Resource-Based Boomtowns: Crime, Fear, and Rural Justice Systems

An Edited Collection from the

Internet Journal of Criminology

2016
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Resource-Based Boomtowns: Crime, Fear, and Rural Justice Systems

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Reflecting on Boomtowns: Perspectives from Australia, Canada, and the United States

Rick Ruddell, University of Regina

Introduction

The focus of the articles that make up this special issue of the Internet Journal of Criminology is the crime-related effects of resource-based boomtowns, which have proven to be a challenge for rural law enforcement agencies across the globe. Although boomtowns are not a new phenomenon, as the value of natural resources such as oil, natural gas, potash, and gold rose throughout the 1990s and 2000s, exploration and extraction activities also increased and most of these endeavors were carried out in rural and remote areas. The rapid population growth and industrialization occurring in small towns and sparsely populated rural areas has led to numerous problems for local residents and their governments (Government of New Brunswick, 2012), and especially for law enforcement agencies (Archbold, Dahle, and Jordan, 2015).

There is no single shared definition of a boomtown. Malamud (1984), for instance, defines boomtowns as places where the population increases by 15 percent annually; whereas Archibald (2006) argues that to be considered a boomtown a place must experience a six percent population growth for at least three consecutive years. The actual increase of a population by itself, however, might not be as important as the composition of those changes. For example, many of the workers engaged in extracting natural resources are young men without ties to the places where these activities occur, which means that they are less likely than long-term residents to be governed by informal social controls (Freudenburg and Jones, 1991). Furthermore, resource-based boomtowns attract persons with serious criminal histories (Berger and Beckmann, 2010). Newcomers from other parts of the country are also likely to be more racially diverse than the local population, and long-time local residents may perceive this change as threatening (Broadway, 2000).

Housing is always a problem for outsiders moving into a boomtown as accommodations are scarce and expensive (Ennis, Tofa, and Finlayson, 2014). Some workers live in “man camps” that may house several thousand workers in a dorm-like setting (e.g., individual sleeping rooms but shared bathrooms, eating, and living areas). Other boomtown workers reside in makeshift arrangements, including in their vehicles or campgrounds, or they share space in apartments, hotels, or private homes (White, 2012). Depending on the location of the boom and the nature of their employment, other personnel will work up to two week shifts in employer-provided housing and then return home: drive-in and drive-out (DIDO) or fly-in and fly-out (FIFO). As a result of their temporary living arrangements, the dirty and dangerous nature of the work, and the long and unsocial hours, job turnover in boomtowns is typically high, and blue-collar workers are less likely to become fully established in these communities than their white-collar counterparts (Lawrie, Tonts, and Plummer, 2011).

A range of predictable events occurs in boomtowns as populations rise: minor criminal behavior such as assaults, disorderly conduct, and impaired driving increases (Ruddell, Jayasundara, Mayzer, and Heitkamp, 2014); traffic becomes congested and the number of serious collisions rises, along with other types of industrial accidents (Graham, et al., 2015; MND Report, 2012); and health, education, and social service agencies, as well as civic services, experience growing...
demands for services (Jayasundara, Heitkamp, and Ruddell, this issue; Weber, Geigle, and Barkdull, 2014). A rural community’s infrastructure seldom meets the needs of a population that might double in a few years, but local government leaders are often reluctant to permanently expand civic services or to hire more local personnel, including police officers (see Archbold, Dahle, Huyhn, and Mrozla, this issue; Jayasundara et al., this issue), given that many booms eventually bust (Jacobsen and Parker, 2014). Instead, makeshift and temporary responses to the boom, such as contract hiring and limited-term funding for services, are common.

Rapid social changes also influence how municipal services are delivered. Police respond to rising antisocial behavior, crime, and unintentional injuries with staffing levels that predate the population boom. Courts become congested with criminal and civil matters (Perry, 2007) and local jails are overcrowded (Lutey, 2014). The negative impacts of these booms, what the Government of New Brunswick (2012) calls “boomtown effects,” are also borne by workers in health, educational, and social service agencies. Some small communities, for example, lack full-time emergency service workers and their first responders to accidents and injuries are volunteers; the demands placed on these workers can be demoralizing over the long term (Cwiak et al., 2015). The extent of the social problems these workers confront depends somewhat on the nature of the boom, and can range from short-term disruptions caused by exploration activities that might only last a month or two to cycles of boom, bust, and recovery that might last decades (see Putz, Finken, and Goreham, 2011).

Learning from the Past

Resource-based boomtowns are not a new phenomenon and the most famous ones in North America took place in the California gold fields in the 1840s and the Klondike in the 1890s. A similar gold rush happened in Australia in the 1850s; “between 1851 and 1861, Victoria’s population mushroomed from just over 77,000 to more than 540,000” (Steffen, 1983: 429). The boomtown effects of these nineteenth-century boomtowns are similar to those experienced in recent years. While historians have long recognized the disruptions these events have on rural communities, social scientists have been comparatively slow to fully document the nature of antisocial behavior, crime, and disorder—as well as other economic, environmental, and social disruptions that reduce the quality of life for community members. One reason for this lack of attention is that booms typically occur in out-of-the-way places and most social scientists live in cities and are not very concerned about what happens in the countryside (Donnenmeyer and DeKeseredy, 2014). Moreover, although managing the boom represents a problem in search of an interdisciplinary solution, there has been very little research examining the entire scope of challenges that boomtowns pose. Instead, researchers tend to focus on specific issues pertaining to their respective fields.

In this special issue of the Internet Journal of Criminology, the contributors examine how rapid population growth and industrialization associated with booms created by the extraction of natural resources can increase fear among community members, reduce quality of life, and intensify antisocial behavior and crime. The personnel working within the local criminal justice system and their partners in human service agencies, including health, education, and welfare organizations, are often expected to confront these social problems (Heitkamp and Jayasundara, 2012). The misery experienced by residents of these places—both long-term residents and the newcomers—
can increase once organized crime and gangs begin to supply drugs and prostitutes to these communities. Taken together, a boomtown’s social problems and crime are often interconnected, and despite the fact that residents are often enriched economically, their quality of life decreases (Filteau, 2015). It is possible that reductions in quality of life might be mitigated if local governments are proactive as, in many respects, boomtown have a predictable life course based on three stages: development, production, and reclamation (Jacquet, 2009).

Recent research has focused on developing a framework for understanding boomtown growth (Ruddell, 2016). Most North American resource-based boomtowns follow a similar pattern that is driven by rapid population growth and industrialization:

- Rising commodity values increase exploration and extraction in rural or remote communities.
- The population increases rapidly: most newcomers are young males with little stake in the community.
- The number of public order offenses increases (e.g., alcohol-related crimes, drug abuse, impaired driving, and prostitution). Traffic congestion and the number of serious and fatal collisions increase.
- The population exceeds the local community’s ability to meet the demand for basic services such as housing: man camps with hundreds or thousands of residents are built in the surrounding areas.
- Demands for health, social, educational, and protective services, such as police, fire, and emergency medical services, increase.
- Well-being decreases with a rise in traffic collisions, pollution, noise, and industrial accidents. Visible signs of disorder, such as litter and graffiti, increase.
- Local residents express anger and frustration toward newcomers: tensions between long-term residents and newcomers grow.
- The police find it difficult to manage the demands of the growing population and crime: organized crime offenders and gang members supply residents with drugs and prostitutes.
- The economic boom is sustained, withers, or busts: the lifespan of many mines is 10 to 30 years, although busts also occur if commodity prices fall.
- If the boom is sustained, local services eventually match demands.
- The population composition changes as development turns into production: fewer employees are required and workers with families replace young single males. The turnover of short-term workers decreases and the population stabilizes.
- Crime and disorder decrease and the quality of life increases.

Although this life cycle has yet to been tested empirically, it provides us with a starting point for discussions about how boomtowns evolve. Perhaps more importantly, it could be used to develop an inventory of best practices that help local governments manage booms, as highlighted by Thomas, Smith, and Ortiz (this issue).

What is hidden in this description of the life cycle is the harm and misery that many individuals experience because local services are unable to cope with the demand for services. Police calls for service rise and serious assaults go unreported, incidents of domestic violence increase, and
aggressive and impaired driving can become commonplace. Reporters add to public’s fear of crime by sensationalizing crimes in boomtowns with labels such as the new Wild West (PR Newswire, 2015; Upton, 2016). But, do the crimes in boomtowns rise to the level of a Wild West? Examination of long-term crime trends in the oilfields in western North Dakota, for example, showed a substantial increase in crime, but most of those offenses tend to be minor (Ruddell et al., 2014).

About this Collection

The articles in this special issue of the Internet Journal of Criminology identify a number of social problems, and responses to those challenges, in areas impacted by natural resource extraction in Australia, Canada, and the United States. Each of these contributions extends our knowledge of about booms, fear, crime, and the justice system’s responses to those conditions. The first article, by Sarah Britto, explores issues related to fear of crime in Fort McMurray, Alberta, Canada’s largest boomtown. Her analysis uses information from seven waves of a community survey that were carried out annually between 2008 and 2014 to ask respondents about their perceptions about crime and law enforcement. Although Fort McMurray was ranked as having one of the top five highest crime severity indexes for Canadian cities in 2010 and 2012 the crime rate has been dropping. Despite those declines, respondents to the community surveys were more likely to report being fearful at night, while driving, and while alone in a public space, especially at night. Not surprisingly given the distorted sex ratio in a boomtown (where men outnumber women), Britto found that women were more fearful than their male counterparts.

Given those fears, how do boomtown residents manage the possibility of being victimized? Rick Ruddell and David May find that North Dakota boom county residents are arming themselves at an alarming rate. Using data obtained from the North Dakota Attorney General, we found that while the number of carrying concealed weapons (CCW) permits increased in non-boom counties by 402 percent between 2005 and 2013, it had grown by 649 percent in boom counties. Interestingly, the greatest increase in CCW permits in North Dakota was for women (Lott, Whitley, and Riley, 2015). Given that women in boomtowns are more fearful of crime than males (Britto, this issue), legally carrying a gun is one step they can take to feel safer. We speculate that one reason for the increased number of CCW permits issued in boom counties is that residents know they might wait a long time for police assistance, given how thinly stretched the police are in many of these towns. Indeed, a police response might be measured in hours in a large rural county.

Two articles describe the challenges faced by human service workers after a boom occurs. In a series of interviews and focus groups, Carol Archbold, Thorvald Dahle, Carol Huynh, and Thomas Mrozla collected the insights of 101 police officers working in the Bakken region—a shale formation encompassing some 200,000 square miles that extends beyond western North Dakota into Montana and the Canadian provinces of Manitoba and Saskatchewan—that underwent an oil boom starting in 2007. These scholars examine the impact of increasing workload demands on these officers and the levels of stress that accompany their work. Like their counterparts in other human service agencies, these officers can become overwhelmed and exhausted by their workload, which puts them at risk of burnout over the long term. These conditions ultimately drive personnel turnover, and some small police services become stuck in a cycle of recruiting and training new employees only to lose them to other agencies after they have gained a year or two of experience.
As a result, the creativity of the agency leaders and personnel is engaged in staffing rather than responding to the conditions that are burning out their officers.

Dheeshana Jayasundara, Thomasine Heitkamp, and Rick Ruddell also used interviews and focus groups of human service workers in the Bakken region. Of special interest in our study was how these workers responded to interpersonal violence in predominately rural areas—a significant problem as the survivors of this violence are often isolated (in terms of their living arrangements and a lack of family or other support networks), and resources to help them are scarce. The inability of the human service workers to aid these victims was a significant source of stress for the workers, especially when rising demands for service were not met with a corresponding increase in staffing or resources.

The last empirical study in this special issue, which was carried out by Kerry Carrington, Russell Hogg, and John Scott examines the intersection of alcohol abuse and violence in non-resident worker (NRW) populations in remote Australian mining communities. These scholars interviewed 96 individuals living in three mining regions, and they find that substance abuse and violence are endemic in the NRW populations. Even when these workers return home after their lengthy (e.g., two-week) shifts, their violence can be directed at their families. In addition to their empirical work, one key point these scholars raise is the need to move beyond the social disorganization and social disruption models that have influenced the study of boomtowns since the 1980s. Carrington, Hogg, and Scott identify some potential avenues of theoretical development in their description of models of masculinity and power-relationships.

Looking Toward the Future

In the last article, Matthew Thomas, Susan Smith, and Natalie Ortiz share their insights into the current state of boomtown research and identify some key research questions that remain unanswered. One of the challenges of scholars carrying out research on booms is that we have been slow to translate that knowledge into strategies that government officials can use to mitigate the worst of the boomtown effects. As many of these officials are from small and rural communities, they often lack the knowledge and skills to manage the boom and advocate on their community’s behalf with senior levels of government and the corporations that profit from the boom (Morrison, Wilson, and Bell, 2012). Thomas, Smith, and Ortiz argue that developing an inventory of best practices in responding to the population increase and industrialization associated with these booms would help these officials cope with the increased demand for local services. These scholars also raise an interesting point about the corresponding need for communities to learn about strategies to manage the economic busts that are all too common when it comes to mining industries.

Altogether, the contributions of the scholars participating in this special issue shed light on the current boom, but by mid-2016 decreases in commodity prices that started in 2014-2015 have contributed to workforce reductions throughout North America, especially in small towns or cities that depend on a single industry. Jacobsen and Parker (2014) remind us of the short- and long-term impacts of a bust on rural communities, including unemployment and the flight of capital back to the cities, which can turn a boomtown into a “doom town.” Although many North Americans in the oil and gas industries are pessimistic about the current decline, as one Texas oilman remarked,
“This is about the fourth or fifth boom and bust I’ve seen and we’ve always come around. That’s the business—if it’s good it’s really good, and it’s bad it’s really bad” (cited in Marquez, 2016). Thus, while the boomtown effects have been reduced in North America throughout 2015 and 2016, there will inevitably be future booms. The hope of the contributors to this special edition of the Internet Journal of Criminology is that our efforts will lead to a better understanding of the boom–crime relationships and policymakers will use that knowledge to mitigate those impacts.

Peer Review

The Internet Journal of Criminology has an open peer review process and all of the comments from the reviewers are published at the end of the collection. All five peer-reviewed manuscripts were first reviewed by the guest editor and then sent to two blind reviewers using a common form. The Introduction (‘Reflecting on boomtowns’) and concluding article (‘Echos of the boom’) were not peer reviewed.

References


Finding the Town Amidst the Boom: 
Public Perceptions of Safety and Police Priorities in a Boomtown Milieu

Sarah Britto, University of Regina

Abstract

Fear of crime and concern about public safety are often presented as nasty side effects of residing in a boomtown. Large population growth, frequent residential turnover, and the strain on a community’s physical and social infrastructure associated with boomtowns are all thought to contribute to social disorganization and a general sense of malaise related to perceived declining values and morality of community residents. Using secondary data from seven waves of a community survey of a Canadian oilsands boomtown and municipal crime data, this study examines crime trends, public safety concerns, and perceived police priorities. Gender differences in perceptions of public safety in the boomtown milieu will also be examined. The paper concludes with a discussion of how community perceptions may inform the work of community organizations and police departments.

Key words: fear of crime, boomtown, police priorities, gender

Introduction

Resource-based boomtowns are culturally, socially, and economically unique places. The overwhelming majority of boomtown growth is based on the potential economic prosperity found in the form of natural resources (e.g., gold or oil), followed by individuals and businesses that move in to provide goods and services for those working in the resource-extraction industry. These boomtown economies can provide lifelines to the declining economic viability of rural areas, but the accompanying influx of individuals needed to make a boomtown operational can also prove disruptive to existing communities (Crank, Giacomazzi, and Heck, 2003; Fernando and Cooley, 2015). Rapid change, population growth, strains on an existing community’s physical infrastructure and social services, and a huge influx of financial capital all combine to create an atypical community milieu that also affects policy and criminal justice in the community. Research on public perceptions of safety and police priorities can help inform criminal justice practice in boomtowns.

Media portrayals of the booms and busts associated with resource-extraction boomtowns are a study in caricatures. While such images usually represent general characteristics of the town, they also often grossly exaggerate other characteristics. The characterization of boomtowns as the Wild West, filled with immigrants, young men, and crime is one such example. Angel (2014:2) describes a stereotypical boomtown scene: “boisterous crowds of young, single men with little education, massive pickup trucks “jacked up to the moon”—and fistfuls of cash—is what a lot of people think of when it comes to the face of oil booms. It is generally believed that when these ‘work-hard, play-hard’ guys finish their shifts, they take to binge drinking, drugging and reckless driving—triggering spikes in drug dealers, prostitutes, bar brawls, sexual assaults and car wrecks.” These images, in fact, are not representative of the diversity of behaviors and characteristics of boomtown residents, and they reinforce stereotypes that tend to undermine the work ethic and
realities of everyday challenges faced by workers residing in boomtowns (Angel, 2014). Nonetheless, even long-time residents can be influenced by such representations and may come to fear for their safety during a boom.

This study will examine the perceived safety of residents in the oil-based boomtown of the Regional Municipality of Wood Buffalo (RMWB), more commonly known as Fort McMurray, Alberta between 2008 and 2014. Fort McMurray was a Hudson’s Bay Company post in 1870, but the population of the rural outpost remained well below 3,000 until it exploded with the expansion of the oilsands industry in the 1960s. Fort McMurray’s population tripled by the early 1970s and tripled again by the 1980s (Fort McMurray, 2015). This sustained growth led to the amalgamation of Fort McMurray and several other towns into the RMWB in 1995 (Boyd, 2012). The unofficial 2015 census count for RMWB is 125,032 residents (Regional Municipality of Wood Buffalo, 2016). During the era when the residential surveys were conducted, the RMWB was experiencing a prolonged period of expansion and economic prosperity. However, a drastic decline in oil prices in 2014 resulted in an economic “bust” in the region.

Few studies on boomtowns have looked at perceptions of safety over time during a prolonged period of population and economic expansion. Some scholars have suggested that the stability of change in boomtowns such as RMWB becomes normalized (Foster and Taylor, 2013; O’Connor, 2015). If this is the case, it is possible that perceptions of crime, safety, and police priorities stabilize as well. This study begins by examining trends in perceptions of safety over time, relative to changes in the crime rate. Next, perceptions of safety in several different situations and locations, as well as gender differences, are described. Finally, the residents’ perceptions of police priorities are compared with actual police calls in the RMWB. Analysis of residents’ perceptions of crime and policing provides information for municipalities to develop public safety programs and initiatives that address the needs of respondents. The results of these analyses may be prescriptive in a number of different settings where public safety officials and city planners are planning for growth.

