please the public while judges and legislators may push for harsher sentences to appear as though they are being proactive in the face the amplified problem. With the aforementioned research into misconceptions about homeless criminality in mind, Cohen's concept of a deviancy amplification spiral provides insight into how these misconceptions may shape recorded crime levels. If crimes committed by homeless individuals are commonly reported in the news (and the concentration of reported crime centred around the Shepherds of Good Hope homeless shelter indicates that this was the case), the later stage of the deviancy amplification spiral where law enforcement officials focus resources on the supposed problem could potentially explain why the OPS map also shows an intense crime hotspot at this same location.

It is also interesting to note that the area around the Murray Street and King Edward Avenue intersection is markedly different in terms of use and appearance when compared to the area extending from the Rideau Centre to York Street. While the latter area is characterized by public transit, high concentrations of commercial space and nightclubs, and high-end apartment and condominium complexes, the former area is more typified by homeless shelters, abandoned buildings, older detached housing, and a few nightclubs to the west end (although they are a number of blocks west along Murray Street, away from the

King Edward Avenue intersection). Therefore, the OC map could be regarded as being more diverse in terms of the “types” of places identified as high crime areas. While both the OPS and OC map share their construction of these types of places as high crime areas, the distinction between these two maps lies in their representations of the geographic space physically separating these areas. On the OC map, the section of the Byward Market characterized by dense commercial and nightlife space (the area extending from the Rideau Centre to York Street) is distinctly separate from the section of the Byward Market where homeless shelters and abandoned buildings are dominant (the area surrounding the Murray Street and King Edward Avenue intersection). In the blocks between these two points, the OC map show little to no crime whatsoever.

In contrast, the OPS map shows crime levels that remain relatively static across this same area; between these two points, crime levels are depicted as very high when compared to the city-wide average. This finding is interesting because according to the OPS map, the geographic area physically linking two distinct “types” of high crime spaces to one another possesses elevated levels of crime compared to areas of similar use that are found outside of the path connecting two high crime places. This point is further illustrated by the fact that although the area surrounding the Murray Street and King Edwards Avenue intersection is characterized by residential space, abandoned buildings, and small amounts of commercial space on all sides, the entire surrounding area is depicted as having very low levels of crime throughout except for the few blocks linking the Murray Street and King Edward Avenue intersection to the York and George Street bar district. In short, the OPS map identifies as having high levels of crime not only certain “types” of places in terms of their functional use,

but also the liminal spaces that connect one high crime area to another. As mentioned above, this is a finding that is not replicated on the OC map.

Through their research into crime hotspots and urban planning, Brantingham and Brantingham (1995) have thoroughly examined the various relationships between crime hotspots, fear hotspots, areas where both fear and crime overlap, and the edges and pathways between all of these types of places. They note that not only do crime rates cluster around places that are highly important to the lives of both victims and offenders (referred to by the authors as “nodes”), but they also cluster along the principal “pathways” (or connecting routes) in between these significant locations. These also tend to be very high traffic areas of shared importance to thousands of people. Crimes also often cluster at places referred to by Brantingham and Brantingham (1995) as “edges”, or area where distinctive features of one area overlap with those of another. Therefore, while much research has been dedicated to identifying the types of spaces where crimes tend to concentrate (see, for example, McCord & Ratcliffe, 2009; Stucky & Ottensmann, 2009; Franzini, O’Brien Caughy, Murray Nettles & O’Campo, 2008), the research conducted by Brantingham and Brantingham (1995) recognizes that criminal activity is not limited to single geographic locations, but can also disperse over the space connecting one highly criminal place to another. This phenomenon was clearly observed on the OPS map on the stretch of land connecting the Murray Street and King Edward Avenue intersection to the York and George Street bar district. The OPS map indicates that across the city blocks in between these two areas where recorded crime rates are extremely high ($z > 2.0$), crime rates are also elevated well above the city-wide average. This research can also potentially contribute to an understanding of why recorded crime tends to cluster along public transit routes on both the OPS and OC maps; as thousands

of people share a reliance on public transportation in Ottawa, these routes and stops can be thought of as the pathways that connect nodes within the Byward Market to nodes elsewhere in the city. With this application of Brantingham and Brantingham's (1995) research, it would be expected that recorded crime rates cluster along public transit routes leading to and away from such a high crime area.

4.2.4 Recorded Crime Hotspot Comparison

A second major difference between the OPS and OC maps lies in the number of major crime hotspots present on each map. As mentioned earlier, the OPS map has a single major crime hotspot located in the area of the Byward Market extending northeast from the Rideau Centre to the intersection of Murray Street and King Edward Avenue. No other areas on the OPS map are identified as being as highly criminal; although there is some degree of variation in crime density throughout the city, the Byward Market area is the only area that stands out as having an extremely high amount of reported crime throughout ($z > 2.0$).

In contrast, the OC map shows two areas of the city that stand out as having abnormally high levels of reported crime. Much like the OPS map, the OC map identifies the Byward Market area as a highly criminal space. However, the OC map also shows an extremely high level of crime at the Ottawa Police Service Headquarters on Elgin Street (OPS HQ). In fact, the numerical count of reported incidents at this location far exceeds the count for any other single location on the OC map (the OPS HQ had a count of 51 reported criminal incidents while the second highest for a single location was 11). Therefore, while the Byward Market hotspot may be more readily identifiable on the OC map due to its spread over a much wider geographic area, the OPS HQ must not be overlooked as it possesses the highest crime density of any single location on the OC map.

An examination of the OC map reveals that the OPS HQ was the subject of a large amount of newspaper articles dealing with alleged police brutality of citizens being held in the station cell block. This large body of articles was triggered following the accusations of Stacy Bonds, who publicly claimed in late 2010 that she had been not only wrongfully arrested, but also assaulted physically and sexually while in police custody. Following her claims, the *Ottawa Citizen* published a large number of articles regarding progress in the Bonds case, similar accusations made by other citizens, and statements made by OPS in response. Due to the extensive media attention devoted to these alleged police brutality incidents, the amount of reported crime associated with the OPS HQ may seem disproportional when compared to other criminal incidents that did not receive the nearly same amount of repeated mention in the newspaper. Therefore, it is important to note that although the OPS HQ appears to be the most highly criminal space in the city according to the OC map, the reported crime count is the result of intense media attention rather than a large number of separate criminal incidents (approximately five separate cases were presented, but the crime count for OPS HQ is at 51 on the OC map because they were so frequently presented in the newspaper). The concept of a deviancy amplification spiral posited by Cohen (1972) is again likely applicable; in the weeks following Bonds' public allegations, more cases came to light and were covered in the news as well. This appears to be a fulfillment of both the first and second stages of the spiral, where the issue is made out to be only the "tip of the iceberg" (and this appears to be the case as more incidents came to public attention over the next few months following the Bonds case) and the public increases its consumption of these types of news stories (this is presumed to be the case considering the sheer number of news articles dedicated to these incidents, which suggests that

readership had to have been very high for the newspaper to continuously publish similar stories).

The fact that the OPS and OC maps can be distinguished based on their number of major crime hotspots highlights further differences in terms of the “types” of places associated with high levels of crime recorded by the police and reported in the media. More specifically, there are differences between the two maps in terms of the type of people who frequent high crime areas. On the OPS map, consumers and nightclub patrons are the groups most likely to be present in the hotspot, given that the vast majority of the Byward Market area engulfed in the OPS hotspot is dense commercial space and/or dense nightclub space. Because the OC map also delineates its major hotspot in approximately the same region as that of the OPS map, consumers and nightclub patrons are again among the most likely groups to be found within the OC map criminal spaces. However, as the OC map also presents the area of the Murray Street and King Edward Avenue intersection as more highly criminal than it is portrayed on the OPS map, consumers and nightclub patrons are not the only groups most likely to be found within the OC hotspots. Because of the presentation of the Murray Street and King Edward Avenue intersection area as high crime, the OC map hotspots are also frequented by homeless individuals.

4.2.5 Boundaries Between Criminal and Non-criminal Spaces

The third and final major difference between the OPS and OC maps is the way each map portrays the boundaries in between their respective criminal and non-criminal spaces. The boundaries between areas of extremely high crime and areas of low/no crime on the OPS map are narrow and sharply defined. Areas that reportedly experience an extremely high number of crimes are separated by a few hundred feet from areas where little or no crimes

are reported to occur. To illustrate, levels of recorded crime drop from extremely high ($z > 2.0$, which can be interpreted as abnormally high numbers of recorded crime when compared to the city average) to very low ($z = -2.0$ to -1.0 , which can be interpreted as much lower recorded crime levels when compared to the city average) over the space of a single city block on both the north and south sides of the crime hotspot in the Byward Market region. A similar effect is apparent to the east and west of the main constructed hotspot, although it is diffused over a slightly greater geographic distance (the transition zone to the west and east extends over approximately three city blocks instead of one to the north and south). Therefore, these rapid transitions are particularly pronounced where the use of space changes dramatically over a short distance and where public transit routes are absent. Predominantly residential or educational spaces appear to be constructed as virtual “fences” against crime; when these types of spaces are within very close proximity to areas with a higher concentration of commercial space, transit stops, or bars, criminal occurrences on the OPS map taper off dramatically and immediately at the border⁸ (as they do in the aforementioned spaces to the north and south of the primary constructed hotspot). Public parks on the map are also relatively crime-free, even when in close proximity to areas on the map that have very high concentrations of crime.

These findings are consistent with those of Groff, Weisburd, and Yang (2010), who studied how crime hotspots cluster and how they spatially relate to low crime areas. They found that areas with the highest crime rates tended to have areas of moderately high crime rates clustered very closely nearby (within half of a mile), while areas of low crime were

⁸ The University of Ottawa campus and Sandy Hill neighbourhood are located immediately to the southeast of the Byward Market. These areas, along with the remainder of Lowertown (the larger neighbourhood that includes the Byward Market but extends further to the north and east), are predominantly residential and educational spaces and are presented by both the newspaper and OPS as having a substantially lower crime density than the Byward Market area these neighbourhoods encompass (LAGGISS, 2012c; LAGGISS, 2012d).

much more diffuse over space and did not display the same sort of clustering phenomenon (p. 20). In sum, Groff, Weisburd, and Yang (2010) found that areas characterized by extremely high crime rates tapered off into areas of moderate and low crime rates over minimal geographic space. The transition zones between high and low crime areas occurred over a comparably short distance on the OPS map, although Groff, Weisburd, and Yang (2010) stated that the transition occurred over the space of approximately a half mile, the transition zone was found to occur over an even shorter distance on the OPS map.

Greenberg and Rohe (1984) argue that the actual physical boundaries that separate one neighbourhood from another have an impact on crime rates and can influence whether or not people decide to cross that boundary into another area. They found that high crime areas tended to be bordered by a major thoroughfare while low crime areas tended to have lower concentrations of commercial space overall and no major thoroughfares (p. 54-55). These findings emphasize the importance of access to space, and suggest that the boundaries between high and low crime areas are formed accordingly. The findings of Greenburg & Rohe (1984) are also supported by the OPS map in many places, as the Byward Market major crime hotspot is bordered by Rideau Street, Sussex Drive, and King Edward Avenue, all of which are major thoroughfares delineating the Byward Market neighbourhood.

By contrast, the OC map also does not provide well-defined boundaries between the criminal and non-criminal spaces identified on it. This is different from the sharply-defined boundaries shown on the OPS map because it is much more difficult to ascertain on the OC map how an area with high amounts of recorded crime transitions into a space with low amounts of recorded crime due to the substantially smaller amount of data point contributing to the sample. More specifically, it is much more difficult to identify trends in precisely how

crime density rates shift over geographic space when there are very few data points available and in many cases, these points are located a number of city blocks away from one another. The OPS map, on the other hand, makes these trends easier to identify due to the large number of points that are clustered very close to each other geographically throughout the entire city. For the OC map, the result is that these boundaries between high crime and low crime areas are vague and appear to happen gradually over the space of a number of city blocks. In the case of the Byward Market hotspot, the transition into low/no crime areas appears to occur over the space of 4-8 blocks on the OC map, while it occurs over the space of 0-2 blocks on the OPS map in comparison. It is also important to note that on the OC map, the Byward Market hotspot appears to “bleed” out into the surrounding blocks more so than it does on the OPS map. This is linked to the idea that transitions between high crime and low/no crime areas occurs over a greater geographic distance on the OC map because areas of average levels of crime ($z = -1.0$ to 1.0) appear within 2-4 blocks of the extremely high crime areas ($z > 2.0$), while this same type of transition tends to occur in less than one city block on the OPS map.