**Literature Review**

**Boomtown Crime**

Boomtowns have long been hypothesized to lead to increased crime. Scholars argue that the influx of young men, who are often living away from their families, working in resource-extraction industries are socially disruptive to boomtown communities (Archbold, Dahle, and Jordan, 2014; Brown, Perkins, and Brown, 2014; Smith, Krannich, and Hunter, 2001). An early meta-analysis of boomtown crime found that the crime rate increased three times faster than the population increased (Freudenburg and Jones, 1991). More recent research has also found that booms are associated with increases in crime (Carrington, McIntosh, and Scott, 2010; Ortiz, Thomas, and Ruddell, 2007; Petkova-Timmer et al., 2009). These studies utilized case study methodology, official data coupled with interviews with police officers, and qualitative impact assessments, respectively. Despite this strong evidence of a boom-crime relationship, other scholars have found this relationship to be tenuous, and largely dependent on the accuracy of population counts utilized to calculate crime rates.

A longitudinal study of Louisiana boom parishes, which used US Census data on the percentage of people working in the oil and gas industry and the percentage of wages derived from oil and gas
as well as uniform crime report (UCR) crime data, failed to support the boom-crime hypothesis (Luthra et. al, 2007). Similarly, using guided conversation methodology with residents of boomtowns, Forsyth, Luthra, and Bankston (2007) found oil booms to be unrelated to perceptions of crime. Looking at calls for service to the Pennsylvania State Police and Uniform Crime Reports before and after Marcellus Shale drilling, Kowalski and Zajac (2012) did not find a significant increase in crime for boom counties in Pennsylvania. Using county-level official crime data, Ruddell et al. (2014) found that neither property nor violent crime were associated with oil or natural gas production in Montana and North Dakota. Taken together, this research makes clear that the population increases associated with booms are also associated with increased levels of crime, but whether or not population increases necessarily result in an increase in the crime rate (or crime levels that are disproportionate to the increase in population size) is still an open question. Furthermore, the answer to this question may be dependent on how growth is managed in particular boomtowns.

**Fear of Crime in Boomtowns**

Although very few longitudinal studies of fear of crime exist, based on the trends noted in General Social Surveys (2011) and Gallup polls (2011), there does not appear to be a consistent relationship between crime and fear of crime (Britto, 2011). Yet perceived crime in a community is a consistent predictor of fear of crime (Brown et al., 2004; Hinkle and Weisburg, 2008; Gray, Jackson and Farrall, 2011). Crank, Giacomazzi, and Heck (2003), studying an Idaho boomtown using random telephone survey data, found that residents who perceived youth disorder, criminal behavior, and a drug or gang problem in their communities were more afraid of crime.

In a longitudinal study of four western rural boomtowns in the United States, Smith, Krannich, and Hunter (2001) found that boom periods were related to decreasing perceptions of safety and increases in fear of crime, but the reverse was true of post-boom periods. The authors conclude that although boom periods are associated with disruptive conditions, the growth frequently stabilizes, and communities are able to adjust during post-boom periods. In a qualitative study, Fernando and Cooley (2015) found that changes associated with a boomtown economy led long-term residents to experience a decrease in perceptions of safety and trust in others. The impact on QoL for these residents was mediated by whether or not the boom economy benefited them economically.

The transition from a rural area where everyone knows everyone else to a town where large groups of people are seen as outsiders with different values can be disruptive to a community’s sense of order (Archbold et al., 2014; Carrington et al., 2010). Because many workers fly-in and fly-out (FIFO) or drive-in and drive-out (DIDO) and take the money that they have earned locally out with them, they may not be seen as contributing to the local community (Carrington et al., 2010). This sense of threat—the concern about the motivations and possible criminal behavior of others—may be magnified when “migrant workers” are transnational workers whose race, ethnicity, religious backgrounds, and cultural practices may differ from relatively homogeneous long-term residents (Archbold et al., 2014; Heitkamp and Jayasundara, 2012a, 2012b; Foster and Taylor, 2013). Utilizing qualitative interviews with temporary foreign workers, Foster and Taylor (2013) describe a prevailing sense of exclusion where these workers were marginalized in the community. Similarly, Archbold, Dahle, and Jordan (2014) note that cultural differences between long-term residents and workers have led to more “suspicious person” calls to police. Finally, fear of crime
in boomtowns may reflect a pattern of neighborhood problems unique to boomtowns. A study by Ruddell and Ortiz (2015) that involved the analysis of longitudinal secondary data from a series of telephone surveys found that residents of Fort McMurray, Alberta most feared being victimized on public transportation or while driving, rather than violent crime. These more nuanced analyses suggest the importance of looking at the specific fears of boomtown residents in the context of the community problems that they are facing.

**Police Priorities in Boomtowns**

The development of a boomtown and the busts that are periodically associated with economies that are largely dependent on one industry present a number of challenges to police departments. As the population of an area grows, often dramatically, police must respond to more calls. The trends for the types of services that are needed by community members may also change (Archbold et al., 2014; Dahle and Archbold, 2015). A mixed-methods study using face-to-face interviews with police officers and the examination of official data found an increase in traffic-related calls, from speeding and reckless driving to traffic jams and alcohol-related calls; overall, the sheer number of people on roads designed for rural populations creates havoc for police departments (Archbold et al., 2014). Two other studies using longitudinal official police data and census data found similar trends in Canada (Ruddell and Ortiz, 2015) and the United States (Ruddell et al., 2014).

Interviews with police personnel in a U.S. boomtown found that while transitioning from rural police departments to departments that match the size and resources appropriate for the growing size of a boomtown, police officers must respond to more calls than their counterparts in towns with stable populations (Dahle and Archbold, 2015). Ruddell (2011: 1) notes that “demands on a community’s physical infrastructure (such as water, sewage, waste, housing, roads, and transportation), as well as health, social, education, and protective services (emergency medical, fire, and law enforcement) increase but often there is a political reluctance to invest in these services as population increases are sometimes short-lived, or followed by an economic bust.” This lag in resource provision can impact residents’ perceptions of police service, as well as the morale of police officers. It can also change the nature of policing by decreasing crime prevention efforts and interactions with community members and organizations in order to focus on incoming calls for immediate service (Dahle and Archbold, 2015). Assessing residents’ perceptions of safety, neighborhood concerns, and police priorities can be an important part of ongoing dialogue between community members and public safety officials.

In an attempt to add to this growing body of literature, this study addresses the following research questions using data from RMWB:

1. How has the oilsands boom in Northern Alberta contributed to the crime rate in RMWB?
2. Do residents of boomtowns perceive different situations in their community to be safe?
   a. How are these differences structure by gender?
3. How have perceptions of police priorities changed in a community experiencing an extended period of economic expansion related to the oil-extraction industry?

**Methodology**
This study uses secondary data from seven waves of the Regional Municipality of Wood Buffalo Citizen Survey conducted by Banister Research & Consulting (2013, 2014) to assess RMWB residents’ perceptions of safety and police priorities in their community. The local RMWB government commissioned yearly surveys of adult residents between 2008 and 2014. In 2008, the initial survey garnered 1,000 respondents using a combination of random digit dialing from the telephone directory of RMWB and quotas to ensure equal representation of both genders. This technique is more likely to capture long-term residents than FIFO or DIDO workers who are less likely to be in the telephone directory. In the following years, 500 respondents were surveyed using the same techniques. In 2014, a cooperation rate of 23 percent was realized, which means that interviews were completed for 23 percent of all contacts with eligible respondents. Cases of unknown eligibility (busy signals, no answer, and answering machines) and known ineligibility (business, fax, and not-in-service) were excluded from this calculation as recommended by the American Association for Public Opinion Research (1998). This was well above the average response rate reported by the Pew Research Center (2012), but some caution should be taken when making generalizations from the sample to the population due to the possibility of non-response bias.

A comparison of key demographic variable values of the sample with municipal census values (Regional Municipality of Wood Buffalo, 2012) can be found in Table 1 and shows only minor variations, suggesting that the sample largely mirrors the actual population of RMWB. Married individuals, individuals with more education, and individuals who did not reveal their income were slightly overrepresented in the sample. Reluctance to reveal income data is a common shortcoming in survey research (Dillman, Smyth, and Christian, 2008). These minor variations are quite typical for studies utilizing telephone survey methodology (Lavrakas, 1987; Tuckel and O’Neill, 2002). Survey respondents were significantly less likely to have moved to RMWB in the last year (2% compared with 9%). This likely leads to an underrepresentation of individuals living in the work camps or “man-camps” associated with the oilsands industry in the area. Individuals living in work camps are less likely to be listed in the RMWB telephone directory and more likely to do shift work, which reduces their chance of being captured in the survey. Fernando and Cooley (2015) note that permanent residents of boomtowns are more likely to experience a decline in quality of life related issues, and the results of this study should be interpreted with the understanding that long-term residents are overrepresented in the sample.

Crime data in the form of crime severity indexes is taken from Incident-Based Uniform Crime Reporting Survey (UCR2) data available at Statistics Canada (2015). Canada’s crime severity index is somewhat distinctive as it is a single measure that indicates the volume and seriousness of crime based on police-reported crime (Wallace et al., 2009). Work-camp-resident-adjusted crime rates and data on police service calls come from Boyd’s (2012) Crime in the Regional Municipality of Wood Buffalo report.

| Table 1. Demographic Comparison of Sample Respondents and Wood Buffalo Municipal Census Population Estimates. |
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The analysis focuses on three main perceptual variables: fear of crime, neighborhood concerns, and police priorities. There is a long history of debate in the area of fear of crime over how to best operationalize the variable. There are three general dimensions of fear of crime: affective, behavioral, and cognitive (Ferraro, 1995). Affective measures of fear tap into the emotion of fear; behavioral measures of fear tap into individual responses to fear; and cognitive measures of fear capture individual assessments of danger in particular situations and locations (Jackson and Gousseti, 2014). For this particular study, several cognitive measures of fear are utilized. The measures are similar to the Canadian General Social Survey measures on victimization that is done...
every five years, but assess concern about safety in a larger number of situations and locations. Specifically, the Banister Research & Consulting (2014) survey asked respondents about the following:

Please rate each of the following based on your feeling of safety in your neighborhood during the day whether you feel very safe, somewhat safe, somewhat unsafe, or very unsafe during daylight hours (and a separate set of questions for nighttime hours) for each of the following:

- In your residence
- In your local mall or plaza
- In public buildings
- While driving
- While walking in your neighbourhood
- While walking in parks
- While waiting for or using public transit
- Taking a taxi by yourself

Two open-ended questions assessed neighborhood concerns and police priorities. First, respondents were asked about any issues that were currently a problem in their neighborhood and then they were asked, “In your opinion what are the three most important policing issues in the RMWB as a whole?”

Results

Crime data is routinely available for boomtowns in Canada, much like other municipalities and other countries. Unfortunately, crime rates are typically reported based on nationwide census data for the population of the town, which does not regularly include workers who live in work camps or share residency with another community because they fly-in and fly-out or drive-in and drive-out. Not including these long-term workers in the population base results in a significant overestimation of the crime rate in many boomtowns. This method of calculation earned RMWB the ranking of the fifth most dangerous city in all of Canada in 2010 and 2012 (Maclean’s, 2010, 2012). A report by Boyd (2012) challenged this ranking and demonstrated that when the approximately 40,000 stable workers residing in work camps in the RMWB were included in the population base, the crime rates for the RMWB were unremarkable. In fact, the crime rate in 2012 for the RMWB—6,633 per 100,000 criminal code violations, excluding traffic—was significantly lower than the province of Alberta’s average (7,466) (although it was higher than the Canadian average of 5,588).

What adds relevance to this finding is that while crime rates are declining across Canada, the rate of decline (relative to 10 years ago) is much faster in the RMWB than comparison cities within Canada (Boyd, 2012). Two crimes where these trends were not apparent were motor vehicle thefts and cocaine distribution. The RMWB did experience a decline in motor vehicle thefts (-9 %) between 2002 and 2012, but the decline for comparison cities, Alberta (-47%) and Canada (-59%) was much sharper. Cocaine trafficking appears to be a growing problem in the RMWB with a 19 percent increase in reported cocaine trafficking between 2002 and 2012. This increase was less than the Canadian average (23%) and the Alberta average (21%) for the same time period but
significantly higher than comparison cities such as Kelowna, British Columbia (-38%), Saanich, British Columbia, (-27%) and Thunder Bay, Ontario (-30%) (Boyd, 2012).

Despite media reports of a Wild West, crime-ridden atmosphere in boomtowns, crime statistics evidence declining crime rates in RMWB that mirror or exceed declining crime rates across the country (Boyd, 2012). One survey item measured citizens’ perceptions of the crime problem in their communities by asking “Would you say the level of crime in your neighborhood has increased, decreased, or remained the same?” Following a similar trend as the crime rates discussed above, the percentage of individuals who perceive crime as increasing in RMWB has steadily declined from 49 percent in 2008 to 19 percent in 2014 (Banister Research & Consulting, 2014).

Figure 1. Crime Severity Index for the Regional Municipality of Wood Buffalo and Proportion of Residents Reporting High Levels of Perceived Safety.

![Crime Severity Index and Perceived Safety](image)


An alternative way to explore crime in a community is to examine the crime severity index. Low numbers on the index indicate that serious crime constitutes a small percentage of reported crime in a community, and high numbers indicate that serious crime makes up a larger percentage of reported crimes. Figure 1 includes both the UCR2 crime severity index and the RMWB Citizen Survey average perception of safety for the years 2008 to 2014. The crime severity index for RMWB has been steadily declining since 2014. The percent of RMWB residents who perceive their communities as “safe” or “very safe” increased significantly between 2008 and 2009 (62% and 70%, respectively), but has remained relatively constant since that time. These findings suggest that the oilsands boom in Northern Alberta may have increased the number of crimes in RMWB but it has not disproportionately increased the crime rate when non-permanent or temporary residents are included in the population base.

Table 2. Percentage of Respondents (Three-Year Average of 2012 to 2014) who Feel Safe or Very Safe during the Daytime and Nighttime and Gender Differences.
<table>
<thead>
<tr>
<th>Location</th>
<th>Daytime</th>
<th>Nighttime</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your residence</td>
<td>97</td>
<td>92</td>
</tr>
<tr>
<td>In public buildings</td>
<td>95</td>
<td>78</td>
</tr>
<tr>
<td>While walking in your neighborhood</td>
<td>90</td>
<td>70*</td>
</tr>
<tr>
<td>In your local mall or plaza</td>
<td>90</td>
<td>73*</td>
</tr>
<tr>
<td>While walking in parks</td>
<td>85*</td>
<td>55*</td>
</tr>
<tr>
<td>While driving</td>
<td>79</td>
<td>63</td>
</tr>
<tr>
<td>In your downtown area</td>
<td>78</td>
<td>41*</td>
</tr>
<tr>
<td>Taking a taxi by yourself</td>
<td>84*</td>
<td>42*</td>
</tr>
<tr>
<td>While waiting/using public transport</td>
<td>47*</td>
<td>30*</td>
</tr>
</tbody>
</table>

* Indicates a statistically significant difference ($p \leq .05$) within categories between male and female respondents with female respondents showing lower perceptions of safety.

Source: Banister Research & Consulting (2014)

Examining perceptions of safety more closely, Table 2 looks at three-year averages of the percentage of RMWB respondents who perceive their communities as “safe” or “very safe” and includes a notation of cells in which the male and female respondents’ averages are significantly different from one another and address research questions 2 and 2a. Overall, residents of RMWB feel quite safe and have been able to find a sense of community amidst the boom. Three findings are clear: (1) RMWB respondents feel much safer during daytime hours, regardless of their location or the activity they are participating in; (2) some RMWB respondents are concerned with their safety when driving in the municipality, with 79 percent reporting feeling safe driving during the daytime and only 63 percent reporting feeling safe during nighttime driving; (3) activities where one may find themselves in a public place alone (such as walking in parks, in a downtown area, taking a taxi, and waiting to use or using public transportation), are fear invoking, particularly at night. Significant gender differences are found in all of these circumstances. During the day, men feel safer than women walking in parks (91% compared to 83%), while waiting for or using public transit (54% compared to 39%), and while taking a taxi by themselves (70% compared to 37%). Similarly, men feel safer than women at night while walking in a neighborhood (78% compared to 64%), in a mall or plaza (79% compared to 70%), while walking in parks (67% compared to females 37%), and in a downtown area (51% compared to 36%). The largest gender differences occur after dark while waiting for or using transportation: the percentage of women who report feeling safe is less than half of the percentage of men who report feeling safe while waiting for or using public transit (43% compared to 20%) and while taking a taxi by themselves (58% compared to 25%). It is likely that, for women, concern of being in a public place alone at night triggers fear of rape (Cobbina, Miller, and Brunson, 2008; Cook and Fox, 2012; Dobbs, Waid, and Shelley, 2009). This phenomenon is called a perceptually contemporaneous offense (Warr, 1984) or the “shadow of sexual assault” (Ferraro, 1995). This is when the fear of one crime is linked to the fear of another, usually more serious crime, because of the belief that one crime
may lead to another offence. For example, many individuals fear home break-ins because of the possibility of rape posed by the intruder. Numerous studies have found that the fear of rape largely explains the fear gap between men and women (Ferraro, 1995; Hilinski, 2009; Lane and Fox, 2013; Ugwu and Britto, 2015).

Table 3. Respondents’ Top 10 Neighborhood Concerns and Police Priorities, 2008 to 2014.

<table>
<thead>
<tr>
<th>Panel A: Top ten neighborhood concerns</th>
<th>2008 (%)</th>
<th>2009 (%)</th>
<th>2010 (%)</th>
<th>2011 (%)</th>
<th>2012 (%)</th>
<th>2013 (%)</th>
<th>2014 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speeding/aggressive driving</td>
<td>42</td>
<td>47</td>
<td>51</td>
<td>17</td>
<td>18</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Drugs</td>
<td>36</td>
<td>33</td>
<td>26</td>
<td>21</td>
<td>19</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Residential burglaries</td>
<td>23</td>
<td>23</td>
<td>19</td>
<td>12</td>
<td>10</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Property damage/graffiti</td>
<td>12</td>
<td>12</td>
<td>16</td>
<td>15</td>
<td>12</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>Motor vehicle thefts</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td>11</td>
<td>14</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Youth behavior (e.g., loitering)</td>
<td>12</td>
<td>14</td>
<td>15</td>
<td>8</td>
<td>14</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Other thefts</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Crime (general)</td>
<td>7</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Guns</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: Respondents' top ten perceived police priorities</th>
<th>2008 (%)</th>
<th>2009 (%)</th>
<th>2010 (%)</th>
<th>2011 (%)</th>
<th>2012 (%)</th>
<th>2013 (%)</th>
<th>2014 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drugs</td>
<td>67</td>
<td>70</td>
<td>64</td>
<td>56</td>
<td>48</td>
<td>41</td>
<td>38</td>
</tr>
<tr>
<td>Speeding/aggressive driving</td>
<td>45</td>
<td>50</td>
<td>51</td>
<td>46</td>
<td>45</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>Drinking and driving</td>
<td>15</td>
<td>16</td>
<td>21</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Gangs</td>
<td>17</td>
<td>17</td>
<td>13</td>
<td>10</td>
<td>6</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Assaults</td>
<td>11</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Crime (general)</td>
<td>8</td>
<td>11</td>
<td>7</td>
<td>15</td>
<td>10</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Residential burglaries</td>
<td>10</td>
<td>8</td>
<td>11</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Youth behavior (e.g., loitering)</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Motor vehicle thefts</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Crime prevention</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Banister Research & Consulting (2013, 2014)

In addition to asking respondents directly about their individual perceptions of safety, it is useful to assess their crime-related neighborhood concerns and their perceptions of the most important policing issues in their community. These questions allow respondents to express concern not only about their own safety but also about the well-being of others, property, and a sense of community. This section addresses my third research question: How have perceptions of police priorities changed in a community experiencing an extended period of economic expansion related to the oil-extraction industry? Panel A of Table 3 lists the top ten neighborhood concerns in RMWB. Speeding and aggressive driving topped the list until 2010, with approximately half of the
respondents noting this as their top concern. Since then, drugs topped the list in 2011 and 2012, property damage in 2013, and then concern over motor vehicle theft took the top spot in 2014. After 2010, no single category was the top concern for more than 26 percent of the respondents. Given the concern for safety in public places at night (see Table 2), surprisingly, violent crime in general and sexual assault specifically did not make the list of the top ten concerns. It is quite possible that certain locations and situations trigger concern for safety, but this concern is largely mediated by one’s own behavioral precautions so that these issues do not land on a list of neighborhood concerns. Studies that include non-hypothetical perception of risk measures would be more likely to pick up on this nuance. Although people may have high fear of violent crime, many people recognize that their risk (or chances of being victimized in a given year) is quite low (Ferraro, 1995; Warr, 1984).

Panel B of Table 3 presents the respondents’ top ten perceived police priorities. Drugs and speeding/aggressive driving are consistently ranked number one and two from 2008 to 2014. Drinking and driving ranked third from 2008 to 2014, but crime (in general) ranked third or tied for third from 2011 to 2014. Table 4 shows the consistency between residents’ concern over driving and the top ten calls for service for the Royal Canadian Mounted Police (RCMP) in the RMWB service area. In 2012, three of the four most frequently received calls for police service are related to traffic (Speeding violations, Other moving traffic violations, Traffic collision(s) and Property damage due to collisions) (Boyd, 2012: 17). In total, traffic-related calls represent 43 percent of the top ten calls for service received by the RCMP in RMWB. When viewed through this lens, boomtown crime and public safety may be less a matter of gunslinging and barroom brawls and more a matter of hard-working, financially secure individuals driving trucks and recreational vehicles on overcrowded and underdeveloped roadways mixed with drug and alcohol use.

**Table 4. Top Ten Types of Calls for Police Service in the RMWB (2012).**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Number of calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moving Traffic – Speeding Violations</td>
<td>2,192</td>
</tr>
<tr>
<td>False/Abandoned 911 Calls</td>
<td>2,123</td>
</tr>
<tr>
<td>Other Moving Traffic Violations</td>
<td>1,826</td>
</tr>
<tr>
<td>Traffic Collision(s) – Property Damage – Reportable</td>
<td>1,453</td>
</tr>
<tr>
<td>False Alarms</td>
<td>1,429</td>
</tr>
<tr>
<td>Mischief</td>
<td>1,335</td>
</tr>
<tr>
<td>Liquor Act</td>
<td>1,220</td>
</tr>
<tr>
<td>Disturbing the peace 175(1) CC</td>
<td>1,195</td>
</tr>
<tr>
<td>Assault 266 CC</td>
<td>697</td>
</tr>
<tr>
<td>Other Non-Moving Traffic</td>
<td>686</td>
</tr>
</tbody>
</table>

Source: Boyd (2012)

Infrastructure investment and planning that allocates significant police resources toward traffic control could help alleviate many of the most frequent calls for service in boomtowns and reduce the number of traffic-related crimes and deaths in boomtowns (Fernando and Cooley, 2015;
Ruddell and Ortiz, 2015). This type of planning and investment comes at a cost, which many boomtowns have been unwilling to budget for, leaving boomtown police departments with largely reactive rather than proactive responses to traffic-related crimes.

**Discussion and Conclusion**

The findings of this study that related to elevated concern over safety while driving and waiting for public transportation are consistent with research on boomtowns that suggests that strains on towns’ infrastructures, including roads and highways, are a major challenge for most boomtowns (Archbold et al., 2014; Ruddell and Ortiz, 2015; Ruddell et al., 2014). Traffic congestion, motor vehicle accidents, and aggressive driving on boomtown roads all pose problems for Wood Buffalo residents. In fact, the media has aptly characterized Highway 63, the main highway leading into Fort McMurray from Edmonton, as the “Highway of Death” (Modjeski, 2013). Residents have correctly identified roadway safety as a cause of concern and believe that it should be a priority for police. Consistent with residents’ perceptions, RCMP data find that three of the top four calls for service are traffic related. Unfortunately, a major challenge for boomtown police departments is that their budgets often do not grow proportionately to population increases, because many boomtown municipalities resist changing their funding allocations as they must also plan for the bust time of the boom-bust cycle (Dahle and Archbold, 2015; Ruddell, 2011). This challenge is particularly acute when infrastructure development such as roadway improvement, expansion, and signage do not keep up with population growth. Fernando and Cooley (2015) recommend that infrastructure investment is one way to maintain the quality of life for residents of boomtowns.

This study also finds that there is a large gender gap in the perception of safety for those situations that might involve being in a public space alone in RMWB, particularly after dark. Women had consistently lower perceptions of safety than men in public spaces. Far from being a boomtown-specific phenomenon, this finding reinforces the conclusions of countless articles on fear of crime. A respondent’s gender is consistently one of the strongest predictors of fear of crime, particularly violent crime (Fisher and Sloan, 2003; Madriz, 1997; May, Rader, and Goodrum, 2010; Nellis, 2009; Schafer, Huebner, and Bynum, 2006; Wilcox, Jordan, and Pritchard, 2006). Research on perceptually contemporaneous offenses has found that women are more likely to fear a variety of different offenses than men because they link these crimes to the threat of sexual assault (Fisher and Sloan, 2003; Hilinski, 2009; Lane and Fox, 2013; Ugwu and Britto, 2015). Given the media-driven image of a stranger rapist who lurks behind the bushes and attacks women in public places, and recent international media attention on sexual assaults perpetrated by taxi and Uber drivers, it is possible that women’s perceptions of being less safe walking alone in a public park, waiting for or using public transportation, or taking a taxi alone is a result of the perceptually contemporaneous crime of rape.

Qualitative work suggests that boomtown economies are shaped by a culture of “frontier masculinity” (Angel, 2014). O’Connor (2015: 230) found that “women were very aware that they were women navigating a masculine city and compensated for this by taking several precautions.” These precautions were predicated on defining certain locations, situations, and people as dangerous. The notion of stranger-danger can be particularly acute in the boomtown environment with regular population turnover and growth that can lead to whole groups of workers being labeled and identified as outsiders (Foster and Taylor, 2013; O’Connor, 2015).
Interestingly, as a result of the recent global oil price crash, and the boomtown bust currently being experienced by RMWB, researchers now have the opportunity to examine the impact of population and economic declines on crime and perceptions of safety. In light of research that found that the oil and gas booms of the 1970s and 1980s in the western United States ultimately resulted in depressed economies that have not recovered (Jacobsen and Parker, 2014), it is important to study how these changes affect crime-related public perceptions. Analysis of survey data from 2015 and 2016 should be used to assess the impact of a declining population and lower levels of economic security on perceptions of safety and police priorities in the future.

Future research should also attempt to assess the perceptions of individuals living in the work camps that support boomtowns. Hunter, Krannich, and Smith (2002) found that “boom migrants” have higher levels of fear of crime than long-term residents. Many of these boom migrants are men, temporary foreign residents, and DIDO or FIFO residents—all characteristics that qualitative researchers have found to contribute to their status as “outsiders” and their being labeled as part of the crime problem rather than an integral part of a boomtown community (Angel, 2014; Foster and Taylor, 2013; O’Connor, 2015). This “shadow population,” especially temporary foreign workers, faces a high level of social exclusion and pressure to provide for their families abroad, and as a result their experience of community is shaped by a number of different fears. One research participant in the Foster and Taylor (2013: 177) study put it this way: “If you don’t have permanent residence you’re always afraid [of] everybody, afraid [of] your boss that you’ll be sent back home. You don’t have peace of mind. That’s a problem when you [are a] foreign, you’re always thinking before you go to sleep what will happen tomorrow, I might be sent back home. You don’t know.” Work by Angel (2014) suggests that environmental design in work camps can do much to alleviate the stress and pressures faced by individuals in work camps and can contribute to healthier and safer environments. Studies of boomtowns should include methodologies to sample this portion of the boomtown population to better gauge fear of crime and related perceptions for the entire community.

Boomtown milieus have several features that differentiate them from towns with stable populations and economies, including increasing population, above average incomes, housing shortages, and a higher percentage of men per capita. These features help shape residents’ perceptions of safety, neighborhood concerns, and police priorities. Seven years of residential surveys in RMWB show that the infrastructure strain caused by booming populations reduces the perception of safety on the roadways, which also translates into traffic and drunk driving consistently being among the top neighborhood concerns of boomtown residents and a desire for these issues to be a priority for police. City planners, police agencies, and companies planning to develop resource-extraction operations in rural areas should be aware of these trends and include roadway expansion projects, sufficient signage for traffic safety, and appropriate police funding for roadway policing in their efforts.

Finally, boomtowns show similar trends to non-boomtown locations in terms of women’s elevated fear levels, especially in public places alone at night. Despite the higher risk of experiencing sexual assault in one’s home or in the home of someone known to the victim with a known assailant, women’s fear of crime is often connected to public spaces at night and the threat of an attack by a stranger. This emphasis is consistent with the types of rape that are frequently portrayed in the
media. Boomtown communities should explore a number of community services—from better lighting or share-a-ride or walk programs to community sexual assault education and response programs, changes in police patrol patterns, and education programs in schools that confront the culture of violence against women—which would potentially contribute to women feeling safer while in public spaces.

References


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Packin’ in the Bakken: Explaining the Variation in Concealed Weapons Carry Permits in North Dakota Counties

Rick Ruddell, University of Regina
David C. May, Mississippi State University

Abstract

The extraction of oil and natural gas has resulted in rapid industrialization, population growth, and increased accidents, disorder, and crime in a growing number of rural counties in the United States. In the early stages of a resource-based boom, law enforcement agencies are often overwhelmed by these challenges. Realizing this, county residents may become more fearful of victimization and arm themselves. Our examination of carrying concealed weapons (CCW) permits issued in North Dakota found that between 2005 and 2013, the number of new permits issued in oil boom counties increased by 649 percent; whereas in counties not affected by the boom, they rose by 402 percent. Analysis of pooled county-level data revealed a consistent relationship between the rates of CCW permits issued and residential stability, population growth, and counties impacted by the oil boom. Nevertheless, we did not find an association between police-reported crime rates and CCW permits. Implications for the study of boomtowns and carrying concealed weapons are discussed.

Key words: Boomtowns, Carrying Concealed Weapons (CCW), resource-based booms, rural crime

Introduction

The expansion in the exploration and extraction of natural resources such as oil and natural gas between 2008 and 2014 has enriched some rural counties in the United States. This development, however, often comes at a great social cost. The migration of workers into these communities generally results in rapid population growth, and the industrialization that follows extraction activities can further disrupt traditional ways of life. Although no two booms are alike, there is a common set of social and environmental ills associated with these events that reduce the quality of life for residents of these places (Government of New Brunswick, 2012). When these booms occur, municipal, health, education, and welfare services are often stretched thin due to increased demand for services (Heitkamp and Jayasundara, 2012; Jayasundara, Heitkamp, and Ruddell, this issue; Weber, Geigle, and Barkdull, 2014). Public safety agencies are also confronted by a growing demand due to increased calls for services and higher levels of crime, and these are often accompanied by increased unintentional industrial and traffic-related injuries (Archbold, Dahle, and Jordan, 2014; Dahle and Archbold, 2015; Montana All Threat Intelligence Center & North Dakota State and Local Intelligence Center, 2012 [hereafter MND Report]). A lack of affordable housing exacerbates these problems and forces newcomers into temporary and often undesirable living arrangements, such as living in their vehicles or long-term stays in temporary arrangements, such as campgrounds (White, 2012).

The early stages of resource-based development are often met with optimism from the local residents as property values increase, unemployment drops, and revenue flows into the community.
Bailey (2012) reports how the oil and gas boom in the Bakken formation (a shale formation encompassing some 200,000 square miles across eastern Montana and western North Dakota as well as the Canadian provinces of Manitoba and Saskatchewan) adds 2,000 individuals each year to the millionaire population of North Dakota. Despite the favorable economic expansion, however, long-term community residents struggle with the population increases, traffic congestion, environmental impacts, and the antisocial behavior and crime associated with these booms (Archbold et al., 2014; Government of New Brunswick, 2012; Ruddell et al., 2014).

While there is some debate over the exact direction and nature of the boom-crime relationship, there is consensus that in the early stages of a boom, law enforcement personnel are often stretched thin (Archbold, Dahle, Huynh, and Mrozla, this issue; Archbold et al., 2014; Dahle and Archbold, 2015; Heitkamp and Jayasundara, 2012a, 2012b; MND report, 2012; Ruddell, 2011) because local government leaders are reluctant to fund additional officer positions until they are certain the boom will persist. As a result, long-term boomtown residents may express an increasing fear of crime (Britto, this issue; Ruddell and Ortiz, 2015). This fear might also be a result of the increased number of “strangers” or “outsiders” now living in their communities because these newcomers are often from different parts of the United States (or other nations) and express unfamiliar values (Archbold et al., 2014). Prior research also suggests that rural, white people might also be threatened by the increased number of non-white newcomers (Broadway, 2000).

This potential increase in fear of crime and strangers among boom community residents, coupled with the fact that police may be less able to respond in a timely manner when crimes occur, calls for an examination of how these residents adapt to these challenges. Research suggests that rural residents are more likely to report owning firearms than their urban counterparts (Azrael, Cook, and Miller, 2004; Pew Research Center, 2013). It is difficult, however, to disentangle the different motivations for gun ownership between urban and rural populations. Although hunting is more prevalent in rural areas, surveys conducted by Gallup (2014) found that most Americans report owning guns for protection (60%) rather than for hunting (36%) or recreational/sport shooting (13%). Given the lengthy police response times in the countryside and residents’ vulnerability due to isolation, rural residents may seek to increase their protection against crime by arming themselves (Giblin et al., 2012).

Rural residents are not the only individuals using firearms for protection. Loosened restrictions on carrying concealed weapons ushered in by state legislatures in the 1990s and 2000s have greatly increased the number of individuals obtaining permits to legally carry concealed weapons. Initially, the increase in permits was relatively slow, growing from about 2.7 million permit holders in 1999 to 4.6 million in 2007. The U.S. Government Accountability Office (2012: 1) reports there were about eight million permit holders as of December 31, 2012. Research carried out by Lott, Whitley, and Riley (2015) reveals that 12.8 million Americans had carry permits in 2014, or about 5.2 percent of the adult population. The growth in CCW permits has been found in the vast majority of the states, despite dramatic differences in the economic, social, and crime-related conditions across these jurisdictions. Even though there were a large number of mass shootings throughout 2014–2015, there is broad public support for CCW legislation. In fact, an October 2015 Gallup poll reveals over one-half (56%) of respondents believe that the United States would be safer if more Americans carried concealed weapons (Newport, 2015). Rural residents in the Gallup study were also more supportive of CCW legislation than their urban counterparts.
Despite the growing prevalence of individuals with CCW licenses, little research has provided detailed analysis of the reasons for these changes across states, and no research of which we are aware has examined how the increases in CCW permits vary within states. In this study, we used a cross-sectional research design to examine the political, economic, social, and demographic factors that influence the rate of CCW permits issued in North Dakota. We hypothesized that perceptions of an increased likelihood of victimization, coupled with the belief that the police were unable to promptly respond to crimes in progress, might result in individuals arming themselves, and this effect would be most pronounced in boom counties. Although the number of CCW licenses might not reflect the true number of firearms actually carried (e.g., felons or juveniles are ineligible to possess firearms and may illegally carry guns while some individuals issued permits might never actually carry a gun), we believe the rate of permits issued is a proxy indicator for the proliferation of concealed firearms. Below, we provide a brief overview of crime in the Bakken region, describe the data and methods used in our analyses, and interpret the results obtained from those analyses.