4.3 Participant Interviews

4.3.1 Introduction

This section will begin with an examination of patterns in participant ratings when prior knowledge of or experience with an interview location is taken into account. It was found that in general, the areas identified by participants as criminal were also those with which they were already familiar, either through direct personal experience or anecdotal evidence obtained from acquaintances. Then, this section will continue with a discussion of the commonly-referred to visual cues used by participants in order to determine whether or

not they believed an area to be safe or dangerous. In most cases, participants explained that the places they believed to be criminal ones were poorly maintained and dirty, were populated by large numbers of homeless individuals, had little to no commercial space, were geographically close to other areas of the city believed to be criminal spaces, and were poorly lit.

Prior to the discussion of the major patterns that were found in the participant interviews, it is important to note that for the most part, participants focused on street-level crime committed by strangers. This could be a result of the walking tour interview design; by taking the participants out into public spaces and asking them about their perceptions of crime in those areas, they may have been predisposed to talking about crimes commonly associated with public spaces. However, the participants were not explicitly told to focus on street crime, and they were not provided with a definition of crime at any point prior to or during the interview. The participants also did not focus solely on street crime, as some individuals (Mark and Steve in particular) commented on crimes they believed to be happening in more private settings (for example, domestic violence and fraud). Therefore, the interview design may have encouraged participants to discuss street level crime, but it also did not force them to exclude any other types of crime that came to mind.

4.3.2 Prior Experience or Knowledge

The first question asked at each interview stop determined whether or not participants had prior personal experience with that specific location before, and if so, follow-up questions were asked in order to determine the extent and nature of that experience. The second question asked of participants at each location obtained the numerical ratings indicating the crime rates they believed these locations to have. These two main introductory

questions revealed a number of trends among participants that appear to be related to the ratings they provided. First, participants who had been to the interview location in the past tended to rate locations as more highly criminal compared to those who had never been there before.

Location number	Average rating (Day)	Average rating (Night)	Average rating (Overall)
1	3.00	3.75	3.38
2	2.50	4.00	3.25
3	4.75	6.00	5.38
4	7.25	7.25	7.25
5	7.50	6.00	6.75
6	7.00	4.75	5.88
7	4.75	2.25	3.50
8	2.25	2.50	2.38
City-wide	5.50	5.50	5.50

Table 8. Average participant ratings by location and time of day.

Location number	Participant number			
	M1	M2	F1	F2
1	Y~	N+	N–	Y+
2	Y+	N–	N–	Y+
3	Y+	N–	Y+	N–
4	Y–	Y+	Y+	Y+
5	Y–	N+	Y+	N+
6	Y~	Y+	Y~	N–
7	Y+	Y–	N+	Y+
8	Y–	N–	N–	N+

Table 9. Past experience and rating comparison: day time participants.

Note. Participants are listed by number, where M = Male and F = Female. Table values indicate whether the participant had been to that location before (Y = Yes and N = No) and whether he/she provided a rating higher (+), lower (–), or approximately equal (~) to the average participant rating for that location.

Location number	Participant number			
	M1	M2	F1	F2
1	Y–	N–	N+	Y+
2	Y+	N–	N+	Y+
3	Y~	Y–	Y~	Y+
4	Y+	Y–	Y–	Y+
5	N/A	N–	Y–	Y+
6	Y+	Y–	Y+	Y+
7	N–	Y–	Y–	Y+
8	N+	N–	Y–	Y+

Table 10. Past experience and rating comparison: night time interviewees.

Note. Participants are listed by number, where M = Male and F = Female. Table values indicate whether the participant had been to that location before (Y = Yes and N = No) and whether he/she provided a rating higher (+), lower (–), or approximately equal (~) to the average participant rating for that location. A value of “N/A” indicates a location where the interview tape was lost.

To demonstrate, individual participant ratings were ranked against the overall participant averages for each location. Of these compared ratings, participants who had been to the interview location before rated it higher than the location average 56 percent of the time and lower than the location average 32 percent of the time (the remaining 12% provided rankings that were equal to the location average). By comparison, participants who responded that they had never been to that specific place before provided ratings that were lower than the location average 65 percent of the time and ratings that were higher than the location average 35 percent of the time. Taken together, this shows that participants who were familiar with the interview location because they had been there before tended to provide ratings that were on average higher than their counterparts who were unfamiliar with the interview stop.

Two of the interview questions asked of participants frequently revealed any anecdotal knowledge participants may have had regarding each interview stop. These questions asked participants for the reasons behind their assessment (see Appendix C for a list of interview questions). Out of 64 individual ratings (eight participants providing ratings for eight locations), 36 were provided along with a related crime story (often hearsay from

friends or family, media reports, personal experience, or information obtained through workplace documents) as part of the reasoning behind the assessment. Therefore, 56 percent of participant ratings were made (at least in part) using anecdotal information. Of the participants who recounted a crime story attached to the interview location, 67 percent of their ratings were higher than the location average while only 22 percent of the ratings were lower than the location average (the remaining 11% of the ratings supported by anecdotal information were approximately equal to the location average). This trend of rating locations higher if a detailed story about a specific criminal incident came to mind appears to be even stronger (demonstrated by wider percentage differences) than the aforementioned trend where participants who had personally been to a location before provided higher than average ratings. Clearly there is some overlap between these two trends that needs to be acknowledged; while most participants provided anecdotal information obtained from second-hand sources, some recounted stories they had either personally been involved in or had witnessed first-hand. Therefore, participants who provided first-hand knowledge had also been to that specific interview location before and their ratings would be included in the first rating trend discussed above. It is also important to note that only four out of the eight participants connected a news story to an interview location, and only one participant recalled a specific media report during his interview. All other references to media reported crimes were extremely vague; participant simply recalled “hearing something” about that location in the news. Even the four participants who did make connections between news coverage and the interview locations did so very rarely, usually only at one location each. Out of 64 total location ratings, only five were said to be supported by a news report.

These findings are important to keep in mind when comparing participant ratings to both the OPS and OC maps. Although existing literature suggests that mass media reports or official crime statistics are internalized by people and influence their perceptions of crime, the interviews revealed that participants recalled their own personal experiences (or those of people very close to them) first when they were available. Because of this, any similarities between the participant ratings and either the OPS and OC maps cannot simply be assumed to be the result of the internalization of news stories or police reports. While these sources likely have at least some impact over participant responses, the fact that personal experience was often listed as the main reason behind location ratings should not be ignored.

In general, having a past experience with a particular location during the daytime tended to result in higher than average participant ratings when conducting the interview during the day (see Table 9). By contrast, having past experience with a specific location at night tended to result in lower than average ratings when conducting the interview at night (see Table 10). This trend can potentially be explained by the tendency among participants to imagine each interview stop at its perceived “worst”. When asked to explain the factors that they believed to have contributed to their rating decision, participants often explained features of the location that would change as day turns to night. This tendency is demonstrated by the following participant response:

I see nothing to me that indicates any sort of risk factor. Uh, I mean...the only thing I would see...well okay, I don't see anything that indicates to me that anything has occurred. What I do see is a pathway that is probably fairly dark at night and there's lots of bushes, but I can't image that all that many people travel it alone at night. Uh, because if they do, well, they're a little crazy. (Laughs) But it is in the realm of

possibility. Um, I don't see any sign of graffiti, no bottles, no needles, no debris of any sort. Yeah.

(Mark, interviewed during the day, November 22, 2011).

This quotation illustrates how participants examined the interview locations both for characteristics that were present at the time of the interview (in this example, Mark was scanning for indicators of past crimes such as needles or graffiti) and characteristics that could change over time (the mention of the pathway that was imagined to be very dark and obstructed at night). Similarly, participants interviewed at night did not expect locations to become more dangerous during the day, although a few participants mentioned that they would feel safer at certain locations during the day. Instead, participants interviewed at night used their imaginations to consider how a location would change either later at night or on a weekend night if interviewed during the week.

This phenomenon of imagining locations at their perceived worst times could help explain the aforementioned trend among participants that those who had been there before during the day provided higher than average location ratings when interviewed during the day while those who had been there before at night provided lower than average location ratings when interviewed at night. Participants who had been to the interview location before during the day may assume that any negative experiences they had had in the past would pale in comparison to what goes on at that location at night, resulting in a higher than average rating. By contrast, participants who had been to the interview location before at night may assume that any negative experiences they had had there in the past were as unpleasant as they could get at that location, and therefore these participants could not imagine much further escalation beyond their own experiences. Therefore, these latter

participants may feel their own past experiences may be indicative of the area at its worst, and therefore their imaginations are unnecessary to the rating-making process.

What these findings suggest for the participants' geography of crime is that each participant possesses a unique, individual geography of crime that is at the same time shared with other Ottawa residents to some degree. Each participant may have personal experiences attached to certain spaces that no other individual shares. At the same time, it is possible that individuals can have shared beliefs about the character of certain spaces based on reputations, shared stories, or media coverage (Blaikie, 2007). Although individual experiences vary from person to person, an exploration of the shared beliefs about crime rates throughout Ottawa revealed that certain areas such as Vanier and the Byward Market were believed by participants to be high crime, while areas such as Sandy Hill and the University of Ottawa campus were believed to be low crime areas.

4.3.3 Cleanliness and Maintenance

The first theme found throughout the interviews to be discussed in this section is the idea of cleanliness and maintenance and its relationship to criminal activity. For many participants, visual cues such as litter, graffiti, overgrown yards and gardens, and a lack of general exterior building maintenance were taken as signs of crime and community disorder. Such visual cues were often interpreted as indicating that social bonds in that community were weak or nonexistent; if the area residents cared so little for maintaining their own property and did not respect others' property, they were also not expected to care for each other or any outsiders who may be visiting their neighbourhood. As expressed by one participant being interviewed at night:

...so yeah, the, the physical features around here are huge. The garbage, it could be garbage, it looks like it's just stuffed in here, this dark kind of alleyway piece, the balconies there, they look trashy. It's just not a well-kept portion. Any place that you have flags that are hanging off a balcony and it's not Canada Day and it's not the 4th of July and they're not specifically celebrating their country's holiday, because you expect to see that regardless of what country it is, you expect to see stuff like that on their country's holiday. Just for the sake of it, I don't know, normally respectful people don't put stuff like that out... People don't hang flags off their balcony like that. (Steve, interviewed at night, November 24, 2011).

This quotation from Steve provided at location #3 exemplifies how physical features such as trash or unappealing décor were often interpreted as a manifestation of the moral characters of the individuals living in an area. For many participants, residents of a poorly maintained neighbourhood were expected to care so little about their own community that they would not report any crime they happened to witness and they would not come to the aid of any individuals that they witnessed being victimized.

A lack of cleanliness could also indicate past crimes to participants. Although often not regarded as major or serious crimes, litter and graffiti were viewed as crimes in themselves, so their presence was among the most direct and obvious indicators of the existence of crime at a given location. In fact, some participants approached litter and graffiti as both indicators of criminal activity and evidence of past law-breaking. For example, when asked what sort of crime they expected occurs most often at the current location (if any), graffiti was often mentioned by participants both as a form of crime and as an indicator that youths engaging in other “nuisance” crimes were common in that area.

Areas seen as having low levels of property maintenance and cleanliness were given higher location ratings accordingly. At locations where the researcher locations ratings for maintenance/cleanliness were at their lowest, participant ratings were at their highest. Therefore, while participants not only explicitly stated that levels of maintenance/cleanliness affected their perceptions of crime, this neighbourhood feature was also reflected in the ratings they provided across all eight locations.

Furthermore, participants often mentioned “cleaning up” an area as an effective means of lowering the crime rate at the current location. This was a very common response provided for question #8, which asked participants what they believed could be changed in order to lower the crime rate at that location. Even though this was a common reply among participants, many also noted that their belief that improving the location’s cleanliness or renovating the physical space in order to make it safer did not seem logical:

It’s funny, I probably would have found this area a lot less safe or more prone to crime a few years ago before they redid this middle section and they put all the nice art installations and a lot more lighting, and this sort of grassy knoll in the middle. Before that I would have said it’s not as safe as a space, um...so I guess as a result that’s why I’m putting [the location rating] at six. Because it seems a little more, slightly more cared for anyway. (Sophie, interviewed at night, January 20, 2012).