Crime in the Bakken Oil Formation

Higher oil and natural gas prices, along with new forms of oil extraction (e.g., horizontal drilling and hydraulic fracturing or fracking) have made it easier and more cost-effective to extract oil in shale formations. In terms of the Bakken region “between 2004 and 2011 oil production activity in North Dakota increased from half a million barrels to 126 million barrels per year” (Brown, Fossum, Hecht, Dorrington, and McBroom, 2013: 5). This industrial activity resulted in rapid population growth; tens of thousands of newcomers—many of whom are young men without much stake in the communities where they live—migrated into rural oil boom counties in Montana and North Dakota in search of employment. These young men have disrupted normal patterns of interaction and have contributed to increased levels of disorder and crime (MND Report, 2012). Over three decades ago, Freudenburg (1984, 1986) observed that rapid population growth decreases levels of informal social control, thus contributing to increased crime. Other scholars, however, were critical of claims that resource-based booms and crime had a clear cause and effect relationship (Wilkinson, Reynolds, Thompson, and Ostresh, 1982).

The Bakken region has been portrayed by the media as the new Wild West (Daily Mail, 2013; Ellis, 2011; Petro Global News, 2013; Rucke, 2014) and a “killing field” (Nienaber, 2014). In addition to reporting increased violent crime in these areas, the media also speculated that vulnerable populations such as women (Eligon, 2013) and American Indians are at greater risk of victimization (Crane-Murdoch, 2013). The growing populations of well-paid, young oil workers are considered a lucrative potential drug market by organized crime (Valencia, 2015), and this has lead to the mass arrests of organized crime offenders (Associated Press, 2015).

Justice system employees have echoed what has been reported in the media. The MND Report (2012: 2) summarizes the impact of population increases on law enforcement in Montana and North Dakota boom counties, noting that “increases in calls for service, arrests, index crimes, fatal and non-fatal motor vehicle crashes, and sexual offenders, as well as significant turnover and recruitment issues have exacerbated the challenges experienced by law enforcement agencies.” Archbold, Dahle, and Jordan’s (2014) study of North Dakota law enforcement officers reveals that
demands on their agencies and officer workloads increased greatly. Heitkamp and Jayasundara (2012) report similar findings from the police officials in their study of human service agency responses to the boom (see also Jayasundara et al., this issue).

Most scholarship examining the post-2000 natural resources boom has reported a relationship between increased industrialization and crime in boom communities in rural Australia (Carrington and Pereira, 2011; Scott, Carrington, and McIntosh, 2012), Canada (Ruddell, 2011), and the United States (Komarek, 2014; Perry, 2007; Ruddell et al., 2014; Seydlitz, Jenkins, and Gunter, 1999). Other researchers, however, have not found a clear relationship between resource-based booms and crime (Forsyth, Luthra, and Bankston, 2007; Kowalski and Zajac, 2012; Luthra, Bankston, Kalich, and Forsyth, 2007). In their study of the crime in the Bakken region, Ruddell and colleagues (2014) found that Part I violent crimes (homicide, robbery, aggravated assault and forcible rape) increased by 18.5 percent in North Dakota oil-impacted counties between 2006 and 2012; in a matched sample of non-boom counties, these crimes decreased by 26.5 percent, although that relationship was not statistically significant.

With respect to serious offenses, a review of homicide statistics published by the State of North Dakota (2015) reveals that between 1994 and 2014 the homicide rate varied between 0.6 and 2.9 per 100,000 residents with an average of 1.73. When examined prior to the start of the oil boom (2004 to 2008) and after the boom (2009 to 2014), homicides increased from 1.68 to 2.25 per 100,000 state residents (33.9%). Even with an increase of more than one-third, the homicide rate in North Dakota for 2014 (3 per 100,000 residents) was two-thirds the national rate of 4.5 per 100,000 residents in 2014 (Federal Bureau of Investigation [FBI], 2015).

Table 1. North Dakota and United States Crime Rates per 100,000 Residents, 2014.

<table>
<thead>
<tr>
<th>Offense</th>
<th>North Dakota</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homicide</td>
<td>2.6</td>
<td>4.5</td>
</tr>
<tr>
<td>Violent</td>
<td>265.1</td>
<td>374.9</td>
</tr>
<tr>
<td>Property</td>
<td>2,110.3</td>
<td>2,565.3</td>
</tr>
</tbody>
</table>

Source: FBI (2015)

Table 1 shows the rates of police-reported crime in North Dakota and the US rate per 100,000 residents for homicide, violent, and property offenses for 2014 as reported by the FBI (2015). With respect to overall violent crime, while the national rate was 374.9 per 100,000 residents, the North Dakota was about 70 percent of that proportion (265.1 per 100,000 residents). However, the property crime rate in North Dakota—2,110.3 offenses per 100,000 residents—was closer to the national rate of 2,565.3 offenses. Overall, although crime has risen in North Dakota, and especially in oil-producing counties, it remains less than the national average. State residents, however, might perceive those statistics as more threatening given the disruption that an increase in crimes has on their day-to-day lives.

One of the challenges in examining the boom-crime relationship is that the industrialization and population growth associated with booms often occurs in out-of-the-way locations that are served by very small police services. U.S. law enforcement agencies in these places often fail to report
annual crime statistics to the FBI, and Kuhns, Blevins, and Austin (2013: 3) note that “many sheriff’s offices, especially those in rural areas, often lack the capability or resources to perform sophisticated crime analyses or mapping within their jurisdictions.” Sheriffs in many small North Dakota counties, for example, fail to consistently submit information about police-reported crime to the FBI. Thus, missing and incomplete information, in turn, makes it difficult to carry out the cross-sectional or longitudinal study of the boom-crime relationship (Ruddell et al., 2014). Moreover, if no data about crime rates exists, law enforcement agencies will have a difficult time convincing their funding agencies that they require more resources (Jayasundara et al., this issue). In addition to the problem of incomplete data, the types of offenses and disorder that contribute to public fear (e.g., assaults, drunk and aggressive driving, prostitution, drug sales, and public intoxication) are not reported in the FBI’s Part I Uniform Crime Reports, which makes it difficult to fully understand the extent of boomtown crime.

Despite the lack of complete cross-sectional or longitudinal crime data, there appears to be a disconnection between the media portrayal of the Bakken region as a place of serious lawlessness and the actual crime statistics for that region. The growing prevalence of antisocial behavior and minor offenses, however, cannot be underestimated in terms of making individuals feel unsafe, as prior research has demonstrated a strong relationship between neighborhood incivility and/or disorder and the perceived risk of victimization and fear of crime (Lane et al., 2014). An increased fear of crime is associated with a variety of defensive behaviors, such as target hardening (e.g., installing deadbolt locks or home security systems) or carrying firearms and other weapons (Giblin et al., 2012; May, Rader, and Goodrum, 2010; Rader, May, and Goodrum, 2007).

We suggest that boom county residents may experience higher levels of perceived risk and fear of victimization based on changes in the population (both its rapid growth and composition), media reports emphasizing lawlessness, and the actual increases in disorder, antisocial behavior, and crime. These feelings of fear may be exacerbated as the population heterogeneity increases due to immigration from other states. Higher levels of perceived risk or fear of crime might increase the likelihood that individuals will take precautions to enhance their safety, including obtaining a CCW permit allowing them to legally carry firearms. In this study, we identify the county-level factors associated with higher rates of carrying concealed weapon permits. The following section highlights the contemporary research on the prevalence of carrying concealed weapons.

**Carrying Concealed Weapons**

An estimated 12.8 million Americans, or about 5.2 percent of the adult population, held CCW permits in 2014, and this number grew rapidly between 2004 and 2014 (Lott et al., 2015: 4). While there is some variation across the nation in terms of eligibility, CCW permit holders must be U.S. citizens or legal residents at least 18 years old. Applicants undergo a screening for criminal history by a law enforcement agency, as felons and individuals with convictions for domestic violence are prohibited from owning firearms. Most states require applicants to attend some form of training and to pay a nominal license fee. For example, prior to being issued a permit, North Dakota applicants must attend classroom training, display familiarity with their firearm, demonstrate their shooting proficiency, pass an exam, and pay a $60 fee (State of North Dakota, 2013).
There is no shortage of scholarship on whether the presence of CCW holders leads to more or less crime. Some empirical studies have shown that higher numbers of CCW holders in a population deters potential offenders and reduces violent crime (Lott, 2010; Lott et al., 2015), while other scholars have been critical of that research (Aneja and Donohue, 2011; Ayres and Donohue, 2009). Ghent and Grant (2014) summarized a number of studies that found no relationship between CCW and changes in crime. For the purposes of this study, the crime reduction impact of CCW holders is less important than identifying the county-level factors that contribute to the variation in the number of CCW permits issued and whether characteristics of resource-based booms, such as population change, drive those differences.

A number of researchers have examined the reasons why individuals sought CCW permits. Hood and Neeley (2009) found that the primary motivation for Louisiana CCW permit holders was to protect themselves from victimization when traveling and to protect their residence and property when at home. Compared to non-permit holders, CCW respondents were more likely to report being victims of violent or property crimes, express pessimistic attitudes about city-wide crime rates, and have less confidence in the police to protect them against violent offenders (Hood and Neeley, 2009: 77). Altogether, the motivations for CCW appear to be quite clear: individuals carry firearms because they have been victimized in the past, fear future victimization, and/or they lack the confidence in the police to respond in time to respond to threats. These motivations may be more pronounced among rural residents as it has long been recognized that police response times can be very lengthy in the countryside (see Birge and Pollock, 1989).

Several scholars have examined the county- and neighborhood-level correlates of CCW licenses. Costanza and Kilburn (2004) found that the only offense associated with CCW licenses being granted in Louisiana parishes was robberies; other crimes did not have a positive association with CCW licenses. Instead, median household income, political conservatism, and the change in the black-to-white ratio in the community were positively associated with the number of CCW licenses granted per parish. By contrast, Gau (2008) found that the rate of CCW permits issued at the neighborhood level was influenced by the level of satisfaction with police service and the neighborhood’s social cohesion (e.g., where individuals had high levels of trust and interconnectedness with neighbors). Thompson and Stidham (2010) report that in North Carolina, as a county’s black-to-white ratio increased, so did the number of CCW holders. Additionally, counties with higher levels of registered Republicans and greater numbers of hunting permits issued also had higher levels of CCW licenses. Inconsistent with the researchers’ expectations, crime or changes in violent crime were not associated with the number of CCW licenses issued in North Carolina counties.

There may also be financial and legal barriers to the number of persons granted CCW licenses. Lott, Whitley, and Riley (2015: 8) found that states with higher permit costs issue fewer licenses, as do states where more discretion is given to local government officials such as sheriffs to issue permits (e.g., “may” versus “shall” issue states). These scholars also report that the longevity of CCW legislation is positively associated with issuing permits and “each 10 years that the permit law has been in effect increases the percent of adults with permits by 1.5 percentage points” (Lott et al., 2015: 8).
Consequently, the literature reviewed above suggests there are important demographic and contextual predictors of the number of CCW permits issued in an area that may be partially explained by two theoretical propositions. The first is the minority group threat hypothesis (see Whittle and Parker, 2014 for a summary of the literature). Supporters of this approach propose that as population heterogeneity increases, the use of formal social control also rises. As a result, most studies of minority threat have examined the relationships between the size of minority populations and spending on law enforcement or police strength, such as the number of officers per 1,000 residents (Kent and Carmichael, 2014). These investigators typically find that as the size of the black population increases, there is a corresponding growth in police strength (see Sever, 2001 for a review of these studies).

In line with the minority threat proposition, the studies carried out by Costanza and Kilburn (2004) and Thompson and Stidham (2010) found that an increased black population corresponds with a greater prevalence of CCW permit holders. Such a finding could be categorized as an informal response to changing population dynamics and is consistent with the minority threat proposition. In his study of meatpacking boomtowns in Canada, Broadway (2000) found that local residents felt threatened as the number of newcomers from different racial, ethnic, or cultural groups increased. One way that boomtown residents could lower their fears of these outsiders is to carry a gun for protection.

A second theoretical explanation for variation in the number of CCW permits revolves around a location’s collective efficacy (Sampson, Raudenbush, and Earls, 1997). Sampson and his associates argue that neighborhoods with high levels of collective efficacy have common values among residents and strong relationships between residents, which allow them to exert informal social control on crime. Consequently, neighborhoods (or towns and counties) that have a rapid migration of young adults may have lower levels of collective efficacy because these residents do not have the time (or perhaps even the inclination) to create these informal networks with long-term residents. For example, Freudenburg (1984, 1986) posited that rapidly growing populations in small towns and rural areas reduces the density of acquaintanceship of those communities, which he defined as the degree to which people knew each other. Reductions in a community’s density of acquaintanceship (and their collective efficacy) result in less guardianship (e.g., watching over a neighbor’s property when they are away) and exerting less informal social control, as residents are less likely to monitor and/or correct the behaviors of others if they do not know them (Weisheit, Falcone, and Wells, 2005).

Residents in homogenous communities experiencing a rapid influx of newcomers coming from different demographic, ethnic, or racial groups may be more fearful of crime (Broadway, 2000). In some cases, these fears of outsiders may be justified. Although most scholarly commentary on boom communities identifies young men without much stake in a community as a population that contributes to increased crime, research has shown that offenders are also drawn to boom counties. Berger and Beckmann (2010) found that the number of registered sexual offenders grew two to three times faster in Wyoming counties experiencing booms related to resource development, such as natural gas and oil extraction, compared to population booms associated with recreational or agricultural industries.
The literature reviewed above has highlighted a number of noteworthy findings. First, the evidence suggests that resource-based booms are associated with increases in minor crimes, police calls for service, and the number of strangers or outsiders in boom counties. Second, it is plausible these factors might contribute to changes in perceptions of risk of victimization and fear of crime. One consequence of an increased fear and risk may be carrying firearms or other weapons for protection. As a result, a heretofore unexplored consequence of natural resource booms may be an increase in weapon carrying among boom county residents.

**Figure 1. New/Renewed CCW Permits, North Dakota, 2005 to 2013.**

The results presented in Figure 1 show that the number of new and renewed CCW permits in North Dakota issued increased by 467.7 percent between 2005 and 2013. During that time frame the state population grew by only 13.6 percent. Using the Crime Prevention Research Center (2014) estimates of CCW holders, during the same period, the US total increased from 4.6 to 11.1 million individuals, or 141.3 percent (that total includes all CCW holders). Lott, Whitley, and Riley (2015: 15) report that on December 31, 2013 there were 40,888 North Dakota permit holders, or about 7.2 percent of the adult population. North Dakota falls into the top third of all states in the prevalence of CCW license holders and is higher than neighboring Minnesota (4.6%) but less than South Dakota (12.3%). In Montana, the other state affected by the Bakken resource boom, permits are not required to carry concealed weapons, so the number of licenses is much less. It is thought that many Montana CCW holders obtain permits so they can legally carry their firearms in states with CCW reciprocity agreements (Lott et al., 2015).

Lott, Whitley, and Riley (2015: 10) observe that an increasing number of North Dakota CCW permit holders are women, and the proportion of women granted permits increased from “11.2% in 2010 to 24.9% in 2014.” A North Dakota CCW instructor states, “I am seeing an uptick in the number of women and I think a lot of them are doing it on their own and not being coerced by their husbands or boyfriends” (MacPherson, 2015). Whitney’s (2015) interviews with women
shooters (some of whom were attending CCW training) reveals that a key theme in these interviews was obtaining firearms for self-protection, specifically from abusive partners or because they lived or worked alone. Fears of victimization may be legitimate: Komarek (2014) found that incidents of sexual assaults were significantly associated with the expansion of oil and gas production in Pennsylvania and New York counties.

We question why North Dakota residents felt so motivated to carry firearms, and why the rapid growth in issued permits has occurred. We suggest that the combination of media accounts of a new Wild West, increased disorder and crime, law enforcement that is stretched thin, and a growth in the number of newcomers (“strangers” or “others”) in boom counties created a perfect storm where individuals feel that they must be armed in order to feel safe. As highlighted in Figure 1, the fastest growth in CCW licenses occurred after the oil boom started in 2008. Thus, at first glance, it appears that the sharp increase in the number of CCW licenses in North Dakota coincided with the oil boom that begin during that time period. Lott, Whitley, and Riley (2015) note, however, that the number of CCW licenses also increased nationally after 2008 and those numbers had the largest increase since 2011. To further examine the impact of the oil boom on CCW licenses, we analyze pooled county-level data to determine whether there is a relationship between living in a boom county and obtaining a CCW license.

Data and Analytical Strategies

Data used to conduct the analyses were obtained from the U.S. Census Bureau, Bureau of Economic Analysis, the North Dakota Secretary of State, and the North Dakota Attorney General. The data used in the pooled data analyses were for 2008, 2010, and 2012 (variables for each indicator and separate year were collected). We begin our analysis by reporting the descriptive statistics for the geographic, political, and economic factors, as well as indicators of crime and criminal justice operations (e.g., the number of officers per 1,000 residents). Next, we compare oil-impacted and counties not impacted by the boom (e.g., they may have limited oil production, but all have less than 1,000 barrels per week) that we call non-impacted counties, in a series of t-tests to evaluate whether there were statistically significant differences between these two groups across the geographic, economic, and political factors examined here. Finally, we close this section by conducting a series of ordinary least squares (OLS) regressions to determine the predictors of the rate of new/renewed CCW permits issued per 1,000 county residents for all of the North Dakota counties.

Counties were designated as oil impacted using the North Dakota Attorney General’s classification (18 of the state’s 53 counties). The results, presented in Table 2, compare the economic, demographic, geographic, and crime- and justice-related characteristics of the oil- and non-impacted counties. To determine if the differences in these factors were statistically significant, a series of independent sample t-tests were carried out using the 2012 indicators. With respect to the economic, demographic, and geographic characteristics, the results of the t-tests show the land area of the oil-impacted counties was significantly larger than non-oil-producing counties. The populations of the oil-impacted counties were slightly larger, although those population differences were not statistically significant. Consistent with expectations, the four-year population change from 2008 to 2012 in the oil-producing counties was significantly higher than the population change in non-producing counties.
Table 2. Characteristics of Oil- and Non-Impacted North Dakota Counties, 2012.

<table>
<thead>
<tr>
<th>Economic, Demographic, and Geographic Characteristics</th>
<th>Oil-Producing Counties (n = 18)</th>
<th>Non-Impacted Counties (n = 35)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land area (Square miles)</td>
<td>1,534</td>
<td>1,182</td>
<td>.027*</td>
</tr>
<tr>
<td>Population (2012)</td>
<td>10,344</td>
<td>14,718</td>
<td>.302</td>
</tr>
<tr>
<td>Population change: Four years (2012)</td>
<td>16.42</td>
<td>2.61</td>
<td>.003*</td>
</tr>
<tr>
<td>White population change: Four Years (2012)</td>
<td>.47</td>
<td>.50</td>
<td>.870</td>
</tr>
<tr>
<td>Conservative voters (2012)</td>
<td>70.6</td>
<td>57.6</td>
<td>.058</td>
</tr>
<tr>
<td>Owner-occupied homes (2012)</td>
<td>76.8</td>
<td>74.0</td>
<td>.173</td>
</tr>
</tbody>
</table>

Carrying Concealed Permits Issued

- Permits Per 1,000 county residents, 2012
  - Oil-Producing Counties: 38.4
  - Non-Impacted Counties: 18.0
  - p value: .000*

Crime and Justice

  - Oil-Producing Counties: 127.0
  - Non-Impacted Counties: 80.8
  - p value: .074
- Property Crime Rate – ND Attorney General (2012)
  - Oil-Producing Counties: 1,376
  - Non-Impacted Counties: 1,072
  - p value: .635
- Officers per 1,000 County Residents (2012)
  - Oil-Producing Counties: 2.8
  - Non-Impacted Counties: 1.6
  - p value: .004*

* p ≤ .05

Sources: Attorney General of North Dakota (2014); Secretary of State of North Dakota (2016); U.S. Census Bureau (2015).

In terms of crime and justice system responses, the number of CCW permits issued in oil-producing counties was significantly higher with 38.4 permits for every 1,000 county residents, compared with 18.0 in the non-oil-producing counties. Although levels of violent crime for 2012 were higher in the oil-producing counties, those differences were not statistically significant (p = .074). Rates of property crime, by contrast, were similar between the oil-producing and non-oil-impacted counties. There were, however, significantly more officers per 1,000 county residents in the oil-impacted counties (2.8 and 1.6 officers, respectively).

Multivariate Analyses

A second series of analyses examined the pooled county-level data using OLS regression to determine which indicators are significantly associated with issuing CCW. Of special interest in these analyses was whether oil-producing counties were associated with CCW. The variables used in the analyses, and where they were obtained, are reported in Appendix A. Prior to the
development of the OLS models, a correlation matrix was estimated. This procedure revealed that all of the variables, with the exception of property and violent crime rates, were positively associated with CCW permits issued in 2008, 2010, and 2012 (see Appendix B). All of these indicators were used in the subsequent analyses. An examination of the dependent variable (CCW issued per 1,000 county residents) revealed that it was highly skewed and displayed severe kurtosis. This indicator was subsequently log transformed (although a supplementary series of analyses with the non-transformed variable were very similar to those reported below).

With respect to the analytical strategy, pooled county-level data for three years (2008, 2010, 2012) were examined; this strategy was used to provide enough cases to enable us to carry out more sophisticated analyses and reduce multicollinearity (as there are only 53 cases for any year). A baseline regression model was created using six variables and these variables of interest (e.g., crime, whether the county was oil-impacted, officers per 1,000 residents, and CCW permits issued in 2006) were added individually. Our goal was to explain as much of the variation in the CCW permit rate in these counties prior to adding these variables. The final OLS model contains all of the variables in a single model.

The baseline model was created using indicators that had cited in prior empirical studies of CCW (e.g., Costanza and Kilburn, 2004; Molnar, Miller, Azrael, and Buka, 2004; Thompson and Stidham, 2010) and the minority threat proposition (Sever, 2001). This model also included an indicator of political conservatism (the percentage of Republican voters for the president and senator in the 2008, 2010, and 2012 elections) as conservative beliefs are associated with pro-gun attitudes (Newport, 2015). Two indicators of population heterogeneity (the percentage of the white county population and the four-year county population change) were also examined. Population stability, which serves as a proxy for density of acquaintanceship, was indicated by the percentage of owner-occupied homes.

It was hypothesized that (a) more conservative individuals would be more likely to carry concealed weapons; (b) the desire to carry firearms would increase along with population heterogeneity (see Costanza and Kilburn, 2004; Thompson and Stidham, 2010); and (c) lower levels of population stability would lead to increased carrying of concealed weapons. To control for the pooled data, two dichotomous variables for the years 2008 and 2010 were included in each model (e.g., 0 = no; 1 = yes).

Five variables were subsequently added to the baseline model: police-reported violent crime, police-reported property crime, police strength (officers per 1,000 county residents), a dichotomous variable distinguishing oil-impacted and non-oil-impacted counties, and a variable representing the number of new and renewed CCW permits issued in 2006. It was hypothesized that the number of permits would be positively associated with higher levels of crime, fewer officers, oil-impacted counties, and higher rates of permits issued in 2006 (which was one year prior to the start of the boom). All of the independent variables were included in the final OLS model.

**Results**

Model 1 in Table 3 shows the effects of the baseline model on county-level CCW permits issued
in 2008, 2010, and 2012. Three of the variables in Model 1 were significantly associated with new or renewed CCW permits: conservative voters, owner-occupied homes, and population change. The dichotomous indicators for 2008 and 2010 (which act as controls for the pooled data) were statistically significant in each of the models. Model 1 was robust, explaining 59 percent of the county-level variation in CCW permits. Inconsistent with expectations, however, the white population change variable did not have a significant association with CCW permits.


<table>
<thead>
<tr>
<th></th>
<th>Model 1 Baseline</th>
<th>Model 2 Violent Crime</th>
<th>Model 3 Prop. Crime</th>
<th>Model 4 Officers</th>
<th>Model 5 Oil Impacted</th>
<th>Model 6 CCW 2006</th>
<th>Model 7 All Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative Voters</td>
<td>.319***</td>
<td>.298***</td>
<td>.285***</td>
<td>.241**</td>
<td>.227**</td>
<td>.283***</td>
<td>.146</td>
</tr>
<tr>
<td>Owner Occ. Homes</td>
<td>.271***</td>
<td>.291***</td>
<td>.304***</td>
<td>.265***</td>
<td>.248***</td>
<td>.174**</td>
<td>.222***</td>
</tr>
<tr>
<td>Population Change</td>
<td>.230***</td>
<td>.211**</td>
<td>.217**</td>
<td>.190**</td>
<td>.109</td>
<td>.181**</td>
<td>.054</td>
</tr>
<tr>
<td>White Pop. Change</td>
<td>-.014</td>
<td>-.015</td>
<td>-.017</td>
<td>.004</td>
<td>.011</td>
<td>-.053</td>
<td>-.025</td>
</tr>
<tr>
<td>Dummy (2010)</td>
<td>-.641***</td>
<td>-.645***</td>
<td>-.631***</td>
<td>-.619***</td>
<td>-.666***</td>
<td>-.642***</td>
<td>-.638***</td>
</tr>
<tr>
<td>Dummy (2008)</td>
<td>-.397***</td>
<td>-.410***</td>
<td>-.405***</td>
<td>-.431***</td>
<td>-.502***</td>
<td>-.435***</td>
<td>-.536***</td>
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<tr>
<td>Violent Crime</td>
<td>.053</td>
<td>-----</td>
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<td>.051</td>
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<td>-----</td>
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<td>.073</td>
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<td>Officers 1,000 Residents</td>
<td>.143*</td>
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<td>-----</td>
<td>-----</td>
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<td>.099</td>
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<td>Oil Impacted</td>
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<td>.225***</td>
<td>-----</td>
<td>.125*</td>
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<td>CCW Permits, 2006</td>
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<td></td>
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<td></td>
<td>.292***</td>
<td>.259***</td>
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<td>Constant</td>
<td>-.567</td>
<td>-.744</td>
<td>-.850</td>
<td>-.452</td>
<td>-.087</td>
<td>.080</td>
<td>-.082</td>
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<tr>
<td>Adjusted $r^2$</td>
<td>.594</td>
<td>.577</td>
<td>.579</td>
<td>.607</td>
<td>.626</td>
<td>.669</td>
<td>.672</td>
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</table>

* $p \leq .05$  ** $p \leq .01$  *** $p \leq .001$

In the five subsequent models, variables of interest were added to the baseline model (Models 2 through 6) and then all of these variables were included in Model 7. Neither police-reported violent crime nor police-reported property crime were significantly associated with the number of CCW permits issued (Models 2 and 3). The indicator of police strength (officers per 1,000 county residents) had a statistically significant positive association with the number of CCW permit holders (Model 4). This was a somewhat unexpected finding as we had hypothesized finding a significant negative association between these two variables (i.e., there would be a greater numbers of CCW permit holders in counties with fewer officers).
In Model 5 the dichotomous variable for oil-impacted counties was added and counties with high levels of oil production had significantly higher numbers of CCW permit holders. Permits per 1,000 county residents issued in 2006 also had a significant positive association with permits issued in 2008, 2010, and 2012 (Model 6). Model 7 includes all of the variables, and again the oil-impacted counties and CCW permit holders in 2006 were positively associated with CCW holders. Model 7 also reveals that the proportion of owner-occupied homes was positively associated with CCW permits, which was an unexpected finding, as we thought there would be a negative relationship (e.g., more CCW in counties with few owner-occupied homes). The final model explained over two-thirds of the county-level variation in CCW permits (adjusted $r^2 = .672$). Examination of variance inflation factors reveals that multicollinearity was not a problem in the OLS estimates.

If levels of crime do not explain the variation in the distribution of CCW permits across North Dakota, other factors must play a more important role. The analyses reported above show the proportion of conservative voters exerts a consistent influence on the prevalence of CCW permits, which is consistent with the results reported by Costanza and Kilburn (2004). O’Brien, Forrest, Lynott, and Daly (2013) and Newport (2015) also found that Republican voters were more likely to support issuing permits for concealed weapons.

Residential stability, as demonstrated by higher proportions of owner-occupied homes, and higher levels of population change were also positively associated with CCW permits being issued. It has long been speculated that rapid population change may contribute to social disruption, reduced collective efficacy, feelings of uncertainty, and fear of newcomers living and working in boom communities. These factors, combined with increased media accounts of danger or lawlessness, may contribute to a greater fear of crime and the desire to protect oneself by carrying a firearm. Although prior studies have shown that newcomers tend to be more ethnically and racially diverse than the established residents (see O’Connor, 2015 for an examination of long-term residents’ perceptions of boomtown newcomers), the analyses presented above did not reveal a significant relationship between changes in the white population and the prevalence of CCW permits. Consequently, while we find some empirical support for reductions in the density of acquaintance by the rapid population, our analyses did not validate the minority threat proposition. As a result, these results suggest that the magnitude and rate of population change is more threatening than the composition of that population.

Inconsistent with expectations, county-level police strength was positively associated with the CCW permit rate. We had hypothesized that fewer numbers of police officers in a county would motivate individuals to arm themselves. Although this was an unexpected finding, the police in rural areas are often spread very thin. This dispersion across large spaces makes them less visible and less able to respond quickly to calls for service due to the long distances that sometimes need to be traveled: the average size of North Dakota counties, for example, is 1,301 square miles, and 34 of those 53 counties have ten or fewer full time law enforcement officers (Weltz, 2015).

Discussion

The number of CCW permit holders in the United States increased by 178 percent between 2007 and 2014 (Lott et al., 2015). In North Dakota, the growth was over twice that rate, and this growth
was more pronounced in counties affected by the oil boom. Inconsistent with expectations, however, our analyses did not reveal a statistically significant relationship between the number of CCW permits issued and levels of violent or property crime or police strength. Instead, the best predictors of issuing these permits were the proportion of conservative voters, residential stability (demonstrated by the percentage of owner-occupied homes), and rapid population growth.

Despite the fact that crime has increased in oil-producing counties throughout the Bakken region, rates of police-reported crime are less than the national average and much lower than urban America (FBI, 2015). The North Dakota homicide rate, for example, is about two-thirds the US rate, and despite the fact that rural areas tend to have higher rates of firearms ownership, only 38 percent of North Dakota homicides between 1995 and 2014 involved a firearm (State of North Dakota, 2015: 7). For the entire United States, by contrast, firearms were used in 67.8 percent of all homicides (FBI, 2015, Expanded Homicide Data, Table 7).

Although beyond the scope of the data analyzed in this study, these findings suggest that an individual’s motivation to apply for a concealed carry permit might occur irrespective of the actual levels of crime. This finding suggests perceptions about the crime problem, which may be inflamed by media claims, the dangers that “strangers/outsiders” or newcomers present, and rapid social change may be threatening to boomtown residents. Lawrie, Tonts, and Plummer (2011) found that a tension exists between long-term residents and newcomers. One outcome of that tension and fear of victimization—whether that fear is real or imagined—appears to be the decision to obtain a permit to carry a gun.

There are a number of limitations in this study that may have influenced the findings. First, our focus was on permits to legally carry firearms. Using CCW permits as a proxy for all weapons carrying undercounts their true number. A review of statistics reported by the State of North Dakota showed that there were 358 arrests for weapons offenses in 2014 (Weltz, 2015: 28), which works out to 4.8 arrests for every 1,000 state residents, although this total includes weapons other than firearms. Thus, some individuals who are not eligible (e.g., those convicted of felonies) or authorized (e.g., non-US residents or juveniles) to legally own firearms certainly carried concealed weapons. Additionally, some adults eligible to apply for permits undoubtedly carried concealed firearms without a license. Nevertheless, if anything, the data analyzed here present a conservative estimate of weapons carrying in boom counties, and the relationships articulated here might be even stronger if we were able to capture data about weapons carrying outside of CCW permits, including knives or non-lethal weapons such as pepper spray or conducted energy devices. Future research should further explore this relationship by including those forms of weapon carrying as well.

Second, while we responded to a gap in our knowledge about the variance within a single state of CCW permits, we lack information about differences between states. As noted above, Lott, Whitley, and Riley (2015) report that 7.2 percent of North Dakota adults have a CCW permit, which is slightly more than neighboring Minnesota (4.62%), but much less than South Dakota (12.3%). Given that crime rates in these states are similar (although the violent crime rate in South Dakota was 20.8 percent higher than in North Dakota in 2014), factors other than crime appear to drive applications for CCW permits. Additional research should examine regional (or national) cross-state comparisons to further explore these differences. A fourth limitation of this study is
that the predictors of CCW licenses in rural counties that were identified in this study might not be generalizable to urban America.

All of the limitations presented above suggest that the motivations to carry concealed weapons be examined more comprehensively in future research. As there are over 12.8 million CCW permit holders in the nation (Lott et al., 2015) knowledge of their motivations, involvement in defensive gun use, perceptions of fear of crime, and patterns of gun carrying (e.g., does the allure of carrying a firearm decrease over time?) is woefully underdeveloped. Such sentiments might be explored through qualitative methods (see Carlson, 2012, 2015; Whitney, 2015). An additional research question might also ask whether a similar set of factors also influences carrying concealed weapons without permits.

Conclusions

This research demonstrates that residents of oil-impacted North Dakota counties have armed themselves at a much higher rate than their counterparts in counties less affected by the boom. The results further suggest this growth outpaced what was occurring throughout the rest of the nation. These findings have implications for the study of boomtowns as well as other rural communities and order maintenance in these places. Although we were not able to link crime rates and increased CCW permits, the findings highlighted in this study reinforce the importance of examining community-level contextual variables in studies of why individuals carry concealed weapons.

We are currently living in an era where a natural experiment regarding the impact of resource-based booms on crime, fear of crime, carrying weapons, and other criminological topics may be changing as we write, given the bust in many oil-producing counties that started in late 2014 due to decreased oil prices. Just as we learned much about behaviors after natural disasters from the research that has been published since the Hurricane Katrina disaster in 2005, this natural experiment can enhance our knowledge about protective behaviors during economic booms and busts as well. We encourage other researchers to take advantage of this opportunity to answer research questions around crime-related topics in ways that may be unavailable after the boom subsides.

Appendix A: Variables Used in the Pooled County Analyses.

<table>
<thead>
<tr>
<th><strong>Dependent Variable</strong></th>
<th>Rate of CCW permits issued per 1,000 county residents (2008, 2010, 2012). Source: North Dakota Attorney General. This variable was log transformed.</th>
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<tr>
<td><strong>Control Variables</strong></td>
<td>Percentage of county residents who voted for Republican candidate (for president in 2008 and 2012, and senator in 2010). Source: Secretary of State of North Dakota.</td>
</tr>
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</table>
Dummy 2008/2010  Dichotomous variable (to control for pooled country data).

**Variables of Interest**

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<th>9</th>
<th>10</th>
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<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Property Crime</td>
<td>.120</td>
<td>.720*</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Officers</td>
<td>-.256*</td>
<td>.056</td>
<td>.072</td>
<td>-.066</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Oil-impacted counties</td>
<td>.408*</td>
<td>-.116</td>
<td>-.101</td>
<td>.054</td>
<td>.018</td>
<td>.179*</td>
<td>.398*</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Carrying concealed weapon</td>
<td>.366*</td>
<td>-.411*</td>
<td>-.403</td>
<td>-.186</td>
<td>-.293*</td>
<td>.229*</td>
<td>.181*</td>
<td>.308*</td>
<td>.375*</td>
<td>------</td>
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<tr>
<td>Mean</td>
<td>2.2</td>
<td>78.5</td>
<td>997.9</td>
<td>0.5</td>
<td>0.8</td>
<td>1.9</td>
<td>0.3</td>
<td>6.1</td>
<td>64.8</td>
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</tr>
<tr>
<td>Standard Deviation</td>
<td>0.9</td>
<td>90.3</td>
<td>787.9</td>
<td>8.1</td>
<td>1.2</td>
<td>1.0</td>
<td>0.5</td>
<td>4.9</td>
<td>14.2</td>
<td>8.3</td>
</tr>
</tbody>
</table>

* p ≤ .05

**Appendix B: Correlations, Means, and Standard Deviations, North Dakota Counties.**

**References**


Broadway, M. 2000. Planning for change in small towns or trying to avoid the slaughterhouse blues. *Journal of Rural Studies*, 16(1), 37-46.