This response by Sophie provided at night at location #4 highlights a further component of the maintenance/cleanliness theme found throughout the participant interviews. As mentioned earlier, maintenance/cleanliness was often thought of as both an indicator of weak social bonds in that community (that either caused crime or failed to prevent it) and as evidence of past crimes. The quotation above demonstrates how

participants also thought of maintenance/cleanliness as directly linked to the causes of crime. Because the improvement of physical appearance and cleanliness was so often suggested by participants as a means of lowering the crime rate, it appears that participants were connecting a lack of cleanliness to the root causes of crime itself. In fact, improving overall cleanliness was the most common suggestion for reducing crime rates provided by participants when asked. It is important to note, however, that reasons for the presumed connection between improving cleanliness and reduced crime rates were not provided. As mentioned above, a lack of care was often linked to weak social bonds in a community that did little to prevent crime through informal social control. However, the reverse was not necessarily assumed to be true; improved cleanliness was not expected to improve social bonds, which in turn improved neighbourhood informal social control to prevent crime. Therefore, participants made connections between maintenance/cleanliness and crime as an indicator of the presence of crime, as evidence of past crime, and as a means of reducing the crime rate in an area even if they themselves could not explain why they held these beliefs.

Stark's (1987) classic propositions on the ecology of crime identifies "dilapidation" as one of the five fundamental characteristics of high crime neighbourhoods that enable crime independent of the area's demographic qualities. He wrote that it is the neighbourhoods that are dense, mixed-use, and characterized by a transient population that also tend to be dilapidated. Dilapidation can have a highly demoralizing and stigmatizing effect on residents, which both reduces the likelihood that positive role models will continue residing there and reduces residents' desire to conform and safeguard their surroundings. Therefore, Stark (1987) claims that dilapidation has a strong impact on a neighbourhood's social characteristics, which can in turn encourage (or at least, fail to prevent) crime (Stark,

1987). It would certainly appear as though the participants have provided a similar justification for their own connections between criminal spaces and a lack of cleanliness and maintenance; although they were not always able to explain their own reasoning for this connection, cleanliness was frequently connected to expectations about social habits and moral values that were in turn expected to influence crime rates.

Clearly, participants have made strong connections between a lack of cleanliness and maintenance and crime. Therefore, it is to be expected that the areas of the city characterized by litter, graffiti, abandoned buildings, and poor property upkeep would be among the most criminal areas in the city according to the participants' geography of crime. At the same time, areas that are well-maintained and clean are likely to be the least criminal spaces of all according to the participants' geography of crime.

4.3.4 Visible Homelessness

A related theme that emerged throughout the interviews was that the presence of homeless individuals was common in areas believed to be high crime. At location #4 in particular, almost every participant made note of the fact that a large homeless shelter is found at the intersection of Murray Street and King Edward Avenue and that many homeless individuals loiter on the streets of the blocks surrounding that intersection. There are a number of dimensions to this recurring theme. First, many participants explicitly stated that they believe homeless individuals to be direct threats to their personal safety. Second, some participants expressed their beliefs that homeless individuals could not be counted upon should help be needed in the event of a violent personal attack. Third and lastly, the juxtaposition of homeless individuals in otherwise upscale, well-maintained, and very clean spaces was seen by some participants as an indicator that crimes were common in that area

despite its otherwise appealing appearance. This final dimension of the homelessness theme found throughout the interviews suggests a link to the previously discussed theme of a perceived connection between cleanliness and crime; if an area that is very well-maintained, new, or clean has a number of homeless individuals present, the area was seen as less safe overall because of suspicions that this sort of person does not “belong” in such a space and must be there for illegitimate purposes.

Every participant stated at least once during his or her interview that he or she believed homeless individuals to be among the most common criminal offenders in the city. This topic came up very frequently and in response to most of the pre-determined interview questions; many participants stated that they felt most threatened by homeless individuals, that the presence of homeless shelters indicated high crime rates, and that the removal of homeless shelters could lower crime rates in a neighbourhood. The perceived likelihood of homeless individuals to engage in criminal activity appears to stem from the belief that poverty causes a level of desperation that exceeds whatever “normal” human morals that homeless individual may otherwise possess. Although individuals under the influence of drugs or alcohol were also often mentioned as potential threats to personal safety, this threat was seen as compounded if the intoxicated individual was also homeless. For example:

Well if there was a lot of, uh, drunk young guys, I'd feel less safe. If there was like, a lot of drunk homeless guys I might feel slightly less safe. (Sophie, interviewed at night, January 20, 2012).

As exemplified by this quotation, many participants felt as though meeting up with a homeless individual (particularly alone and at night) put them in a potentially dangerous situation. At the same time, however, perceptions of homeless individuals were not always

so straightforward. Occasionally, participants discussed two contradictory yet co-existing views of homeless individuals. Participants who mentioned that they often felt threatened by homeless individuals stated at other points in their interview that they did not actually believe homeless individuals to be criminals. As stated by Sophie, the same participant quoted above at a different point in her interview:

Yeah, I don't actually think homeless people are criminals, you know what I mean? I think it's important to say that, but uh, but it certainly affects my sense of security in a space, you know what I mean? Even having volunteered with homeless people and knowing that, what they're like and that they're relatively non-violent, and even if they're drunk, they're not going to do anything, you know? But it's still, like, you know, and I don't know where this message comes from, but I still, you know, feel uh, insecure over here you know what I mean, when there's a lot of homeless shelters around, regardless, you know? Yeah, that's about it. (Sophie, interviewed at night, January 20, 2012).

For Sophie, perceptions of homeless individuals have been shaped both by her professional experience and by external messages and images communicated through unspecified secondary sources. So while she explicitly stated that she does not believe that "homeless people are criminals", she expressed numerous times throughout her interview that she would feel threatened by a homeless person if encountered alone or at night. This suggests that secondary information can have a powerful impact on shaping perceptions. None of the participants made specific mention of past personal problems with homeless individuals yet many still mentioned feeling wary during their interviews when homeless shelters or individuals could be seen. In fact, Sophie explicitly states that in her own

personal experience, she has found homeless individuals to be relatively harmless. She referred to this threatening external image of homeless people as a “message” with an unknown source (in her second quotation), therefore recognizing that homeless individuals are often associated with criminal activity. At the same time, however, her own professional experience working directly with homeless individuals who have never victimized her was insufficient to completely override these external messages from secondary sources.

Although contradictory, Sophie expressed two separate perceptions of homeless individuals that she believed to have an impact over her beliefs about crime rates in Ottawa’s downtown core. However, it is important to note that the participants interviewed, for the most part, expressed that they expected homeless individuals to be responsible for a large amount of crime around the downtown area and that they felt threatened by homeless individuals.

These participant beliefs are similar to those described by DeLisi (2000) and discussed above in section 4.2.3. He argued that homeless people are highly stigmatized, and this stigma has led to many misconceptions about homeless individuals and their contributions to crime rates. DeLisi (2000) argued that while homeless individuals are incarcerated at a disproportionate rate in the USA, they are more often the victims of crime or the perpetrators of non-violent crimes than they are the perpetrators of violent offences (DeLisi, 2000; Fitzpatrick, La Gory, & Ritchey, 2006). Certainly, participants’ beliefs supported DeLisi’s (2000) claims that homeless individuals are often thought of as dangerous or violent criminals as their presence (or the presence of homeless shelters) was commonly cited as a major contributor to high location ratings.

In addition to the belief that homeless individuals are common criminal offenders, participants also failed to acknowledge the potential for homeless individuals to come to

their aid in the case of an emergency or attack as they did for non-homeless bystanders. Although this was not stated explicitly by any of the participants, everyone interviewed discussed the importance of bystanders as a form of crime prevention (a complex theme that will be discussed in greater detail later in this section), but homeless individuals did not appear to be included as candidates worthy of inclusion in this group of potential guardians. For example, at location #5, many participants stated that they would feel uncomfortable being there alone because there were so few other people around should an attack occur. The previous interview stop, location #4 is found only a short block to the east of location #5. All of the participants made note of the presence of the Shepherds of Good Hope homeless shelter at location #4 during their interviews, and also pointed out the fact that many homeless individuals “loiter” outside and around the shelter building. Furthermore, the one-block walk in between these two locations always revealed a further homeless population socializing around the buildings on both sides of Murray Street leading up to location #5. Therefore, despite being only one block away from Shepherds of Good Hope and within metres of “loitering” homeless individuals along Murray Street to the east, the participants did not feel safer being in the presence of a large group of other people (and potential protectors) as they did at other locations.

Although this dimension of the homelessness theme may seem implicit, it is an important trend to consider as the presence of other people was revealed to be one of the most commonly-mentioned influences over perceptions of criminal activity in downtown Ottawa. The presence of other people in a particular space has various implications for feelings of safety or danger depending on beliefs about the “types” of people that are present. The fact that participants did not once acknowledge homeless individuals as potential

protectors in the case of an emergency suggests that homeless individuals were seen strictly as either the perpetrators of crime or as bystanders who could not be counted on to intervene in ongoing criminal incidents.

The final dimension of the homelessness theme that emerged from the participant interviews was that assessments were made by participants as to the type of person who “belongs” in a particular type of space. Participants were often quick to point out when a person appeared to be out of place at one of the interview locations, although it is important to note that these assessments only ever applied to apparently marginalized groups. Homeless individuals were predominantly the groups deemed to be out-of-place, although similar judgements were also made about individuals belonging to racialized minorities, suspected drug addicts, and loitering youths (although these groups were not afforded nearly the same attention as homeless individuals).

One of the most prominent examples of how participants observed the juxtaposition between “nice” places and the people they did not believe to belong occurred at location #7. The interview for location #7 occurred at the intersection of Sussex Drive and Rideau Street, in a courtyard outside of a new upscale condominium building and two expensive restaurants. As this property is located at a very high traffic intersection and is within close proximity of both the York and George Street nightclub districts and the Rideau Centre shopping mall, the courtyard itself hosts a large amount of pedestrian traffic in addition to the condominium owners and restaurant patrons. Despite the fact that this is a high traffic area, participants made frequent notice of any individuals who did not appear to “belong”. As stated by one participant at this location:

Yeah, it's nicely kept. It's clean, it doesn't look like a place that scummy people hang out. You know, you have real nice apartments, I think these are apartments up top, right? Like, these really nice apartment up there, it's kept very well clean, you keep the place clean and you're generally not, you might get the odd person that's begging around the side, but...very nice. (Steve, interviewed at night, November 24, 2011).

For Steve, the cleanliness and upscale appearance of the location were important for his low rating (3.00/10.00). At the same time, however, this quotation shows that even though no homeless individuals were present at the time of the interview, Steve assumed that this location has the potential to become an attractive place to “beg” based on his knowledge of the surrounding areas and other interview locations found nearby. These begging individuals would be out of place at location #7; as “you might get the odd person” begging, it is implied that such individuals are not commonplace and therefore do not reside in the condominium building or frequent the expensive restaurants. Steve mentioned this type of individual who does not seem to belong as having affected his numerical rating of location #7. This implies that although this place is very clean, new, upscale, and well-maintained, there is still the potential for criminal activity due to the fact that it may be inviting for people who do not belong there. For Steve, the juxtaposition between an upscale place and the homeless individuals that may be found there at certain times is enough to suggest that location #7 is not an entirely crime-free place.

It is also important to address Steve's use of the term “scummy” when describing the type of person he does not expect to commonly find at location #7. The use of the term “scummy” suggests a further connection between the cleanliness and homelessness interview themes. Because “scummy” is synonymous with dirty, the application of this word to human

beings and the suggestion that this sort of person begs for money in clean or upscale areas implies that homeless individuals are the personification of dirtiness in the opinion of some of the participants. Perhaps homelessness can therefore be thought of as a subcategory of the cleanliness theme as a result; people or places deemed unclean by participants were seen as criminal and as a factor that could increase the crime rates in areas where it would otherwise be minimal.

Given that participants associated crime with homeless individuals, it is to be expected that their geography of crime identifies the areas surrounding homeless shelters among the highest crime areas in the city. This is particularly evident in the area of the Shepherds of Good Hope homeless shelter at the intersection of King Edward Avenue and Murray Street, and along Murray Street to the west of this intersection where a number of other shelters are found. For participants, the highest crime areas were ones where both shelters and the visible homeless were present, and areas where homeless individuals could be seen away from shelters were viewed as criminal as well (although it was the combination of homeless shelters and homeless individuals that resulted in the highest ratings).