Heitkamp, T. and Jayasundara, D. 2012. *Oil boom in North Dakota*, Osher Lifelong Learning Institute (OLLI), Grand Forks, ND: University of North Dakota


“Some Days I Feel like the Dam Broke:”
An Examination of Increased Workload on
Police Officer Stress and Job Satisfaction in Western North Dakota

Carol A. Archbold, North Dakota State University
Thorvald O. Dahle, North Dakota State University
Carol Huynh, North Dakota State University
Thomas Mrozla, North Dakota State University

Abstract

The oil boom in western North Dakota has resulted in rapid population growth for many communities in that region. This qualitative study examines how rapid population growth affects the job satisfaction and stress of individual police officers working in western North Dakota. Face-to-face interviews with 101 police officers and sheriff’s deputies serve as the main data source. Interviews took place in eight police agencies located in four counties across the Bakken region of western North Dakota. The findings reveal that rapid population growth has increased police officer stress, but has had no impact on job satisfaction.

Key words: Rapid population growth, rural policing, police stress, police job satisfaction.

Introduction

Communities located in or near energy production sites often experience rapid population growth. Energy-based jobs draw people from across the United States to boomtown communities. Boomtowns are communities that experience rapid population growth and social change resulting from increased energy production (Cortese and Jones, 1977). In addition to changes in population size, the population composition of communities located in energy resource regions also undergo changes. Many of these communities experience an increase in racial, cultural, and ethnic diversity, male residents, and new residents moving into the area from other states (United States Census, 2014). Changes in the size of populations can impact availability of services provided by social institutions, businesses, and local government (Holeywell, 2011). An increase in population often results in an increase in demand for services from local and county agencies, including those within the criminal justice system.

Most of the criminal justice–related research conducted on the impact of rapid population growth resulting from energy production focuses on changes in crime (Covey and Menard, 1984; Forsyth, Luthra, and Bankston, 2007; Kowalski and Zajac, 2012; Ruddell, Jayasundara, Mayzer, and Heitkamp, 2014); fear of crime (Britto, this issue; Hunter, Krannich, and Smith, 2002; Krannich, 1989; Krannich, Greider, and Little, 1985); and citizens’ perceptions of community problems and personal safety (Brown, 2011; Ruddell and Ortiz, 2015; Theodori, 2009). There is a smaller body of literature that focuses on how rapid population growth impacts policing in energy boomtowns. Specifically, this research examines how rapid population growth impacts police organizations (Dahle and Archbold, 2015; Taft, 1981); how police officers conduct their work (Archbold, Dahle, and Jordan, 2014); police strength/deployment (Ruddell, 2011); and police officers’ perceptions of changes in crime, citizens, and their community (Archbold, 2015;
Covey and Menard, 1984). To date, there is no published research that examines how an increased workload resulting from rapid population growth impacts police officers working in energy boomtowns. The qualitative study featured in this paper begins to fill that void in the literature as it examines how an increased volume of service calls resulting from an oil boom affects individual police officers. Specifically, this study focuses on perceived benefits and drawbacks of rapid population growth for individual police officers, as well as stress and job satisfaction of police officers working in oil boomtowns in western North Dakota. This study found that police officers experienced increased stress as a result of the increased volume of calls for service from the public. Despite the increase in stress, most of the officers stated that they had high levels of job satisfaction.

Changes in Police Workload in Western North Dakota

In 2006, EOG Resources (successor to Enron Oil & Gas Company) discovered the Parshall oilfield in western North Dakota (LeFever, 2008). After this discovery, oil production increased significantly in the Bakken oil shale region, resulting in North Dakota becoming the second highest oil producing state in the country (Kent, 2015). As oil production increased in the state, the populations of the communities located in the Bakken region also increased. Table 1 provides statistics of the population growth in eight counties and cities located in the Bakken region from 2000, 2010, and 2013. The population of Williston (located in the heart of the Bakken region) increased by 66.64 percent from 2000 to 2013. Other communities experienced a rapid increase in population during that time, including Watford City (128.85%), Killdeer (36.74%), Minot (19.63%), and Tioga (39.11%). Several counties in western North Dakota also experienced rapid population growth from 2000 to 2013, including Williams County (49.76%), Ward County (15.63%), and McKenzie County (62.34%). Population estimates provided by the US Census in Table 1 do not include people living in semi-permanent housing structures, such as recreational vehicle parks or man camps; therefore, it is possible that the population growth in the Bakken region is greater than the estimates provided by the U.S. Census.

Table 1 also shows a significant increase in the number of calls for police service from the public. The Williston Police Department reported a 857.51 percent increase in the number of calls for service from the public from 2000 to 2013. Other law enforcement agencies in the region also experienced unprecedented increases in service calls from the public, including Killdeer Police Department (394.27%); Tioga Police Department (277.27%); Minot Police Department (26.36%); Williams County Sheriff’s Department (73.63%); Ward County Sheriff’s Department (156.91%); and the McKenzie County Sheriff’s Department (152.03%).

Despite the increase in calls for service from the public, many law enforcement agencies in western North Dakota did not experience rapid hiring of additional officers to help respond to the increasing number of calls. For example, the Watford City Police Department experienced a 16,890 percent increase in calls for service from the public from 2000 to 2013, yet they only added six additional officers during that time. Similarly, McKenzie County Sheriff’s Department experienced a 152.03 percent increase in calls from the public, but only hired an additional nine deputies during that time. Table 1 shows that many of the law enforcement agencies in the Bakken region experienced an increase in service calls from the public, but did not add police personnel in proportion to the increasing volume of calls.

<table>
<thead>
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<td><strong>City Police Departments</strong></td>
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</tr>
<tr>
<td>Killdeer</td>
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<td></td>
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<td>• Population</td>
<td>713</td>
<td>751</td>
<td>975</td>
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</tr>
<tr>
<td>• Service Calls</td>
<td>629 (2005)</td>
<td>2,103</td>
<td>3,109</td>
<td>394.27%</td>
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<td>• Sworn Personnel</td>
<td>2</td>
<td>2</td>
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</tr>
<tr>
<td>Minot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Population</td>
<td>36,567</td>
<td>40,888</td>
<td>43,746</td>
<td>19.63%</td>
</tr>
<tr>
<td>• Service Calls</td>
<td>27,933</td>
<td>30,363</td>
<td>35,297</td>
<td>26.36%</td>
</tr>
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<td>• Sworn Personnel</td>
<td>60</td>
<td>60</td>
<td>72</td>
<td>20.00%</td>
</tr>
<tr>
<td>Tioga</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Population</td>
<td>1,125</td>
<td>1,230</td>
<td>1,565</td>
<td>39.11%</td>
</tr>
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<td>• Service Calls</td>
<td>44 (2005)</td>
<td>166</td>
<td>Not Available</td>
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<td>• Sworn Personnel</td>
<td>--</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Watford City</td>
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<td></td>
</tr>
<tr>
<td>• Population</td>
<td>1,435</td>
<td>1,744</td>
<td>3,284</td>
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</tr>
<tr>
<td>• Service Calls</td>
<td>41 (2006)</td>
<td>2,103</td>
<td>6,966</td>
<td>16,890%</td>
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<tr>
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<td>4</td>
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<td>150.00%</td>
</tr>
<tr>
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<td></td>
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</tr>
<tr>
<td>• Population</td>
<td>12,512</td>
<td>14,716</td>
<td>20,850</td>
<td>66.64%</td>
</tr>
<tr>
<td>• Service Calls</td>
<td>2,201</td>
<td>16,495</td>
<td>21,075</td>
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</tr>
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<td>21</td>
<td>24</td>
<td>38</td>
<td>80.95%</td>
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<td><strong>County Sheriff’s Offices</strong></td>
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<tr>
<td>McKenzie County</td>
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</tr>
<tr>
<td>• Population</td>
<td>5,737</td>
<td>6,360</td>
<td>9,314</td>
<td>62.34%</td>
</tr>
<tr>
<td>• Service Calls</td>
<td>2,754 (2005)</td>
<td>4,371</td>
<td>6,941 (2011)</td>
<td>152.03%</td>
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<td>• Sworn Personnel</td>
<td>5</td>
<td>8</td>
<td>14</td>
<td>180%</td>
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<td>• Population</td>
<td>58,795</td>
<td>61,675</td>
<td>67,990</td>
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</tr>
<tr>
<td>• Service Calls</td>
<td>3,567</td>
<td>6,080</td>
<td>9,164</td>
<td>156.91%</td>
</tr>
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<td>20</td>
<td>22</td>
<td>27</td>
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<tr>
<td>Williams County</td>
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<tr>
<td>• Population</td>
<td>19,761</td>
<td>22,398</td>
<td>29,595</td>
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<td>1,426</td>
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<td>19</td>
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<td>33</td>
<td>73.68%</td>
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Sources: North Dakota Attorney General (2016); U.S. Census Bureau (2016)

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*-- Did not report
Another way to examine changes in police officers work environment is to look at trends in arrests. Table 2 provides data on arrests made by the police in 2000, 2010, and 2014. Table 2 shows increases in arrests for property crimes, drug violations, and driving under the influence. Police agencies located in the center of the Bakken oil shale region have experienced the largest increases in arrests. In contrast, places located on the outer perimeter of the Bakken region (including Ward County and Minot) have experienced less of an increase in arrests.

Given the significant changes in population size and volume of calls for service from the public, how are police officers responding to these changes? Do officers see any personal benefits or drawbacks associated with these changes? Has the changing population affected officer stress and job satisfaction? The current study addresses these questions using face-to-face interviews with 101 police personnel working in the Bakken oil shale region.

**Police Officer Stress and Job Satisfaction**

Police stress has been studied extensively over the last four decades. Researchers have examined a variety of factors associated with police stress. Some of those factors include stressors found within police organizations, such as lack of administrative support and opportunities for promotion, inadequate training and/or equipment, intra-departmental politics, and shift work (Band and Manuele, 1987; Brown and Campbell, 1990; Hart, Wearing, and Headey, 1995; Kroes, Margolis, and Hurrell, 1974; Maynard and Maynard, 1982; Shane, 2010; Stevens, 1999; Storch and Panzarella, 1996; Toch, 2002; Zhao, He, and Lovrich, 2002). Frustrations with the criminal justice system and the administration of justice have also been identified as stressors for some police officers (Kroes et al., 1974; Stratton, 1986). Researchers found that belonging to the police subculture influences officer stress. Officers who perceive themselves to be part of the police subculture (or in-group) have reported less occupational stress compared to officers who do not feel like they are part of the police subculture (Rose and Unnithan, 2015).

Studies have also explored the relationship between stress and police officer demographic characteristics, including gender, race, educational background, and marital status. There are mixed research findings for the relationship of officer education and stress (Band and Manuele, 1987; Toch, 2002; Zhao et al., 2002). Band and Manuele (1987) found that officers with some college education (but no degree) experienced more stress than officers who had earned a college degree. Officer age and years of experience have also been associated with stress. Stress is most prevalent during the mid-career phase, and decreases in the later phases of an officer’s career (Savery, Souter, and Weaver, 1993; Violanti and Aron, 1995). It should be noted, however, that older or more experienced officers reported greater family-related stress than less experienced officers (Toch, 2002). There is also some evidence that male and female police officers experience stress from different sources (Hassell, Archbold, and Stichman, 2011; Kurtz, 2012), and that they deal with stress in different ways (He, Zhao, and Archbold, 2002). In addition, there are some studies that have found that police officers experience and deal with stress differently based on their race (Haarr and Morash, 1999; He, Zhao, and Ren, 2005). Studying police stress is important because there are many negative outcomes associated with it, including an increase in health problems, burnout, and cynicism, as well as lower levels of officer productivity and job satisfaction (Dowler, 2005; Kop, Euwema, and Schaufeli, 1999; Martinussen, Richardsen, and Burke, 2007; Yun, Hwang, and Lynch, 2015).
Job satisfaction is another personnel issue that can affect police work. A variety of factors have been included in research focused on police officer job satisfaction, including officer demographic characteristics, tasks associated with police work, and organizational characteristics. Studies focused on job satisfaction have found mixed results with regard to most officer characteristics. For example, some research has found differences in job satisfaction when comparing male and female police officers (Belknap and Shelley, 1992; Buzawa, Austin, and Bannon, 1994), while other studies have found no difference (Dantzker and Kubin, 1998; Zhao, Thurman, and He, 1999). Similarly, mixed findings have been reported with regard to officer race. Several studies discovered no difference in job satisfaction by officer race (Buzawa, Austin, and Bannon, 1994; Dantzker and Kubin, 1998; Zhao, Thurman, and He, 1999), while others found differences based on officer race. One study discovered that African American officers were more likely to feel criticized and believe that they are perceived as militant by the public; however, they were less likely to feel negative or depressed about their work (Dowler, 2005). Johnson (2012) found that African American police officers had higher levels of job satisfaction when compared to white officers. He explained this finding by suggesting that the department featured in his study might be one that empowers African American officers. Mixed results have also been discovered with regard to officer education level and job satisfaction. Some studies have found a positive correlation between officer education and job satisfaction (Dantzker, 1992), negative correlations between these variables (Lefkowitz, 1974), and no significant differences (Griffin, Dunbar, and McGill, 1978).

A negative correlation between years of police service and job satisfaction was uncovered in several studies (Buzawa, Austin, and Bannon, 1994; Dantzker and Kubin, 1998; Zhao, Thurman, and He, 1999). And finally, studies have found that officers with families report lower levels of job satisfaction if they experience difficulty balancing work and family life (Howard, Donofrio, and Boles, 2004). Overall, officer demographic characteristics appear to have minimal influence on officer job satisfaction.

Yim and Schafer (2009) explored the extent to which police officers’ perceptions of public opinion influenced their level of job satisfaction. Their study revealed that the more positive the officer’s perceived public perception, the greater the level of job satisfaction for officers. Cynicism toward the public has been found to correlate with officer job satisfaction. Johnson (2012) discovered a negative correlation between officer cynicism and job satisfaction.

Scholars have examined several organizational characteristics and officer job satisfaction. For example, officers working in agencies that utilize community policing have reported greater levels of job satisfaction compared to agencies that utilize a traditional policing approach (Greene, 1989; Zhao et al., 1999). Positive, professional relationships with co-workers also appears to increase officer job satisfaction (Jo and Shim, 2015; Johnson, 2012; Lee, Yun, and Lee, 2015). Officers who feel supported by administrators report high levels of job satisfaction (Johnson, 2012). Studies centered on supervisor feedback and officer job satisfaction have produced mixed results (Ingram and Lee, 2015; Johnson, 2012).

Job tasks have also been examined in conjunction with police officer job satisfaction. Officers who utilize a community policing–based policing style and place greater emphasis on community-based
tasks reported high levels of job satisfaction (Greene, 1989; Zhao et al., 1999). Miller, Mire, and Kim (2009) and Johnson (2012) revealed that an increase in job task variety results in higher levels of job satisfaction. Greater autonomy at work has also led to higher levels of job satisfaction for police officers (Johnson, 2012; Miller et al., 2009; Skogan and Hartnett, 1997; Zhao et al., 1999). It appears that factors associated with job tasks and police organizations have greater influence on officer job satisfaction than officer characteristics.

Only limited attention has been paid to the link between police stress and job satisfaction by social science researchers. This limited research conducted in the United States shows that police stress is related to job satisfaction (Hassell et al., 2011). Or to put it another way, officers who report the highest levels of stress also have the lowest level of job satisfaction. Studies conducted in Nigeria (Adebayo and Ogunsina, 2011), Taiwan (Kuo, 2015), China (Wang, Zheng, Hu, and Zheng, 2014), and Greece (Alexopoulos, Palatsidi, Tigani, and Darviri, 2014) have also found a similar link between officer stress and job satisfaction.

The current study contributes to the existing literature as it examines police stress and job satisfaction in a unique setting, the Bakken oil shale region in western North Dakota. To date, there are no published, peer-reviewed studies examining police officer stress and job satisfaction in communities experiencing rapid population growth as a result of energy production. In general, there has been very little research conducted on police stress and job satisfaction in medium- and small-sized police agencies (Crank and Caldero, 1991; Julseth, Ruiz, and Hummer, 2011; Scott, 2004). The current study also provides a qualitative look at police officer stress and job satisfaction. A majority of the existing studies have utilized quantitative data to study these topics. The current study responds to the following research questions: (1) What are some of the perceived benefits and drawbacks associated with the rapid population growth for individual police officers working in western North Dakota? (2) Has rapid population growth affected the stress levels of police officers working in western North Dakota? (3) Has rapid population growth affected job satisfaction of police officers working in western North Dakota?

Methodology

Data
This study is based on interviews with law enforcement officials working in oil boomtowns located in western North Dakota. Face-to-face interviews with police personnel took place in October 2012 through March 2013. Three researchers conducted interviews independently, resulting in each researcher conducting one-third of the total number of interviews (n=101). On average, each of the interviews lasted 45 minutes. Police personnel responded to the following interview questions: How (if at all) has rapid population growth resulting from the oil boom benefited you personally? How (if at all) has rapid population growth resulting from the oil boom affected your level of work-related stress? How (if at all) has rapid population growth resulting from the oil boom affected your level of job satisfaction? Open-ended questions allowed police personnel to provide “thick descriptions” (Geertz, 1973) or rich, detailed responses that include examples from their professional experiences.

Research sites
Eight police agencies located in four western North Dakota counties served as research sites for this study. A combination of factors influenced the selection of research sites. First, limited
resources narrowed the scope and sample of this study. A small, university-sponsored grant was the only source of funding for this project. Geographic location was another factor that influenced the selection of research sites. Since the focus of this study is the impact of rapid population growth on police officers working in western North Dakota, all of the sites had to be located within the Bakken oil shale formation in western North Dakota. Oil production was another factor considered when choosing research sites for this study. McKenzie, Dunn, and Williams counties are ranked as some of the highest oil producing counties in western North Dakota, while Ward County ranks fifth on the list of the lowest oil-producing counties in the Bakken region (North Dakota Industrial Commission, 2013). This variation in the sample allows for comparison of experiences of police personnel working in both high and low oil-producing counties. Population growth also influenced the choice of research sites for this study. All research sites had to experience some population growth in recent years. All eight research sites have experienced population growth since 2010, ranging from 1.1 percent to 42.3 percent. Finally, police agencies had to agree to participate in this study. Only two of the ten police agencies contacted for this study declined our invitation to participate.