4.3.5 Presence of Other People

In addition to the presence of homeless individuals at the interview location, participants constantly made note of the fact that these spaces were occupied by a wide variety of other types of people. The presence of other people had a variety of meanings for participants; to some, other (specifically non-homeless) people in the area provided an opportunity for social referencing. These people were looked to for cues regarding how to behave in that space or for what to expect in terms of whether or not that space is usually a

safe one. As exemplified by this quotation from Mark, a participant interviewed during the day:

Not really. I mean, I'd take a look around. Are people looking at each other, are they paying attention and that, and they generally are, which is good. It means they're observing their environment, they don't look scared, which is great. (Mark, interviewed during the day, November 22, 2011).

For Mark, other people in the same area can be looked to for behavioural cues. As no one nearby was reacting in a manner that suggested that he too should be afraid, he provided this location with a low rating. Even more subtle behavioural cues, such as looking at each other and having the appearance of paying attention to their surroundings, are noticed by Mark and interpreted as positive qualities and behaviours that contributed to making the space seem safer overall.

At other locations and in assessments made by different participants, characteristics of other individuals interpreted as suspicious had an effect on the rating provided. Loitering in particular was interpreted as highly suspicious. Participants frequently stated that if a person's reasons for occupying a given space were not instantly clear, then it was believed to be highly likely that they were waiting for an opportunity to commit some sort of crime. As all of the interviews were conducted just off of sidewalks (with the exclusion of location #7, which took place in a courtyard outside of a condominium building and two restaurants, although its busy intersection placement often results in its use as a pedestrian walkway), it was generally expected that the "legitimate" purposes for occupying most interview locations were either walking through the space as a means of travelling elsewhere or patronizing one or more of the businesses present. Standing in one spot outdoors was only acceptable (and

perhaps being outside without an apparent purpose was particularly suspicious given that the interviews were conducted during the winter) if the individual was clearly waiting for a bus. Otherwise, participants were very quick to note that certain individuals “stood out” from others because their behaviours seemed unusual compared to what was expected for that type of place. When participants could not easily identify why a person would be standing outside alone, they often stated that it increased their location rating to indicate a higher perceived crime rate.

It is also important to note the temporal variations in participant interpretations of the presence of other people. Participants interviewed during the day were much less suspicious of other individuals overall when compared to participants interviewed at night. For the most part, participants appeared to assume that individuals who were out in public during the day were doing so for an innocuous reason (the most commonly assumed reasons were that people were out Christmas shopping, going to work or school, or simply walking around for leisure or exercise purposes). Even when the intentions of individuals were not immediately obvious, participants provided a hypothetical explanation for the presence of these other individuals in that place.

However, the impact of other people became much more complicated when the interviews were conducted at night. Although many of the same activities occurred during both the day and night interviews, participants provided alternate assumed explanations for these activities depending on the time of day. For example, individuals simply walking down a sidewalk alone during the day were often assumed to be going to work or school. However, individuals walking down a sidewalk alone at night were looked upon much more suspiciously. Although the same interpretation was not necessarily applied to every single

individual walking down a sidewalk alone at night, it was often guessed that such people were walking to a bar where they would become intoxicated or that they were already intoxicated and had left their group of friends (possibly due to some altercation). Therefore, during the day, a simple activity such as walking down a sidewalk was viewed as legitimate and unthreatening, while the exact same activity observed after dark was often viewed as suspicious or potentially dangerous. This finding suggests that participants apply their own pre-conceived beliefs about when and where crime occurs upon not only physical spaces but also the individuals that occupy them. These beliefs are imposed in a top-down fashion; the behaviour of the other people present had not changed, but the perceived meaning of these identical actions changed based on the beliefs that the participants already held. Therefore, these beliefs act as lenses or lay theories through which the world is interpreted.

Despite this finding, for all of the participants interviewed, having other (specifically non-homeless) people around made the space seem safer overall. The presence of other people was viewed as a positive and even protective feature of a space for two reasons. As mentioned earlier, it was assumed by many participants that in the event of an emergency or a crime, the other people present would provide rescue, assistance, or would at least call the police. These bystanders were also believed to have preventative value simply due to their presence; criminals would be less likely to commit a crime if there were many possible witnesses around. This faith in bystanders was interesting, however, considering that many participants explicitly stated that they would choose not to get involved if they personally witnessed another individual being victimized. In fact, question #8 asked participants about the type of crime they could envision themselves most likely becoming involved in, which allowed the participants to discuss whether they felt at risk of becoming victimized or if they

would choose to involve themselves if other people were in trouble. Considering that none of the participants stated that they would gladly come to the aid of another individual in need, it is perhaps somewhat surprising that they have an expectation for other bystanders to act differently.

The second reason why a group of bystanders was viewed positively by participants is that they were believed to act as a group of alternate targets for potential criminals. Should an offender be waiting for an opportunity to strike, having a large group of people around reduced the likelihood that the participant would be the one victimized. At the same time, however, this dimension of the presence of other people theme has a temporal aspect as well. During the day, having a large group of bystanders nearby had protective value, for the reasons discussed above. At night, however, large groups of people were sometimes seen as threatening or intimidating. It was noted that at night, it can become difficult to keep an eye on the behaviours of all bystanders, and it was also assumed that anyone out in a large group after dark was likely intoxicated. It is also unclear the exact numbers at which a group becomes threatening rather than protective, and this appeared to vary by participant.

The belief that bystanders can act as guardians or alternate targets that may affect whether or not a potential criminal decides to commit a crime is highly similar to the core tenets of routine activity theory, as originally posited by Felson and Cohen (1980). This theory states that crimes occur when a target is present, there is inadequate guardianship over the target, and a motivated offender conducts a cost-benefit analysis that results in the decision to take a risk (Felson & Cohen, 1980, p. 392). Although it is unlikely that participants were previously aware of this criminological theory, they appeared to be applying a version of routine activity theory throughout the interviews while examining their

surroundings. Other people occupying the same space could be thought of as targets or guardians. Participants frequently stated that they believed others would come to their aid if they became the victim of crime in a public place. Participants also stated their belief that the greater the number of other people coexisting in a single place, the greater the chances that someone else would be the one to become victimized. Similarly, participants also discussed the presence of other people as having a mitigating effect over crime rates because potential offenders would not want to commit a crime where so many witnesses could report the crime. In this sense, the presence of other people was also seen as factoring into the cost-benefit analyses of potential offenders. Therefore, participants applied a lay theory to their location assessments that highly resembled Felson and Cohen's (1980) routine activity theory.

Participants also appeared to take into account how similar they themselves were to the other people occupying the same space when making their assessments regarding the perceived level of crime at each location. The more they could relate to the other people present, the safer they appeared to feel. These findings are consistent with those of researchers who have found that levels of fear of crime increase as feelings of demographic dissimilarity from others increase (Brownlow, 2005; Dixon & Linz, 2000; Gilliam, Valentino, & Beckmann, 2002; Lavrakas, 1982; Madge, 1997; Moran, Skeggs, Tyrer, & Corteen, 2003). Therefore, it would be expected that most individuals would feel least fearful of crime when they find themselves in areas populated by many other people deemed to be highly similar to themselves. The most prominent example of this assessment of demographic "closeness" occurred in the case of students. Approximately half of the participants were either current university students or very recent graduates, while two more

participants mentioned that they had children currently enrolled in university. Therefore, the majority of the participants were either students themselves or had very close personal relationships with students. Recognizing students present in a particular location was frequently noted as a factor that served to lower the provided location rating; even when not on a university campus (where one may assume students to “belong”), students were assumed to be generally non-threatening as they were perceived to be too preoccupied with their studies to commit any major crimes. Again, perceptions of students changed over time, and suspicions toward students increased after dark. At night, students were seen as slightly more threatening; it was mentioned by a number of participants that students are likely to be responsible mainly for “nuisance” crimes (such as graffiti or public intoxication).

It is also interesting to note that it was only the current students and recent graduates who believed students to be occasional perpetrators of sexual assault or theft (the other participants only mentioned that students would be likely to commit minor offences, mainly involving public intoxication or general public disturbances). This finding is interesting because it suggests that those who identify most with students (namely, participants who were themselves students or had been students a few months earlier) are also those who recognize the most heterogeneity within their own group. The participants who were familiar with students or had close relationships with students (but were not students themselves) were generally trustworthy of students and expected them to commit only minor “nuisance” crimes. On the other hand, the participants who were students themselves or had been up until very recently mentioned that the student population was made of a variety of different people: those who would never commit an offence, those who would commit minor “nuisance” offences, and the select few who would commit more serious offences such as

sexual assault or theft. These findings suggest that the degree of perceived “closeness” to the demographic groups present in a given area affects the perceived crime rates in that area.

For participants to feel safest, it appears as though they require a high amount of familiarity with the groups present, without such an extremely high level of familiarity that they are able to recognize the heterogeneity among members of that group (and thus recognize that some members of that group are, in fact, potential offenders of serious crimes).

4.3.6 Ownership and Spatial Use

Although research into crime rates and their connection to spatial use has revealed that land uses are only one component of a complex set of variables that interact to affect crime rates, researchers remain divided in their explanations of geographic crime clustering. McCord and Ratcliffe (2009) argue that it is possible to theoretically predict crime rates in the neighbourhoods surrounding particular types of land uses. In particular, they note that assaults cluster around nightclubs, while thefts and vandalism are most common in the areas surrounding high schools and shopping centres (McCord & Ratcliffe, 2009). Similarly, Stucky and Ottensmann (2009) found that commercial activity and high-density residential buildings were associated with high levels of violent crime while cemeteries, water, and industrial areas were associated with lower levels of some violent crimes. Furthermore, they argued that it is important to investigate the impact of land use in combination with their socioeconomic contexts (Stucky & Ottensmann, 2009), an argument also supported by Franzini, Caughy, Nettles, and O’Campo (2008).

The belief that the presence of businesses act as an effective crime control mechanism was another theme that emerged throughout the interviews. This is in part due to the belief that the presence of other (specifically non-homeless) people has protective value; where

there are businesses, it was assumed that there would almost always be at least one other person per businesses who could provide assistance if needed. Furthermore, businesses were seen as having an inherent capitalist-minded value system that requires them to protect not only their own properties, but also their potential customers as well. For this reason, it was suggested by many participants that businesses can have a crime prevention effect upon not only the indoor store space itself, but also over the surrounding area outside of the business itself. For example, when asked what he thought could be done to reduce the crime rate at location #2, Mark responded with:

I think things like, it would be good to have even a coffee shop, and I know it seems stupid to have one if there's the main strip over there, but some sort of uh, small coffee shop or some sort of activity that happens during the day would be a big, uh, big thing to get people around and moving in this space. Stuff like making sure there's good lines of sight to each of the houses from the neighbours so you can see, uh, if somebody is doing something weird. (Mark, interviewed during the day, November 22, 2011).

Although purely residential areas like this one were generally seen by most participants as reasonably safe places, many participants also expressed concern that such areas could be prone to crimes such as break-ins (to parked vehicles and homes) and street-level interpersonal crime (such as assault or sexual assault that may occur after dark when a person is walking alone). For Mark (as well as a number of other participants), the addition of a small business would increase traffic to an area that is otherwise isolated at most hours. By creating a mixed use space (rather than a strictly residential area), it was expected that the overall character of the area could be improved; traffic would be increased, the business

could watch over its own space and patrons, and opportunities for break-ins and assaults would be decreased as there would be fewer opportunities for such crimes to go unnoticed.

The idea that densely populated, mixed-use neighbourhoods naturally protect against crime by virtue of their characteristic pedestrian traffic and “eyes on the street” was popularized by Jacobs in her 1961 book (as cited in Browning, Byron, Calder, Krivo, Kwan, Lee, & Peterson, 2010). Jacobs argued that dispersed commercial space and other public destinations reduced “grey area” streets with minimal traffic. Furthermore, she argued that the presence of strangers in public spaces is beneficial, as their presence inspires those who have an interest in maintaining neighbourhood safety to remain vigilant (Jacobs, as cited in Browning et al., 2010). Although Jacobs’ theory has remained relatively untested over the decades (Browning et al., 2010), it would appear as though the participants related to this argument and even applied it during their own assessments.