**Description of the Sample**

Police agencies of various sizes are included in this study. Three agencies employ fewer than ten employees, three agencies employ 10 to 20 employees, and two agencies employ 30 to 60 employees. More than half of all sworn personnel from each police agency voluntarily participated in face-to-face interviews. Overall, 73 percent (101/138) of all sworn police personnel employed by the eight police agencies participated in this study.

Police personnel of various ranks participated in interviews. In smaller agencies, people in supervisory/management positions respond to calls for service alongside patrol-level officers and sheriff’s deputies. Most (76%) of the sample consists of patrol level officers and sheriff’s deputies, while 24 percent consists of personnel serving in positions ranging from the rank of sergeant up to chief of police. Over half (55%) of the police personnel interviewed for this study had 36 months or less of policing experience at the time of the interviews; 11 percent had 37 to 72 months; seven percent had 73 to 119 months, and 27 percent had 120 or more months of experience. More than half (58%) of the police personnel are married, and over half (55%) have children. Approximately one-third (35%) have earned high school diplomas and/or some college credits, while 40 percent have two year degrees, 24 percent have four year degrees, and one percent have graduate degrees. In an effort to protect the identities of our interviewees, officer race and gender were not collected during the interviews.

**Coding and Analysis**

Transcription facilitated the conversion of handwritten interview notes into electronic MS Word files after each interview. The research team utilized Glaser’s (1992) “grounded theory” approach or constant comparative method, where researchers begin their analysis with the first data collected, and then continuously compare themes, concepts, and categories for the duration of data collection. Members of the research team identified patterns and themes in the interview data as they conducted interviews independently, but also convened at the end of every day of interviews to compare and discuss themes from the interviews.
In an effort to increase intercoder reliability, two people conducted the final coding for all interview data included in this paper. Intercoder reliability is the extent to which multiple independent coders agree on the coding of data using a similar coding scheme (Cho, 2008). It is suggested that one or more additional coders should examine a subset of the original sample and maintain agreement with the main coder for at least 90 percent of the subset (Carey, Morgan, and Oxtoby, 1996).

Final coding and data analyses followed six general steps (Creswell, 2003). First, the organization of interview data involved grouping the responses to each individual interview question together, and then grouping individual responses to the interview questions by police agency. Second, a thorough reading of all interview notes resulted in several general categories based on the responses provided for each interview question. Most of the general categories are similar to those identified during the preliminary data analysis described in the preceding paragraph. Third, detailed coding occurred during several additional iterations of review of the interview notes. Coding categories consisted of responses that directly and indirectly fit into themes associated with each research question. Fourth, specific information found within the detailed coding categories provide descriptions of police officers’ perceptions of personal benefits and drawbacks of the oil boom, changes in job satisfaction, and stress. Fifth, the calculation of percentages represents the aggregate responses for each interview question. Several quotes from individual interviews accompany the aggregate findings to provide examples of the main themes. In the Findings section of this paper, these codes follow each of the selected quotes in parentheses to show that the quotes come from a wide range of interviews, as opposed to using quotes from only a select few interviews. The percentages for the responses provided for each interview question do not always equal 100 percent as police personnel provided more than one answer for most of the interview questions. The sixth step in the process included the final interpretation of the research findings. Findings from the interviews are explained using previous studies centered on work-role overload.

Findings

Perceived Benefits and Drawbacks Associated with Rapid Population Growth
The first research question examines how the rapid population growth has affected individual police officers working in agencies in the Bakken region. Most (84%) of the officers/deputies identified one or more ways that they have benefited from the oil boom, while 16 percent stated that the oil boom has not provided any benefits to them. The most common benefit mentioned by officers/deputies (36%) is that it has led to an increase in their pay. They expressed gratitude for receiving increases in pay; however, many of them stated that the raises are not enough to offset the increasing cost of living in western North Dakota.

We received a slight pay raise, but we need more. There are people who work at McDonald's who make slightly more than we do. (PO 30)

The pay bump was a significant one this last time, but they are still way behind the curve. I can get a lower level oil job and make more money than I do right now. It could be two times as much and it would have better benefits. (PO 100)
They recently gave us raises because they know that with our old pay we had a hard time paying for housing, gas and even groceries. (PO 1)

Another benefit identified by some (24%) of the officers/deputies is that the oil boom created more jobs in law enforcement, which in turn, provides them with jobs and job security.

I have the job that I want and that I went to school for. The economy is strong because of the oil boom. Also, people do stupid stuff, and because of that, I have a job. The oil boom gives me job security. (PO 15)

Well, it (the job) brought me here! It has been great that the city has been adding more policing positions. There are definitely more calls, and more officers are needed to handle the calls. The city is constantly expanding as well. It seems like they are annexing more and more land and therefore the city is bigger. More officers will be needed as the city continues to grow. (PO 46)

It is creating jobs. We cannot get enough people to apply for the openings we have. There is a lot of work to do. You can catch a DUI any time of the day or night. The amount of drugs in the area is up a lot. I enjoy working traffic and there is a lot of that to do, which I appreciate. (PO 96)

Nearly a one-quarter (24%) of police personnel stated that the high volume of calls gives them more experience than what they would get working in police agencies that receive fewer calls from the public. Many officers reported that “working one year in a police agency in western North Dakota is equivalent to working two or three years in police agencies not located in western North Dakota.” Several officers expressed concern that some people take policing positions in western North Dakota to get experience and then use that experience to get a job with police agencies located outside of the Bakken region. They believe that this is problematic because police agencies invest a significant amount of resources to train and equip new officers.

The experience that I and other people are gaining is beneficial. I know that some of the people working for the agency are simply looking for a resume builder so that they can go back to their hometowns eventually. I think that this experience is better than what you would get at a regular agency. (PO 41)

The experience is a real benefit. I get to do so many things I would not get to do in another agency. I get involved in a lot of drug arrests and DUI arrests. I get a lot of practice doing DUI sobriety testing and it makes me more proficient at it. I have become more proficient at policing in general. (PO 82)

We have become more of what I call a starter agency where people will come here, they will realize what it is like, the call load and how busy it is, and they will use this job to get experience to move on or as a stepping-stone to another agency. This is difficult because we pay a lot of money to train these individuals. We end up training them, so they can take their experience and go somewhere else. (PO 18)
Officers/deputies were also asked to identify any drawbacks (if at all) associated with the oil boom. Over one-third (37%) of the officers/deputies stated that the increase in the volume of calls is a drawback of the rapid population growth associated with the oil boom. Some (28%) reported that the increase in calls for police service, coupled with their agency being short-staffed, makes their job more difficult.

We have a much higher call volume. More bar fights. A lot more alcohol-related calls. The city is growing and the number of officers is not. We need to hire more people. Now we have to cover more area. They just recently expanded the city limits; which also means that there is more to cover for the officers with the same number of officers working here. That does not seem to work out well for us. (PO 17)

It is hard to attract people here for this job when the oilfield pays more money. Housing is also an issue. There has been an increase in calls, which has made our job a lot harder. (PO 29)

We are overwhelmed. Change is occurring fast in our city, too fast for us and as a result, we are always playing catch up. Some days I feel like the dam broke. The other day I had to stay for eight extra hours. There are too few of us to handle such a large increase in population. There are not enough cops to handle what is going on. (PO 81)

Some (28%) officers stated that traffic is a drawback resulting from rapid population growth in the area. Large oil and construction trucks congest roadways, which results in longer response times when responding to service calls. The heavy traffic makes it difficult to provide backup quickly for other officers that need help. Officers stated that there has been a significant increase in traffic accidents (many that have resulted in fatalities) and driving under the influence cases.

Over one-third (35%) of the officers/deputies reported that the population moving into the area from out of state has brought in some people with criminal histories, which they believe makes their job more dangerous. Almost one-third (31%) of the officers/deputies added that there are more drugs coming into the area with the increase in population.

There has been an increase in calls. I feel like the level of aggressiveness has gone up. There are more people who I end up going hands on with because they don't want to listen, and they are disrespectful. I believe that officers are at a greater risk than before because they take a lot more calls where people are carrying guns. New people are not invested in this community. (PO 21)

Our caseloads are higher. There has been an increase of shit bags or dirt bags or whatever you want to call them, coming here and they bring more drugs. There are people who carry guns that maybe shouldn't be carrying guns. There have also been more sex offenders moving into the area. (PO 24)

The oil boom has brought many unemployable people from other parts of the country here. This has increased the number of unsavory characters. Some of the people who show up here are able to find work, but many do not. Many of these new people have long criminal
records. For example, three people showed up from Louisiana and stopped by the agency looking for a homeless shelter. I told them that there is limited space at the nearby shelters. I also told them that the weather is not that bad so they may have to tough it out in their truck. A few days later, they were back at the agency. They had found work and celebrated by smoking marijuana. The first day at work, they had to take a drug test. When the results came back and they failed, they all were fired. Many of the oil companies communicate with each other on hiring and stuff so it is likely that these guys won’t find any work in the fields. (PO 74)

Nearly one-third (31%) of officers/deputies identified the high cost of living and lack of affordable housing as a drawback resulting from the oil boom. Many officers/deputies pointed out that the lack of affordable housing contributes to their agencies not having enough staff, as there are no places for newly hired officers to live. It is also a problem for currently employed officers/deputies because their pay is not high enough to afford most places to live. In some cases, newly hired officers cannot bring their families with them when they move to the region for work.

Housing. I feel like I am paid well for the job, but the cost of living eats away at that good salary because everything is so expensive. People cannot bring their kids here because the school systems are overloaded. In a lot of the classrooms, there are 35 kids to one teacher. I deal with the lack of having my child here by using Skype. I Skype with my child at night. I am friends with everybody in the department. I will not make friends with oil rig pigs. (PO 6)

Money—because of the cost of living. There is no way to move a family here. You will have to have them live in a hotel or in an apartment for $1,000.00 a month. That is way too expensive for most people. (PO 13)

Housing is a real problem. After I was hired, I slept on a couch for two months while I looked for a place to live. (PO 76)

The interview data suggests that police officers/deputies view the rapid population growth from the oil boom as both beneficial and problematic. The increase in population from the oil boom provides law enforcement jobs, job security, and significant professional experiences; however, the increase in population also increases the cost of living in the region, which creates financial strain for many police personnel.

The Impact of Rapid Population Growth on Police Officer Stress
When asked how (if at all) the oil boom has changed the stress associated with their work (new officers were asked to describe the stress [if any] related to their work), 74 percent of the officers/deputies stated that they experience high levels of work-related stress. More than one-third (36%) of these officers reported that their stress comes from the high calls for service load. The increasing volume of service calls makes it difficult for police personnel to complete tasks efficiently. Citizens become frustrated with the police when response times to their calls for service take longer than they would like.
My stress comes from the calls getting backed up and then having citizens pissed off when I finally arrive. Having to prioritize the calls and making sure that I am going to those calls that are most critical is stressful. It is also impossible to finish writing up the paperwork for one call before I have to go on to the next call. So having an increased workload is stressful. (PO 1)

Yes, it has negatively affected my stress level. There is more stress than in the past. There has always been some, but it is a new kind of stress, as I am dealing with a completely different cast of characters. I am responsible for training new people and there have been a lot of them. This agency has had a great deal of turnover. We have lost many employees to oilfield jobs, but that seems to have leveled off now. (PO 92)

There is an increased level of stress due to the oil boom. Some of that stress comes from the amount of overtime each person is working, along with the increased need to have time away from work to relax. It has been difficult to get vacation time due to being short staffed all of the time. Another stressor comes from the fact that some of the individuals arriving in town are more dangerous. When booze is added into the equation, they sometimes don’t make the best decisions. I think it would be better if more oilfield guys would bring their families with them. Maybe that would keep some of them out of trouble. (PO 48)

A perceived increase in danger associated with their work is also a source of stress reported by 34 percent of the officers/deputies. Many officers/deputies stated that they are less likely to know the people they encounter while on duty, which makes it more difficult for them to anticipate how these individuals will interact with them. Several officers also reported that they have experienced more aggressive, negative behavior from residents who have moved to the area from out of state. There is a perception among officers that more people are carrying firearms than in the past.

Yes. My stress level has gone way up. I interact with people who have guns and criminal histories that are more serious. More domestic violence calls than before. I run across people who have drugs, who carry loaded guns, some who have permits and some do not. We don’t have enough people. It is just me with no back up. To me, this is scary. I always wear my vest and other protective gear. We are dealing with a lot of stuff that we didn’t deal with before and it is very stressful. (PO 10)

Yes, exponentially. Officer safety is a greater part of my awareness now that I always feel like I am on edge. I used to go and kick down doors while serving in the military, and with that, there was the fear of the unknown of what was on the other side of the door. I kind of feel the same way now when I walk up to a car where it has tinted windows and several occupants. This job is very, very stressful. (PO 16)

There is more stress lately because most of the calls are alcohol and drug related and the interaction is more difficult. Another source of stress is unknown people with weapons and attitudes. I have seen an increase in the number of people who are disrespectful (usually verbal disrespect). They think we are just small town North Dakota cops. (PO 35)
The remaining 26 percent of officers/deputies reported that their stress level is not problematic. Many of these officers stated that this is their first job in law enforcement, so many of them said that they have nothing else to compare the stress of this job with at this point. The seasoned officers who reported that their stress levels are not problematic stated that police work is stressful no matter where you work; it is just part of the job.

**The Impact of Rapid Population Growth on Police Officer Job Satisfaction**

Officers/deputies were asked if the oil boom has influenced their level of job satisfaction (new officers were asked to describe their level of job satisfaction). Most (80%) officers/deputies reported that they are satisfied with their job. Many of these officers/deputies stated that they are happy that they have jobs where they can help people and make a difference in their communities. These officers also stated that job satisfaction comes from being able to respond to a wide variety of calls, exciting or “hot” calls, and being able to meet people from all over the country.

I love the job; I will do it for the rest of my life. I just know it. It is one of those jobs that people either love or hate. I really like it. (PO 75)

I am more satisfied with the job lately despite the stress. I am happy with the newer officers and some new perspectives that they bring to the job. We are able to learn a lot from each other. (PO 42)

It has improved the level of satisfaction a lot. I like the activity and interacting with people. Especially different people from different parts of the country. (PO 68)

The officers/deputies who reported low levels of job satisfaction (20%), stated that the high volume of calls, not getting enough time off/vacation, being required to work too many hours because their agencies are short staffed, and not having enough time to spend with their families are some of the reasons they are less satisfied with their work.

When I started here, the agency was fully staffed, but it has not been that way ever since. It would help us perform better as a cohesive unit if staffing improved. It is super stressful to be training new people all the time. (PO 95)

It has dropped. I enjoy my job, but the turnover makes it very difficult. Aside from the dirt bags that I interact with from out of state, people appreciate the police and our service. There is a salary compression issue in the department, which has lowered the morale. We know that there is money coming into the state from the oil, why are they choosing not spend it on us? (PO 22)

It has lowered it. We cannot keep cops here. People are leaving left and right. Why should I deal with the shit when the pay is low? I hear this from people in my department all of the time. Dealing with more shit for less pay. We have a very high turnover rate. (PO 32)

Several conflicting themes emerge when comparing the stress and job satisfaction interview data. For example, despite the fact that most (74%) officers/deputies reported that they experience high levels of stress, most (80%) officers/deputies also reported being satisfied with their work. Officers
stated that new residents are a source of their stress as they cannot predict their behavior when they encounter them on the streets; however, they also stated that meeting new residents from across the country increases their level of job satisfaction. The increasing volume of service calls has provided job opportunities and job security for many of the police personnel interviewed for this study; however, the volume of calls also creates stress as officers cannot keep up with the demand.

Conclusion

There have been significant changes in the communities located in the Bakken oil shale region in western North Dakota. These communities have experienced population growth in a short period of time. One result of the rapid population growth is an increasing volume of calls for police service from the public. The study presented in this paper found that the rapid increase in population size has affected individual police officers working in agencies in the Bakken region. These changes have increased officer stress, but have not had a negative impact on officer job satisfaction.

Several of the findings from the current study are not consistent with findings from previous studies centered on police stress. For example, Kroes et al. (1974) and Stratton (1986) found that frustration with the criminal justice system and the administration of justice is a source of stress for police officers. There were only a few officers in the current study that mentioned frustrations with the criminal justice system or the administration of justice as stressors. Rose and Unnithan (2015) discovered that officers who believed that they were part of the police subculture (or in-group) reported lower levels of stress. Police personnel in the current study did not mention being part of the police subculture when discussing stress. Some officers did state, however, that they were having a hard time dealing with the high turnover rates in their agencies.\(^1\) It would be difficult for any police subculture to form with such high turnover rates. Earlier studies found that a lack of opportunity for promotion was a stressor for police officers (Kroes, Margolis, and Hurrell, 1974; Maynard and Maynard, 1982). A lack of opportunities for promotion was not identified as a source of stress for officers in the current study. The high turnover rates in the police agencies featured in this study would enable officers to advance through the ranks very quickly. This means that an officer with two years of experience could be promoted to sergeant, or an officer with five years of experience could be promoted to police chief.

Most officers identified the high volume of service calls and an increase in perceived danger while on the job as the two main sources of stress. There were several stressors identified in the current study that were also identified as stressors in previous studies. Similar to earlier studies, some officers/deputies in the current study complained about a lack of support by administrators, inadequate training and equipment, and shift work (Brown and Campbell, 1990; Hart et al., 1995; Kroes et al., 1974; Maynard and Maynard, 1982; Shane, 2010; Stevens, 1999; Storch and Panzarella, 1996; Toch, 2002; Zhao et al., 2002). It is important to note that these stressors were secondary to the stress associated with the increasing volume of service calls. Police personnel who would be considered mid-career (9 to 11 years of service) reported stress more than officers with the fewest years of service and officers with the most years of service. In the current study,

\(^1\) Quantitative data regarding turnover was not available for the agencies participating in this study.
many of the new officers stated that their current positions were their first positions in law enforcement; therefore, they did not have anything to compare their current position to. Police personnel with the most experience appeared to have accepted the stressors associated with their work as several stated that policing is stressful no matter the location of the organization. Married officers reported high levels of stress compared to single officers. Many of the married officers did not bring their spouses or families with them when they moved to western North Dakota. The limited available and affordable housing prevented them from bringing their families along.