The reputation of the businesses present in a particular area was also a key contributor to the businesses’ crime preventative value, especially large chains and family-owned businesses. Large chains were assumed to be geared towards brand image maintenance and attracting new customers away from competitors, which requires them to take exceptional measures to stay publicly appealing. Certainly, such chains would not want to be associated with high crime rates if they are to maintain a favourable image and attract new customers. On the other hand, family-owned businesses were seen as having an inherent community-oriented value system. Because these businesses were run by a cohesive group of people in close personal relationships, it was expected that their businesses would be more caring, protective, and friendly as a result. However, any type of business seen as reputable was used for social referencing purposes. Businesses were looked to for

behavioural cues; any reputable business was not expected to stay in an area where there existed a major threat of criminal activity. Businesses, therefore, were seen as reflective of the quality of the neighbourhoods they were in: reputable businesses could move elsewhere if the neighbourhood was particularly problematic, and only struggling, poorly-run, morally-questionable businesses could thrive in high crime areas. For these reasons, participants noted that if they found themselves in an area occupied by a reputable chain or an apparently family-run business, they provided a lower location rating.

That participants believed shopping centres to be protective against crime provides little agreement with the aforementioned research into the link between spatial use and recorded crime rates. As discussed above, Stucky and Ottensmann (2009) and McCord and Ratcliffe (2009) found that dense commercial centres are actually associated with elevated crime rates. Clearly, participant beliefs about spatial use and its connection to crime rates is more in line with Jacobs' theory (as cited in Browning et al., 2010) than with the findings of recent GIS researchers (McCord & Ratcliffe, 2009; Stucky & Ottensmann, 2009).

Overall, these findings suggest that residential areas with a small number of chain or family-owned businesses are among the lowest crime areas in the city according to the participants' geography of crime. University campuses were also seen as generally low crime areas. Areas characterized by little to no residential space and those in which struggling or disreputable businesses operated were seen by participants as having the highest crime rates in the city.

4.3.7 Lighting Levels

Another important theme that emerged throughout the participant interviews was the impact of lighting on perceived levels of crime or danger. Of all physical or environmental

features that have been connected to crime and fear of crime in the literature, it would appear that lighting levels have received the most attention (Brantingham & Brantingham, 1993; Blobaum & Hunecke, 2005; Herbert & Davidson, 1994). Despite such attention, the impact of lighting level improvements over both recorded crime rates and fear of crime has been highly ambiguous. Loewen, Steel, and Suedfeld (1993) found that when compared to a variety of other physical features, lighting was the most powerful predictor of an individual's feelings of safety in public space. Furthermore, Painter (1996) argues that improved lighting not only reduces both crime rates and fear of crime, but also improves the overall social quality of the community as residents feel more comfortable being out in public at night. Despite such positive findings, Herbert and Davidson (1994) claim that past studies that have found a negative correlation between lighting levels and either crime rates or fear of crime have been plagued by methodological issues. Purely statistical analyses are said to be particularly problematic as they ignore the subtle nuances of individual experience and perception (and in particular ignores how lighting levels can interact with other physical features or prior knowledge of an area in order to change the impact that lighting has over an individual's risk assessment process). In general, it would appear that the literature focusing on lighting levels has been mixed, with greater support for a link between lighting and fear of crime than for lighting and recorded crime rates (Herbert & Davidson, 1994; Painter, 1996; Pain, MacFarlane, Turner, & Gill, 2006).

Although past research has suggested that lower lighting levels create heightened feelings of fear or danger, the responses and ratings provided by participants combined with the researcher location ratings suggest that lighting plays a substantially more complex role in shaping perceptions. If it is true that low lighting levels are associated with unsafe or

criminal places, then it would be expected that the locations with the lowest lighting levels would have the highest participant ratings (and vice versa). However, location #4 received the highest researcher location rating for lighting out of all interview locations (9.00/10.00, meaning the area was extremely bright due to high numbers of street lamps and lighting from additional sources), yet it also received one of the highest average participant ratings (7.25/10.00 across both time of day locations, suggesting a crime rate substantially higher than the city-wide average). By comparison, location #2 received the lowest researcher location rating for lighting (2.50/10.00, meaning that this place had few street lamps, and poor and obstructed lighting) yet received a very low average participant rating (3.25/10.00, suggesting a crime rate much lower than the city-wide average).

When participant responses provided during the interviews are examined, it is clear that lighting levels were, in fact, taken into account when assessing each location. In fact, when asked what they believed could be changed about each location in order to improve its safety, one of the most common responses (aside from improving overall cleanliness, as stated earlier) was that lighting could be increased. Low lighting levels was also an extremely common response provided when asked which factors were taken into account when making assessments about each location. A strict examination of participant interview responses could lead to the conclusion that low lighting levels affect perceptions of a particular area by decreasing feelings of safety. However, other information, such as the participant ratings and the researcher location ratings, was also available in addition to the qualitative responses which, all taken together, suggests that the influence of lighting levels over participant perceptions changes when combined with other factors.

It is again important to note that the two most poorly-lit locations (#2 and #8, with researcher location ratings for lighting of 2.50/10.00 and 4.00/10.00 respectively) received the two lowest average participant ratings out of all eight locations (#2 was rated at 3.25/10.00 overall while #8 was rated at 2.38/10.00 overall). If the existing literature connecting poor lighting levels to higher perceived levels of crime is correct, it would be expected that these two locations, by virtue of their very poor lighting levels, would be ranked among the most criminal spaces on the interview tour. Poor lighting levels, although certainly not unnoticed by participants at these two locations, did not seem particularly important compared to other neighbourhood features such as cleanliness and maintenance, upscale properties, and a lack of a visible homeless population. Therefore, the “positive” qualities of these two areas outweighed the “negative” poor lighting aspect. The reverse appears to be true in the examples provided by locations #4 and #6, which had high levels of lighting (they received researcher location ratings of 9.00/10.00 and 7.50/10.00 respectively) and high average participant ratings (7.25/10.00 and 5.88/10.00 respectively). Again, these two locations and their participant and researcher ratings fail to support existing research findings on the impact of lighting levels on perceptions of crime. At these two locations, it appears as though the “negative” qualities (such as abandoned buildings, very large visible homeless populations, and the presence of nightclubs) outweigh the “positive” quality of considerable lighting levels.

The interpretation of lighting levels by participants highlights the importance of considering the physical features of an area both independently and in combination with other features when assessing the sort of factors that are taken into account when forming opinions about an area’s crime rate. Certain individual factors were interpreted by

participants as signs of danger or disorder (such as the presence of homeless individuals or a lack of maintenance or cleanliness). At the same time, a combination of numerous features may suggest a “type” of high crime place, which potentially explains the varied impact of lighting levels over participant ratings. For example, location #4 has extremely high lighting levels, but is also characterized by a highly visible homeless population, numerous abandoned buildings, and very low levels of cleanliness and maintenance. As noted by Sophie, a participant interviewed at night:

Well, the building right behind me is uh, like rows upon rows of decrepit building (laughs). So I’m going to say that definitely affects my sense of security and of crime in this place, just because it seems really uncared for, uh, yeah. The light is good here otherwise, it’s a really busy street, so it’s mostly just the presence of homeless persons and the ugly building behind us. (Sophie, interviewed at night, January 20, 2012).

This quotation illustrated that Sophie did make note of the high lighting levels present at location #4, but other features of the area played a greater role in shaping her assessment of the area. At other locations on the interview tour, Sophie referenced lighting levels as having affected her rating decision and frequently suggested improved lighting as a means of lower the crime rate. This suggests that in general, Sophie associated high lighting levels with safety or low crime rates. For Sophie, it appears as though certain physical features were weighed against others at location #4 and ranked according to their importance. As she still provided a higher than average rating at location #4 (6.00/10.00), it appears as though lighting levels were of less importance to her assessment than other features such as dilapidated buildings or the presence of homeless individuals.

It is also possible that participants have pre-existing expectations for the sort of behaviours that occur in a particular “type” of space (identified by the variety of physical characteristics that converge there), and high lighting levels (which are associated with crime prevention, safety, or low crime rates elsewhere in the city) are inadequate to override these expectations. For these reasons, it is insufficient to consider lighting levels independently of other factors; this is a complex physical feature that has various interpretations over changes in the time of day and when combined with other physical features or social factors. These findings are consistent with the arguments put forth by Herbert and Davidson (1994) that prior knowledge of an area or the combination of lighting levels with other physical features affects how lighting levels are interpreted by participants. At the same time, however, their additional findings as well as those replicated by other researchers were not supported (Herbert & Davidson, 1994; Painter, 1996; Pain, MacFarlane, Turner, & Gill, 2006); high amounts of lighting were not always interpreted by participants as indicative of low crime areas, nor were low amounts of lighting always associated with high crime rates.

4.3.8 Juxtaposition to Familiar Areas of the City

Research into how fear of crime and opinions about crime are formed has predominantly focused on the role of the mass media. However, some researchers (such as Doob & MacDonald, 1979 and Doran & Lees, 2005) have argued that the mass media is not as influential as it has been made out to be, and that prior experience and knowledge of local crime rates are much more important when it comes to shaping perceptions. Furthermore, numerous others (such as Hay & Israel, 2001, Yanich, 2001, and Nabi & Sullivan, 2001) have argued that people construct their own “cognitive maps” of their home cities based on a wide variety of information sources that are then used to guide navigation around the city.

For example, Nabi and Sullivan (2001) argue that these cognitive maps are used to determine which areas are potentially dangerous and alternate routes around these areas can then be planned at a distance determined to be safe. As will be discussed in this section, it seems as though participants have, in fact, constructed their own geographies of crime using prior experience and anecdotal stories they have heard about certain spaces that act as cognitive maps that guide their movements throughout the city.

The final theme that emerged throughout the participant interviews to be discussed in this section is knowledge of a location's location relative to other familiar areas of the city, which will be referred to as juxtaposition to other areas. Many of the participants discussed their feelings not only towards the interview location itself, but also about areas they know to be nearby that they are already familiar with, either through past personal experience or through reputation. As expressed by Rachel, a participant interviewed at night:

Yeah, it's the look of everything sort of being really sparse. Um, also the fact that there's kind of a nice neighbourhood on the other side, and then you hit right here and there's sort of creepy like parking lots and old really, um, bad-looking buildings, that kind of thing, makes me definitely feel a little unsafe despite knowing that the Byward Market is five minutes away and there's tons of people and it's well-lit, so yeah, it definitely, I think the juxtaposition of that makes me feel a little bit more unsafe here. (Rachel, interviewed at night, December 14, 2011).

Rachel's impressions of location #5 were said to be formed not only by the physical and social characteristics of the location itself, but also by the fact that it existed in apparent opposition to two very different surrounding areas she was already familiar with. Rachel mentioned that she previously lived a few blocks away from location #5, so she was highly

familiar with this place and its surrounding area. Because location #5 was such a poorly-maintained and “creepy” place for Rachel, these feelings were amplified because it stood in stark contrast to other places nearby that she believed to be much safer. This could perhaps help explain why Rachel provided a higher rating for location #5 than for other interview stops that shared some of the same physical characteristics found at location #5.

In addition to potentially amplifying feelings of danger in areas believed to be high crime by contrasting these places with nearby areas believed to be safer, juxtaposition may also raise suspicions that potential criminals from “bad” neighbourhoods will spill over into “good” neighbourhoods. This dimension of the juxtaposition theme is highlighted by the following quotation provided by Amanda (a participant interviewed during the day) at location #3 when asked which factors influenced her rating decision:

Um, nothing really like in terms of physical buildings, like you can't really tell income level, it's more like a busy, more of a commercial street, but knowing that, you know, we're downtown, again, um, there's all different kinds of people and we're also fairly close to Vanier, which is a higher crime area... I think again the biggest thing is just the location, like where this street is in the city comparatively to Vanier. (Amanda, interviewed during the day, February 10, 2012).

This quotation further illustrates that opinions about a particular location can be affected by prior knowledge about nearby areas. Unlike the quotation provided by Rachel above, Amanda believed location #3 to be an otherwise safe location aside from its location in the city relative to an area she considers high crime. She makes no specific mention of any physical or social characteristics of location #3 she believes to be indicative of a high crime area. For Rachel, one of the most important factors to be considered when assessing

whether this area is a criminal or non-criminal one is its juxtaposition to another area of the city of which she has prior knowledge. This is also important because it suggests that participants recognized the potential mobility of crime; crime is linked not only to certain places possessing particular characteristics, but also to the type of people originating from these spaces who may move elsewhere in the city to find opportunities for crime.

On a substantially smaller scale, juxtaposition was also apparent at locations where single establishments were considered reputable and likely to have a protective effect on places within very close proximity. Although this idea is extremely similar to the idea that the presence of businesses can have a preventative effect over the neighbourhoods they are found within, it is important to note that in some cases, participants believed an extremely upscale or reputable establishment to have a positive influence over areas that would be considered unsafe or criminal without it. Expensive and well-established hotels are an example of this belief. The Chateau Laurier is visible from both locations #6 and #7, and was occasionally mentioned by participants as a safe place simply by virtue of its high cost per stay and wealthy clientele. Having this hotel within sightlines fostered the belief that a non-criminal population would be drawn to the area (as the wealthy clientele patronizing the hotel was assumed to be non-criminal) and that hotel staff would provide security on the property for both patrons and potential future patrons. Therefore, the juxtaposition between an area possessing the characteristics otherwise associated with crime or danger elsewhere and a reputable establishment can make that area seem less unsafe overall.

According to these findings, neighbourhoods with a poor reputation (such as Vanier) affect perceptions about surrounding areas on the participants' geography of crime. Areas within close proximity of neighbourhoods or establishments seen as highly criminal are

themselves viewed as areas where there is a high crime rate. Therefore, it appears as though the participants' geography of crime possesses transition zones between high and low crime areas much like those found on the OPS and OC maps. This transition zone appears to occur over a geographic distance similar to that found on the OC map; participants were wary of areas found between 4-6 blocks away from other areas believed to be highly criminal. Given that participants were able to mentally locate themselves in relation to areas they believed to be unsafe and that many participants stated that there were areas on the walking tour close to places they would normally never visit, it would appear that they have constructed a cognitive map of the city. And as explained by Nabi and Sullivan (2001), it appears as though participants use these cognitive maps as a means of self-protection by planning routes away from areas deemed dangerous and criminal.

In sum, it is important to consider not only the individual physical and social characteristics of a neighbourhood when attempting to explore how people form their opinions about the criminality of a particular area, but also how these factors can combine and interact with one another to shape perceptions. The qualitative interviews, researcher location ratings, and average participant ratings have provided an opportunity to look deeper into how beliefs about an area's crime rates are formed. This diverse data set revealed that for the most part, individual physical or social features of an area are not homogeneous across time or space. The exact same factors were afforded separate interpretations and varying degrees of importance depending on the time of day, prior knowledge of that place and its surrounding area, and when combined with a other physical and social features. In this sense, singular explanations linking one physical or social feature to high crime rates is overly simplistic, as the subtle nuances of individual interpretation are ultimately ignored.

4.4 Summary

This section has demonstrated that the OPS map, the OC map, and the participants have all constructed distinct geographies of crime in the city of Ottawa that share certain similarities while maintaining their own individual differences and subtle nuances. The clearest area of overlap and agreement between all three geographies of crime is the Byward Market, which was identified by all three sources as an extremely criminal space. Similarly, all three sources identified nearby residential and university campus spaces (specifically the Sandy Hill neighbourhood and University of Ottawa campus) to be non-criminal spaces.

The participant interviews allowed for an in-depth look at the factors that contribute to the construction of human geographies of crime and how these can potentially affect day-to-day interactions with city space. It was found that an examination of the physical characteristics of a space is insufficient for a full understanding of how geographies of crime are constructed. Although all of the participants mentioned physical characteristics such as cleanliness, maintenance, or lighting as factors that contributed to their assessments of a given place, they were most often interpreted as indicators of the underlying social characteristics present at that place. This suggests that the contentions made by Herbert and Davidson (1994) need not be applied only to lighting levels; when attempting to make connections between physical characteristics and crime (or fear of crime), these physical characteristics cannot be examined in isolation. Symbolic meaning of physical characteristics can shift over time and space, and when found in the presence of other physical characteristics that possess symbolic meaning. This was seen throughout the participant interviews, particularly with regards to lighting levels and their perceived connection to crime rates. Therefore, socially-constructed geographies of crime are formed

based on a wide variety of factors that each possess socially-constructed meaning in their own right. These symbolic meanings and connections have been overlooked in past statistical research, and most likely would have been overlooked in this thesis as well had GIS mapping techniques not been analyzed alongside qualitative data.

The fact that the participants' geography of crime so closely resembled the geographies of crime found on both the OPS and OC maps creates some serious issues for any theories and past research that argue that mass media consumption feeds directly and exclusively into public perceptions of crime (Ebring, Goldenberg, & Miller, 1980; Heath & Gilbert, 1996; Chiricos, Padgett, & Gertz, 2000; Koomen, Visser, & Stapel, 2000; Nabi & Sullivan, 2001; Yanich, 2001; Romer, Hall Jamieson, & Aday, 2003; Young, 2003; Weitzer & Kubrin, 2004). Such contentions are also problematic given that so few participants made reference to the media, and only a single reference was made by a participant to a specific criminal incident reported in the news. Major similarities between all three geographies of crime make it difficult to assert beyond speculation whether the participants' geography of crime was more likely influenced by the OPS or the OC geography of crime. Because the participants' justifications for their ratings were most often personal experience (or knowledge of a close friend or family member's experience) and very seldom a recollection of a media story or official police report, it is likely that the most influential sources contributing to the participants' geography of crime were personal lived experience and social interactions with other trusted Ottawa residents. This is not to say that police reports or media coverage has no effect over the construction of geographies of crime whatsoever, simply that these sources may be more minor contributors than has previously been asserted (Ebring, Goldenberg, & Miller, 1980; Sheley & Ashkins, 1980; Heath & Gilbert, 1996;

Chiricos, Padgett, & Gertz, 2000; Koomen, Visser, & Stapel, 2000; Nabi & Sullivan, 2000; Yanich, 2001; Romer, Hall Jamieson, & Aday, 2003; Young, 2003; Weitzer & Kubrin, 2004; Doob & MacDonald, 1979; Gross & Aday, 2003).

5.0 Conclusion

5.1 Summary of Findings

One of the original intentions of this thesis was to explore the various representations of the geographies of crime produced by the Ottawa Police Service, the *Ottawa Citizen* newspaper, and Ottawa residents. This thesis also set out to examine these geographies of crime in order to determine which types of spaces are most commonly identified as criminal or non-criminal (and whether or not these identifications of criminal or non-criminal spaces were shared between the three sources). The final purpose of this thesis was to explore how Ottawa residents assess their surroundings and make connections between the physical characteristics of a given space and crime.

The first goal of this thesis, identifying the individual geographies of crime presented by all three sources, was accomplished through the use of GIS mapping techniques. Raw data was obtained from OPS, newspaper articles were manually coded, and participants were taken on a walking tour of a section of downtown Ottawa in order to construct these recorded crime maps. When compared, it became clear that all three geographies of crime shared some major similarities. In particular, all three sources agreed that the general area of the Byward Market (extending from the Rideau Centre shopping mall to the southwest to the intersection of King Edward Avenue and Murray Street to the northeast) was an extremely high crime area. Within this small area of the city, certain areas stood out as having especially high crime rates according to all three sources. The intersection of King Edward Avenue and Murray Street (around which there is a highly visible homeless population, a number of abandoned and dilapidated buildings, and a substantial amount of lighting and new landscaping along the traffic median) was identified as one of these extremely high

crime places, as were the Rideau Centre shopping mall and the nightclub district found in the area of west York and George Streets near Sussex Drive. Only the OC map diverged in its identification of highly prominent crime hotspots; while the OC map identified all of the areas listed above as highly criminal spaces, the most criminal space in the city by far according to the OC map was the OPS headquarters located at the intersection of Elgin and Catherine Streets (which is found nearly 2 km away from the nearest boundary of the Byward Market).

Low crime (or non-criminal) areas of Ottawa's downtown core were the University of Ottawa campus, the residential neighbourhoods of Sandy Hill and Lowertown found to the immediate southeast and northwest of the Byward Market, and the government buildings to the west of the Byward Market according to all three sources.

However, there were interesting and important differences in the ways in which the three sources constructed spaces in Ottawa as (non)criminal. One of the more prominent discrepancies between the participants' geography of crime and those of the OPS and OC maps was found at location #7 (a courtyard outside of an upscale condominium and restaurant complex located on the northwest side of the intersection of Rideau Street and Sussex Drive). While the participants consistently identified this location as an extremely low crime place, both the OPS and OC maps locate this place within their major crime hotspots. Therefore, the OPS and OC maps agree that location #7 is one of the most highly criminal spaces in the downtown core, while participants believed it to be one of the least criminal places. This discrepancy provides an interesting insight into the participants' understanding of spatial markers of crime. Location #7 is upscale, clean, new, and is not usually occupied by any visibly homeless individuals (despite being located within very

close and visible proximity to other areas of the city believed by the participants to be highly criminal), all consistent markers of safety for my participants. Interestingly, this evaluation was maintained even though the police and the Ottawa Citizen represent the location as highly criminal, raising interesting questions about the resiliency of beliefs that criminality – and a privileged protection from criminality – is tied to socio-economic class. Accordingly, by exploring the similarities and differences between the three geographies of crime identified through the use of GIS and participant interviews, the second goal of this thesis outlined above was fulfilled and areas for further research were identified.

The final goal of this thesis was to explore how participants make assessments about an area's crime rates, which was fulfilled largely through the use of structured interviews conducted in the very spaces being assessed. Participants provided a wide variety of reasons for providing the numerical ratings that indicated the level of crime they believed to exist at each location. Among all participants, the most commonly provided responses were that criminal spaces are defined by a lack of cleanliness and maintenance, a large number of visibly homeless individuals, few other (non-homeless) individuals within visible distance, a lack of reputable or chain commercial space, poor lighting, and close geographic proximity to other areas of the city already believed to have high crime rates. Of all of these factors, the most frequently-cited associations with high crime rates were made at dirty and poorly maintained places, and at places with a highly visible homeless population. These physical characteristics interpreted by participants as indicators of criminal spaces can be described as the micro-level factors that contributed to participants' assessments.

Participants also identified a geographic feature of criminal and non-criminal spaces that can be described as occurring at the macro-level. Participants often mentioned pre-

existing beliefs and knowledge about other areas of the city known to be within close proximity of the location being assessed. In section 4.3.8, this was referred to as “juxtaposition to familiar areas of the city”. Areas known to be close to disreputable areas were themselves viewed negatively, as it was believed individuals from criminal neighbourhoods may travel to nearby neighbourhoods looking for opportunities to offend. Similarly, areas that seemed criminal for a variety of other reasons (for example, they possessed one or more physical features associated with crime mentioned above) were believed to be even *more* highly criminal if they existed within very close geographic proximity to areas believed to be non-criminal. Therefore, the contrast between areas believed to be criminal and areas believed to be non-criminal appeared to amplify the significance of any present physical characteristics commonly associated with high crime areas.

This thesis was conceptualized based on existing, yet conflicting, literature that states that fear of crime and perceptions of crime among city residents are largely influenced by either the mass media (according to the largest body of literature; see for example: Ebring, Goldenberg, & Miller, 1980; Sheley & Ashkins, 1981; Heath & Gilbert, 1996; Chiricos, Padgett, & Gertz, 2000; Koomen, Visser, & Stapel, 2000; Nabi & Sullivan, 2001; Yanich, 2001; Romer, Hall Jamieson, & Aday, 2003; Young, 2003; Weitzer & Kubrin, 2004; Banks, 2005) or knowledge of officially-recorded crime rates (Doob & MacDonald, 1979; Sheley & Ashkins, 1981; Gross & Aday, 2003). Given that the OC map so closely resembled the OPS map, it is difficult to determine which geography of crime was more similar to that of the participants. It is interesting to note, however, that it was extremely rare that participants made reference to any mass media story at all when providing their reasoning for their

numerical assessments, and only once did a participant recall a specific criminal incident reported in the news. This, combined with the fact that few participants stated that they actually kept up with local news on a regular basis, makes it highly unlikely that the participants' geography of crime was mainly influenced by the local mass media. This again raises interesting questions for further research.

Similarly, it appears that participants were not highly informed by officially-recorded crime statistics either. None of the participants indicated that they relied on a pre-existing knowledge of official municipal police reports as a reason for making an assessment. Rather, participants' geographies of crime were in large part influenced by their own social networks and/or personal experience. Anecdotal evidence provided by participants linking an area or place to a specific criminal incident was almost always the result of direct personal experience or stories provided by friends and family. Of course, this is not to say that officially-recorded crime statistics and the mass media have absolutely no role in the construction of the participants' geography of crime. Despite the growing skepticism and distrust of the mass media expressed by the participants, it is possible that mass media depictions and officially-recorded statistics still feed into the participants' geography of crime in a more indirect manner. But it does indicate that further research is needed to explore whether or not crime reports (from the news and from police reports) help shape an area's reputation within the broader community, which, at least for my participants, was a much more trusted source of information about crime in Ottawa than either the media or the police.

5.2 Limitations

Like all research endeavours, this thesis possesses a number of limitations, some of which were due to time constraints. Despite my best efforts to overcome these limitations, they will be recognized and discussed in this section.

As mentioned in the methodology chapter (section 3.0), the interview route was chosen based solely on the OC map. Ideally, the route would have been chosen following completion of both the OPS and OC maps, as this would have provided an opportunity for the participants' ratings to be compared to both maps in conjunction and separately. Had both maps been available before the interviews, the selection criteria for interview locations would have ensured that participants rated only those locations possessing one of the following characteristics: locations deemed criminal on both the OPS and OC maps, locations deemed non-criminal on both the OPS and OC map, locations deemed criminal on one map but not the other. Unfortunately, the data used to construct the OPS map was only obtained well after the interviews were already completed and, given the practical realities of a Masters project, it was not possible to wait for the data to arrive before beginning the recruitment process.

It was noted in the Chapter 2 (section 2.0) that past research into the use of GIS mapping techniques for the study of criminal activity and spatial patterns of crime requires sensitivity to time in addition to place. As this could only be completed through a longitudinal study conducted over the course of many months or even years, pursuing this line of inquiry was outside the scope of a Masters thesis. Additionally, the OPS and OC maps were not constructed using data rich enough to ascertain temporal patterns in recorded crimes and their locations. However, some attempts were made to remain sensitive to

shifting patterns over time, at least for the participant interviews. Half of the participants were interviewed at night and the other half was interviewed during the daylight hours. This was done with the intention of exploring how perceptions of crime differ over time of day and time of week. Furthermore, the structured interview questions allowed participants to use their imaginations in order to make their assessments, and these questions frequently revealed that participants possessed opinions of certain spaces that changed after dark. Therefore, while it was not possible to conduct an in-depth longitudinal study with the ability to assess spatiotemporal patterns in recorded crime, awareness of the potential importance of time influenced the research methods in a way that allowed for some degree of insight into the shifting of participants' opinions over both time and space.

A common criticism of both qualitative research in general and the snowball sampling technique used to recruit participants for this thesis is that they both provide results that cannot be generalized to the population at large (Biernacki & Waldorf, 1981). However, as discussed in section 3.3, my intention was not to present findings that could be generalized to the wider population. Instead, the goal was to provide rich description and an in-depth analysis of three very specific social representations. Therefore, it must be made clear that the analyses and findings communicated through this thesis are strictly of the social constructions communicated by the participants and the OPS and OC maps.

Lastly, the decision to conduct the participant interviews in the physical locations to be assessed meant that only a very small geographic slice of the city was assessed. The interview tour was completed on foot, so the route was planned so all interview locations were along a loop of reasonable walking distance. Even though the interview tour took an average of two hours to complete including walking and interview time, this tour covers only

a very small segment of the city relative to the size of Ottawa overall. The Byward Market, University of Ottawa, and Sandy Hill neighbourhoods were chosen for inclusion on the tour due to their physical and social diversity, their geographic proximity to one another, and the contrast between areas of extremely high and extremely low recorded crime rates according to the OC map. Although it would have been ideal to cover a much wider geographic space throughout the city of Ottawa, the chosen interview route was still spatially and socially diverse enough to allow for an uncovering of the participants' geography of crime.

5.3 Implications

The findings of this thesis have potentially important implications for the way that municipal governments and law enforcement organizations shape their crime prevention programs. It is significant that all three sources of information agreed that the highest crime areas of the city were those in which levels of cleanliness and maintenance were at their lowest. Of course, this does not mean that dirty and poorly-maintained places are where the most crimes occur *in reality* (as all three sources were used to explore their respective individual constructions) or that a lack of cleanliness and maintenance *cause* crime. In fact, most participants noted that they believed cleanliness and maintenance to be a physical indicator of social and community breakdown, which in turn caused (or at least, failed to prevent) crime. Certainly, past research has supported similar connections between dilapidation and high crime rates (Harries, 1976; Block, 1979; Sampson, 1985; Stark, 1987; Perkins et al., 1993; Harries, 2006).

The fact that all three information sources were found to agree on this connection in this thesis and that past research found similar connections has important implications for policy and policing initiatives. Cleaning up an area, demolishing abandoned buildings, and

ensuring proper maintenance cannot be expected to eradicate crime rates entirely, especially since it is not likely that these factors cause crime in the first place. Instead, it is possible that areas requiring special, individualized social programming can be introduced in areas where cleanliness and maintenance are severely lacking. Visual identification of these areas requiring special programming can speed up the process, as officially-recorded crime rate information is usually released annually.

Furthermore, the fact that most participants viewed dirty and poorly-maintained areas as being among the most criminal spaces in the city has implications for how they themselves interact with those spaces. Regardless of any potential connections to the “reality” of crime, participants stated that they were hesitant to travel to dirty or dilapidated spaces because they felt unsafe in these spaces. They were also wary of any individuals who lived or spent a significant amount of time in such areas. As discussed by Stark (1987), dilapidation can have a highly stigmatizing effect on a neighbourhood, which can in turn increase crime rates as any positive community role models may flee to other less-stigmatized areas of the city and the morale of area residents is further decreased.

The fact that dilapidation can have such a profound stigmatizing effect over a neighbourhood, which in turn affects crime rates according to Stark (1987), implies that there may be some value in investing in aesthetic improvements. If the stigma that comes with dilapidation and a lack of cleanliness is so powerful that it encourages crime, perhaps some maintenance and renovation initiatives can help improve public perceptions of that area and some amount of stigmatization will be lifted. If most city residents share the participants’ reluctance to visit dilapidated and dirty places out of fear of victimization, perhaps a more appealing appearance will invite outsiders free of fear or stigmatizing judgements.

5.4 Suggestions for Future Research

Given that a substantial amount of literature is dedicated to the effects of mass media on levels of fear of crime and comparably little is dedicated to exploring alternative influences over opinions and fears, future research into the fear of crime and perceptions of crime could focus on the role of social networks. As most of the participants cited personal experience, reputation, or anecdotal evidence provided by close friends or family members as reasons for their currently-held beliefs about the spatial distribution of crime in Ottawa, social networks and interactions are apparently an extremely important and influential source of information about crime for city residents. Future research into this domain could provide further insight into how social networks, reputation, and anecdotal evidence are used by people to form opinions about crime and its spatial distribution. Future research could also explore these social networks and reputations in order to determine how and why certain information about crime is disseminated while other information is never passed on.

Another avenue for future research could be a comparison of the three representations of the spatial distribution of crime in Ottawa over a much longer time period. As mentioned above, one of the limitations of this thesis was the inability to conduct this thesis over an extended period of time despite literature suggesting that crime patterns change over time and place. Future research could examine whether symbolic constructions of crime and individual geographies of crime change over time and place.

One aspect of a geography of crime that could have received greater attention was the notion of a transition zone between areas of very high and very low crime rates. Transition zones were most apparent on the OPS map due to the extremely high number of data points used in the map's construction. These zones became less clear on the OC map and

participants were not specifically asked about their own beliefs about crime rates. Therefore, any discussion of the transition zones characteristic of the participants' geography of crime was made solely based on the numerical ratings provided during the walking tour. Future research could focus more directly on beliefs about the existence of these transition zones and examine their implications for city residents.

A final suggestion for future research could be made with regards to the geography of certain types of crime. Again, it was unfeasible to conduct this thesis in a timely manner with sensitivity to crime type. The data used to construct the OPS map was extremely rich in such data; all points were categorized and subcategorized according to the charges laid at each geographic location. The data used to construct the OC map was not as detailed; the newspaper articles frequently mentioned a crime type (for example, a robbery) but did not often discuss which specific charges were laid or if multiple charges were laid at the same time. For the most part, participants focused on street level interpersonal and property crime, although one participant frequently made note of interpersonal crime that he believed to be occurring in private residences. Therefore, this thesis homogenized all criminal incidents as "crime" without specifically examining where certain types of crime were said to be more likely to occur than others. Future research into this domain could discern highly specific geographies of crime that identify not only recorded crime hotspots, but also (for example) recorded violent crime hotspots or recorded property crime hotspots. Such research could provide valuable information that could be used to shape law enforcement and crime prevention initiatives.

6.0 References

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Appendix A

Researcher Location Rating Scales

Table C1

Researcher Location Rating Scale Guide: Lighting, Maintenance/Dilapidation, and Prospect

Lighting	1	2	3	4	5	6	7	8	9	10
	Very dark	Dark	Somewhat Dark	Neutral	Neutral	Somewhat bright	Bright	Very bright	Extremely bright	
	No streetlights at all (0 per block) Obstructed lighting	Nearly no streetlights (1-2 visible per block) Obstructed lighting	Very few streetlights (3-5 per block) Obstructed lighting	Few streetlights (5-7 per block)	(8-10 per block)	(10-12 per block)	Moderate streetlight (13-15 per block)	Moderate streetlight (16-18 per block) Additional sources	Many streetlights (19-20 per block) Additional sources	Many streetlights (20+ per block) Additional sources
	<	<	<	<	Streetlighting on one side	Streetlighting on both sides	>	>	>	>
Maintenance / Dilapidation	1	2	3	4	5	6	7	8	9	10
	Extremely dilapidated	Very dilapidated	Dilapidated	Somewhat dilapidated	Neutral	Neutral	Somewhat well-kept	Well-kept	Very well-kept	Extremely well-kept
	Lots of litter, graffiti, many abandoned buildings, occupied buildings very neglected	Litter, graffiti, some abandoned buildings (3+), occupied buildings neglected	Litter, graffiti, abandoned buildings (1-2), occupied buildings neglected	Small amounts of litter, some graffiti, occupied buildings somewhat neglected	Traces of litter, graffiti, occupied buildings maintained	No litter, no graffiti, occupied buildings maintained	No litter, no graffiti, occupied buildings show signs of upkeep or renovation	No litter, no graffiti, occupied buildings visibly renovated	No litter, no graffiti, occupied buildings are in good condition, minor landscaping	No litter, no graffiti, buildings in excellent condition, significant landscaping
Prospect	1	2	3	4	5	6	7	8	9	10
	Extremely Obstructed	Very Obstructed	Obstructed	Somewhat Obstructed	Neutral	Neutral	Somewhat Clear	Clear	Very Clear	Clear
	Extremely high amount of physical obstructions, almost no view of surroundings	Very high amount of physical obstructions, very poor view of surroundings	High amount of physical obstructions, poor view of surroundings	Moderate amount of physical obstructions, poor view of surroundings	Moderate amount of physical obstructions, moderate view of surroundings	Low amount of physical obstructions, moderate view of surroundings	Low amount of physical obstructions, somewhat clear view of surroundings	Very low amount of physical obstructions, clear view of surroundings	Almost no physical obstructions, very clear view of surroundings	No physical obstructions, extremely clear view of surroundings

Table C2

Researcher Location Rating Scale Guide: Spatial Use

1	Purely residential (1:0)
2	Almost purely residential, trace commercial (4:1)
3	Mostly residential, some commercial (2:1)
4	Half residential, half commercial (1:1)
5	Mostly commercial, some residential (2:1)
6	Almost purely commercial, trace residential (4:1)
7	Purely commercial (1:0)
8	Other (specify)

Table C3

Researcher Location Rating Scale Guide: Visible Homelessness

1	Absent (0)
2	Low (1-2)
3	Moderate (2-4)
4	High (5-7)
5	Very high (8+)

Appendix B

Maps

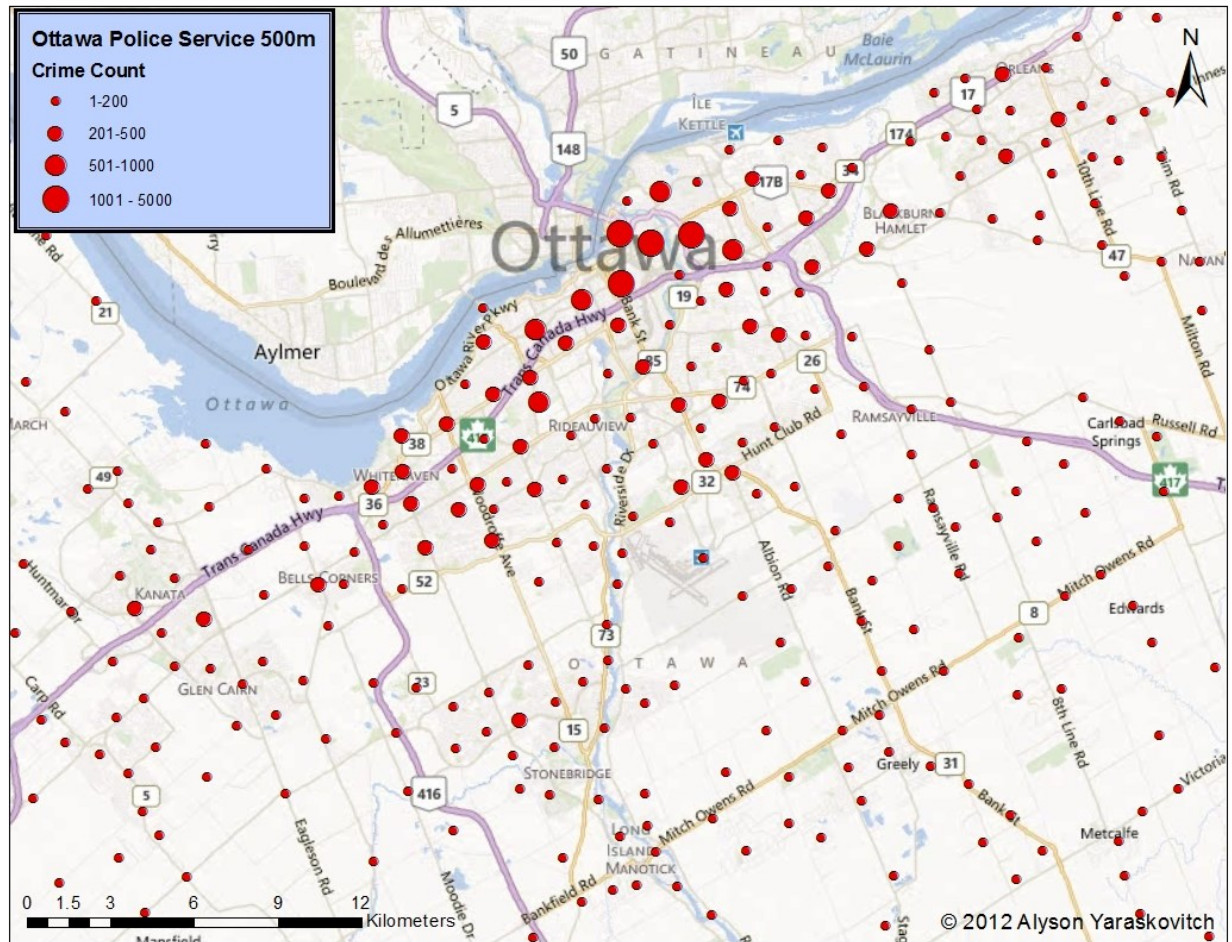


Figure 3. Ottawa Police Service collected crime count map of Ottawa (city-wide).

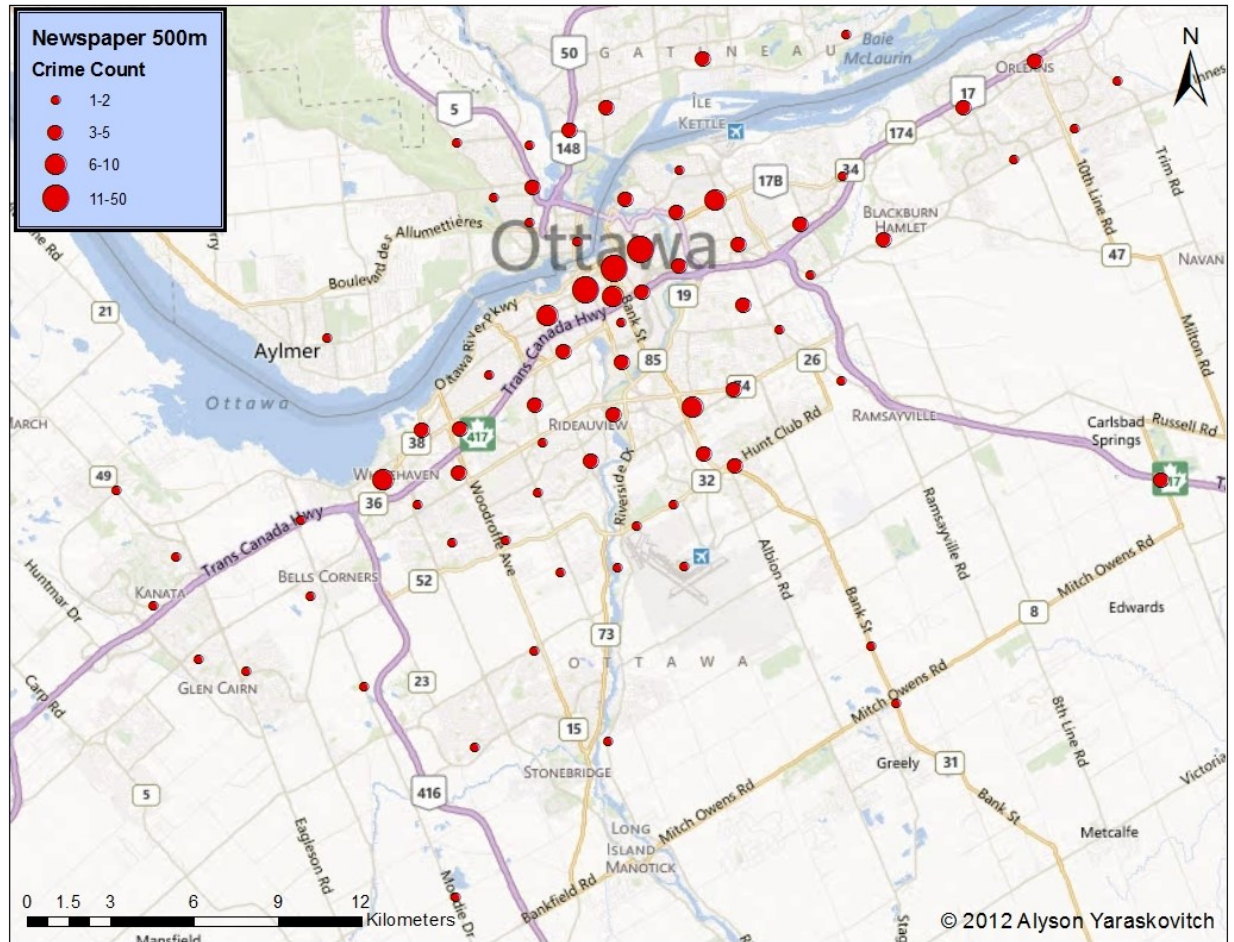


Figure 4. Ottawa Citizen collected crime count map of Ottawa (city-wide).

Appendix C

Interview Questions

Initial Questions

These questions were asked at the beginning of the interview, in a private setting at the University of Ottawa. Therefore, these questions were asked prior to the walking tour segment.

1. On a scale of 1 to 10, what overall level of crime do you think Ottawa has? Please note that a rating of 1 represents a very low crime rate, and 10 represents a very high crime rate.
2. What sort of crime do you think is most prevalent in Ottawa?
3. Where do you think these crimes occur in Ottawa?
4. Which Ottawa neighbourhoods do you believe to have the highest crime rates?
5. What is it about these neighbourhoods that make them high crime?
6. Which Ottawa neighbourhoods do you believe to have the lowest crime rates?
7. What is it about these neighbourhoods that make them low crime?
8. In which Ottawa neighbourhood do you live?
9. On a scale of 1 to 10, what overall level of crime do you think exists in your own Ottawa neighbourhood? Please note that a rating of 1 represents a very low crime rate, and 10 represents a very high crime rate.
10. What sorts of crime, if any, do you think are prevalent in your own Ottawa neighbourhood?

11. What is your most common source of information about crime in Ottawa? Check all that apply: Radio, hard copy newspaper, internet news, friends, family, police information, other.
 - a. Which is the second most common source?
12. Do you discuss crime with friends and family?
 - a. If so, how often, and with whom?
 - b. What do you talk about?
13. Do you do anything to protect yourself against crime?
 - a. If so, what things do you do?
14. In your opinion, do these things help? Why or why not?

Interview Stop Questions

These questions were asked at each of the eight locations during the walking tour segment of the interviews. Sub-questions (identified by letters) were only asked if a follow-up was required for a main question (identified by numbers)

1. Have you ever been here before?
 - a. If so, how often do you come here, and for what reason?
 - b. At what time of day do you usually visit this location?
2. On a scale of 1 to 10 (1 being low crime, 10 being high crime), how would you describe the crime rate in this area?
3. What factors affected your assessment of this area?
4. Did the physical features of this place factor into your assessment?
 - a. If so, which ones?

- b. Why do they indicate a higher/lower crime rate to you?
- 5. Did the presence of other people in this location affect your assessment?
 - a. If so, what are the characteristics of these people?
 - b. Why do they indicate a higher/lower crime rate to you?
- 6. What else, if anything, did you take into account when making your assessment of this area?
- 7. What sort of crimes do you think are the most prevalent in this area? Why?
- 8. What sort of crime do you feel most personally at risk of becoming involved in at this location? Why?
- 9. What could be done to this place to reduce its crime rate?
- 10. Is there anything else you would like to say about this area before moving on?

Appendix D

Ethics Approval

File Number: 08-11-24



Date (mm/dd/yyyy): 09/23/2011

Université d'Ottawa **University of Ottawa**
 Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice**Principal Investigator / Supervisor / Co-investigator(s) / Student(s)**

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>	<u>Role</u>
Valerie	Steeves	Social Sciences / Criminology	Supervisor
Alyson	Yaraskovitch	Social Sciences / Criminology	Student Researcher

File Number: 08-11-24

Type of Project: Master's Thesis

Title: Plotting Crime: Comparing Representations of the Spatial Distribution of Crime in an Urban Context

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
09/23/2011	09/22/2012	Ia

(Ia: Approval, Ib: Approval for initial stage only)

Special Conditions / Comments:

N/A

File Number: 08-11-24

Date (mm/dd/yyyy): 09/23/2011



Université d'Ottawa **University of Ottawa**
 Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

This is to confirm that the University of Ottawa Research Ethics Board identified above, which operates in accordance with the Tri-Council Policy Statement and other applicable laws and regulations in Ontario, has examined and approved the application for ethical approval for the above named research project as of the Ethics Approval Date indicated for the period above and subject to the conditions listed the section above entitled "Special Conditions / Comments".

During the course of the study the protocol may not be modified without prior written approval from the REB except when necessary to remove subjects from immediate endangerment or when the modification(s) pertain to only administrative or logistical components of the study (e.g. change of telephone number). Investigators must also promptly alert the REB of any changes which increase the risk to participant(s), any changes which considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project and safety of the participant(s). Modifications to the project, information/consent documentation, and/or recruitment documentation, should be submitted to this office for approval using the "Modification to research project" form available at: http://www.rges.uottawa.ca/ethics/application_dwn.asp

Please submit an annual status report to the Protocol Officer four weeks before the above-referenced expiry date to either close the file or request a renewal of ethics approval. This document can be found at: http://www.rges.uottawa.ca/ethics/application_dwn.asp

If you have any questions, please do not hesitate to contact the Ethics Office at extension 5387 or by e-mail at: ethics@uOttawa.ca.

Signature:

Protocol Officer for Ethics in Research
 For Barbara Graves, Chair of the Social Sciences and Humanities REB