Most (80%) of the police personnel in the current study reported that they are satisfied with their job. There were differences in job satisfaction when considering the size of the organizations in this study. Similar to the findings reported by Howard et al. (2004), police personnel in the current study who spend less time with their families or have little free time for themselves were less satisfied with their job. Some officers in the current study stated that interacting with people from out of state who are disrespectful and aggressive toward them made them less satisfied with their work (Yim and Schafer, 2009). Officers also reported that the high volume of service calls prevented them from being able to spend adequate time with citizens in the community. Their interactions with the public have become more formal and less community policing–based (Zhao et al., 1999). The wide variety of service calls and greater autonomy were mentioned by several police personnel who reported being satisfied with their jobs (similar to Johnson, 2012; Miller, Mire, and Kim, 2009). Contrary to previous research (Dowler, 2005; Kop et al., 1999; Martinussen et al., 2007; Yun et al., 2015), police personnel in the current study reported high levels of stress, but also high levels of job satisfaction.

It appears that police personnel in the current study like the job that they are doing; however, the unusually high number of service calls is a major stressor. An analysis of the interview data suggests that police personnel in this study could be experiencing work-role overload. Work-role overload is a feeling that individuals experience when they believe that there is not enough time to satisfy all of their role expectations (Duxbury, Higgins, and Halinski, 2015). Work-role overload has been identified as a type of role stress that relates to the total amount of time and effort needed to complete role demands (Coverman, 1989). To put it another way, work-role overload occurs when there is an incompatibility among work demands and the time available to meet those demands. Work-role overload can lead to increased stress; workers can become dissatisfied with their job and perform their work less effectively (Kahn, Wolfe, Quinn, Snoek, and Rosenthal, 1964). Work-role overload has also been linked to increased anxiety, burnout, depression, fatigue, job absenteeism, and physiological stress (Duxbury et al., 2015).

It is critical for police organizations located in the Bakken region, and other places experiencing rapid population increases, to continue to hire more police officers/deputies to respond to the high volume of calls for service. Some of the police personnel interviewed for this study reported feelings of exhaustion and burnout from trying to respond to the high volume of calls. There is also evidence of increased turnover in the police agencies featured in this study. Hiring additional police officers could reduce the stress, exhaustion, and burnout described in the interview data. The additional police personnel could also help retain officers who are currently employed by the agencies in this study.
This study is not without limitations. First, the findings are based on officers’ perceptions of their work environment. Perceptions do not necessarily reflect actual work conditions. Furthermore, there is no information about officer race and gender for any of the agencies. In addition, the findings are only generalizable to police agencies in western North Dakota. Future research should use stress and job satisfaction scales to quantitatively measure officer stress and job satisfaction.

References


Voices from the Front Line: Human Service Workers’ Perceptions of Interpersonal Violence in Resource-Based Boom Counties

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Abstract

This research examined the perceptions of 40 human service workers about the challenges they faced related to interpersonal violence in rural North Dakota counties impacted by the oil boom. The primary goal of the research was to determine the impact of the oil boom on the human service delivery system in North Dakota counties, by asking human service workers about their experiences and the strengths and weaknesses of programmatic responses to the boom. Respondents reported that the prevalence and nature of interpersonal violence were affected by the changes brought about by the oil boom. Three key issues were identified: (a) a disconnection between official statistics and the actual workloads these personnel experienced; (b) how boom-related factors such as housing shortages contributed to violence; and (c) an increase in the unmet needs of the clients seeking help after the boom. Implications for service delivery in areas impacted by resource-based booms are discussed.

Key words: Boomtowns; oil booms, interpersonal violence, human service workers, crime and victimization

Introduction

Increases in resource-based exploration and extraction activities have created economic and population booms in rural areas throughout the globe. There is, however, a growing acknowledgment that the social costs of these booms must be weighed against the benefits of this development. These costs, or social ills, include negative impacts upon health and safety, reductions in the quality of life, stress on wildlife and the environment, inordinate demands on the local infrastructure, as well as higher levels of crime (Government of New Brunswick, 2012). There is a growing consensus that boom communities are afflicted with increases in antisocial behavior, disorder, and crime, although there is less agreement about the magnitude of these increases (Kowalski and Zajac, 2012; Ruddell, Jayasundara, Mayzer, and Heitkamp, 2014). While there is some debate over the accuracy of official crime statistics, law enforcement officials have consistently reported increases in crime in boom counties (Archbold, 2013; Montana All Threat Intelligence Center & North Dakota State and Local Intelligence Center [hereafter MND report], 2012), and analyses of court and officer workloads confirms those observations (Perry, 2007; Ruddell, 2011).

The complexity of studying crime in boomtowns is increased by a number of factors. First, certain types of crimes in general are underreported (Johnson and Elliott, 1997), and in 2014 only 46 percent of violent victimizations in the United States were reported to the police (Truman and Langton, 2015: 1). Rural community members may be less willing to report their victimization than their urban counterparts. Writing about rural residents, Smith and McElwee (2013: 116)
observed that “many victims of crime suffer in silence feeling a pressure to conform, ‘keep the peace’ and avoid making accusations.” Second, the newcomer populations in these communities tend to be young transient workers who may be reluctant to report being victimized as they might not want to come to the attention of law enforcement. Third, even when these acts of violence are officially reported to the police, there is no guarantee that they will be included in the Federal Bureau of Investigation’s annual Uniform Crime Reports, as many smaller rural law enforcement agencies lack the administrative capacity to accurately track and report these offenses in boom communities (Ruddell et al., 2014).

As a result, when it comes to fully understanding the scope and consequences of crime and interpersonal violence in rural counties undergoing resource-based extraction and development, the official crime statistics may only represent the “tip of the iceberg” in terms of the actual violence that occurs. In response to that gap in our knowledge, research is crucial to identify the distinctive patterns and impact of violence in boom counties. When official data are lacking, one strategy is to collect and analyze the perspectives of stakeholders involved in service delivery to obtain a more comprehensive picture of the nature of crimes they come into contact with and the challenges they confront. This information can, in turn, be used to inform intervention and prevention efforts, including building community resiliency.

The western North Dakota boomtowns described in this study emerged after hydraulic fracturing (fracking) increased oil extraction in the Bakken shale oil formation (an area encompassing approximately 200,000 square miles that extends beyond western North Dakota into Montana, and straddling the Canadian provinces of Manitoba and Saskatchewan). Tens of thousands of people, including families, came from all over the United States to western North Dakota in the mid-2000s in response to advertised employment opportunities in the fracking industry, and the industries that supported oil and gas extraction. Later in the decade, many of those who migrated to this region from around the nation were reeling from the 2008 recession, and eager to work in the oilfield industries. As a result this migration, small towns in the region began to experience enormous economic prosperity, and populations dramatically increased. Few of these places, however, had the infrastructure to support such economic and demographic changes.

As a result, small towns in this region began to experience enormous economic prosperity, and populations dramatically increased. Few of these places, however, had the infrastructure or capacity in their human service agencies to support such economic and demographic changes. The current study sheds light on violent crime in rural resource-based boom counties by examining the perceptions of human service workers about their agency’s experiences, responses, and barriers to services for victims of interpersonal violence. Human service workers were chosen for the study as they directly and indirectly confront the aftermath of interpersonal violence on a daily basis. Included in the sample of human service workers were educators, social workers, police officers, case workers, family therapists, and counselors. This investigation focused upon North Dakota counties that experienced population booms and industrialization due to the extraction of oil and natural gas starting in the mid-2000s (start dates of the boom varied somewhat in different counties throughout the state).

This study answers the following research question: What perceptions did human service workers have about their experiences of responding to interpersonal violence in rural North Dakota counties
impacted by the oil boom that started in the mid-2000s? Consistent with the World Health Organization’s definition (2006) of interpersonal violence, our study included youth violence, child maltreatment, intimate partner violence, elder abuse, and emotional, psychological, physical, and sexual abuse/violence inflicted by intimate partners, acquaintances, and/or strangers. In what follows, we contextualize our research with brief overviews of the boom-crime relationship and the programmatic responses to boomtown effects. Those sections are followed by a description of the methodology used in this study, the presentation of our research findings, and a discussion of the implications of our findings for service delivery in communities undergoing resource-based booms.

The Boom-Crime Relationship

A rising demand for natural resources has led to increased exploration and extraction activities in rural, remote and out-of-the-way locations throughout the globe. As these activities increase, there is a growing awareness that this development and industrialization results in a number of social ills that the Government of New Brunswick (2012) has called “boomtown effects.” These effects include a rise in antisocial behavior, disorder, and crime (MND Report, 2012; Perry, 2007; Ruddell et al., 2014). Although these challenges have long been recognized, much of our recent awareness of these social ills in North America has been disseminated by media outlets such as CNN, CBS, Atlantic Magazine, New York Times, and the Washington Post (Taber, 2013). One of the challenges of basing our knowledge of boomtowns on media accounts is that the information portrayed is not based on data that has been systematically collected or scientifically analyzed. In some cases, such as the portrayal of boom communities as the new Wild West, the extent of crime may be exaggerated (Ruddell and Ortiz, 2015) and social problems sensationalized (Willard, 2011). Thus, we should be wary of media reports regarding the effects of resource-based development on rural communities.

Generally, however, it is safe to say that the most recent resource-based boom has generally had adverse effects in rural counties, and these impacts are more pronounced in some communities than in others. Despite such observations, there has been no long-term systematic study of the impact of booms on human service agencies. When rural communities experience cycles of rapid population growth associated with resource-based booms there is an influx of young transient workers and, depending on the community, some fly-in and fly-out or drive-in and drive-out and live in temporary housing arrangements (e.g., “man camps” that may house 1,000 workers). Few of these workers intend on becoming long-term residents of these communities and they have little stake in what happens in these places (Carrington, Hogg, and McIntosh, 2011). Population turnover in counties experiencing resource-based booms is high and these dynamics reduce what Freudenburg (1984) calls the “density of acquaintanceship” to describe the proportion of community residents who are acquainted with one another and exert some degree of informal control over the conduct of others. When these informal arrangements weaken, the ability of residents to informally control antisocial behaviors and crime also decreases. Newcomers, who do not intend on becoming long-term residents, are less susceptible to these informal controls. As a result, it is not always the population increases per se that contributes higher levels of disorder or crime; the characteristics of the boom populations can also contribute to crime (Berger and Beckmann, 2010; Carrington et al., 2011).
There is some disagreement in the extant literature about the strength of the boom-crime relationship. Some research suggests that crime increases in these communities will be disproportionally greater than the population growth (Perry, 2007). However, other investigators who posit that levels of crime are proportionate to population growth challenge such findings. So, while the volume of crime may increase, crime rates may not reveal a statistically significant change (Forsyth, Luthra, and Bankston, 2007; Kowalski and Zajac, 2012; Luthra, Bankston, Kalich, and Forsyth, 2007; Ruddell et al., 2014). It is plausible, however, that the mixed results reported by researchers may be a function of the types of boom (e.g., mining compared with off-shore oil extraction), the era examined, the unit of analyses (e.g., counties compared with states), and the timing of the research (e.g., the phase of the boom). The locations where booms occur might also influence crime. The Government of New Brunswick (2012), for example, reported that some sparsely populated or remote communities may be especially vulnerable to disruptions caused by rapid population growth (see also Lee and Thomas, 2010).

Most of the studies of the boom-crime relationship mentioned above focus on overall crime rates and do not disaggregate the types of crimes, in particular interpersonal violence (Luthra et al., 2007; MND Report, 2012; Ruddell, 2011). Very few studies specifically examine different forms of interpersonal violence (although, see James and Smith, 2014; Komarek, 2015; Seydlitz, Jenkins, and Gunter, 1999) and its impacts on vulnerable populations such as youth, women, or the elderly. Endo, Ellington, and Nielsen (1984) found that social isolation, alcohol abuse, and criminal activity were associated with higher levels of spousal abuse in boomtowns. Durst’s (1991) examination of crime in Arctic communities revealed that spousal abuse increased before the boom and also continued afterward. As a result, the negative impacts of resource-based booms might persist after the boom ends.

Reductions in informal social control have been attributed to changing population characteristics, and in particular to the rapid increase in newcomer populations (Freudenburg, 1984). In addition to population change and turnover, a population imbalance typically occurs with the incoming male population disrupting the ratio of women to men. Persons with criminal histories are also drawn to resource-based boom communities. For example, Berger and Beckmann (2010) found that the number of registered sex offenders increased two to three times faster in resource-based boom counties than in recreational or agrarian counties experiencing population booms. Thus, not only does population turnover and change occur, but persons with criminal histories in search of employment might also be overrepresented in these migrant populations.

Responding to Boomtown Effects

The one consistent finding in boomtown research is that human service workers can be stretched thin by the demands placed upon their agencies (Weber, Geigle, and Barkdull, 2014). With regard to law enforcement, a joint study conducted by Montana and North Dakota law enforcement agencies found that “increases in calls for service, arrests, index crimes, fatal and nonfatal motor vehicle crashes, and sexual offenders, as well as significant turnover and recruitment issues have exacerbated the challenges experienced by law enforcement agencies. Law enforcement officials attribute much of the turnover and recruitment difficulties to employees seeking employment outside of law enforcement, low salary, and lack of available housing. The majority of law enforcement agencies reported a need for additional sworn and non-sworn positions within the

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next year and indicated a need for additional protective equipment and training” (MND Report, 2012: 2).

Similar findings of increased police workloads after booms occurred have also been reported in Canadian (Ruddell, 2011) and U.S. jurisdictions (Archbold, Dahle, and Jordan, 2014; Dahle and Archbold, 2015). In Wyoming counties, increased police workloads after booms also resulted in more criminal and civil court dockets (Perry, 2007). These findings suggest that the problem of increased workload demands are a predictable function of resource-based booms and that law enforcement agencies and their community partners must develop coordinated long-term strategies to mitigate these boomtown effects.

Several scholars have underscored the need to increase investments in law enforcement personnel and training in order to develop more effective crime reduction strategies in boomtowns. Focus groups conducted with 100 law enforcement officials who worked in North Dakota boom counties revealed that the volume and seriousness of crime was increasing and that the characteristics of offenders differed from what these officers had previously encountered (Archbold, Dahle, and Jordan, 2014; Dahle and Archbold, 2015). Dooley and Ruzicka’s (2013) study of North Dakota police officers who worked with victims of domestic violence and sexual abuse also revealed that the number of incidents had increased. These investigators found that their respondents had a basic working knowledge of these crimes but wanted more training so that they could better respond to these offenses. Attending training, however, was not always possible: Dooley and Ruzicka (2013) found that officers were so overcommitted that they had no time for training, which was an observation also reported in the MND report (2012).

Workers in agencies that deliver health, education, and welfare services in boom communities consistently reported being confronted with increasing demands (Weber et al., 2015). In a description of the responses of health systems in a Canadian boomtown, Sauve (2007) reported that the ratio of medical staff, physicians, and other medical personnel to the city population decreased while their numbers of patients increased. A survey of health service sector personal conducted in North Dakota identified that safe affordable housing, a shortage of first responders, and social problems related to the disproportionate number of single men were the biggest community concerns (Graner and Pederson, 2011). Schafft, Glenna, Green and Borlu (2014) also found that booms strain educational systems through increased school enrolment and a greater number of special needs students (e.g., English-language learners). The types of social problems confronting a community also vary throughout boom and bust cycles. For instance, Shandro and colleagues (2011) found that pregnancies and sexual transmitted infections increased during booms, while the number of persons suffering from mental health issues increased after economic busts. These investigators also found that in both boom and bust cycles health workers reported high levels of drug use and violence against women (Shandro et al., 2011).

Parties that have the most to gain from resource development are often reluctant to make financial commitments to mitigate the boomtown effects. Most corporate leaders are unwilling to make sizeable investments in these communities as any non-business expenditure reduces profit. Government officials, at all levels, may perceive increased personnel and infrastructure spending in boom communities to be unwise if an economic bust is anticipated (e.g., when resources dwindle and workforces shrink). The more boom and bust cycles that a community has experienced, the
more skeptical different constituents are about making long-term investments in the community in response to a current boom (Heitkamp and Jayasundara, 2012a, 2012b).

Heitkamp and Jayasundara (2012a, 2012b) found that local and state governments were reluctant to make long-term investments in infrastructure or social programs in North Dakota oil-based boom counties. Morrison, Wilson, and Bell (2012) speculated that many rural local governments lack the intellectual capital, expertise, or experience to confront these economic and population booms. Thus, many of the strategies that these small or rural communities develop in response to rapid population growth are reactive (Government of New Brunswick, 2012). Jacquet (2014: 6) observed that “unplanned and haphazard development…may present short-and long-term social and economic risk to the area.” As a result, it is important that researchers and practitioners work together to develop strategies to mitigate the extent of the social ills created by rapid growth in these places.

Altogether, the findings from our literature review in the two previous sections reveal that (a) there is a lack of agreement on the extent to which the volume and seriousness of crime increases after the start of a resource-based boom; and (b) there is consensus that heavy burdens often fall upon human service agencies and their staff members after a boom occurs—and these demands can persist for years. Our lack of understanding about the boom-crime relationship has a number of implications, as in the absence of empirical studies rumor and innuendo belie much of the public’s perceptions of boombtown effects and the most appropriate responses to these conditions. Speculating about the impacts of resource-based booms without a basis in sound research is a longstanding criticism of the boomtown literature (see Wilkinson, Reynolds, Thompson, and Ostresh, 1982).

In the pages that follow, we describe how semi-structured interviews and focus groups were used to investigate the nature of interpersonal violence in western North Dakota, as well as human service workers’ perceptions about the problem and barriers to service delivery. The following sections outline how we investigated these questions, the results of our analyses, and the implications for policy, practice, and research.

**Sample and Methodology**

This study is one component of larger ongoing study investigating the effects of the expansion in the oil and natural gas industry in western North Dakota, and in particular, the impact of such expansion upon human service agencies. Our research examined issues faced by practitioners in human service agencies, the strategies they have developed and employ, and the interventions they would like to develop in order to respond to the unmet needs of their clients. From a methodological stance, this research was based on a critical theory approach that is intended to use the findings to bring about social change and raise consciousness (Patton, 2002). This qualitative study brings to light the voices and experiences of the people living and working in the oil patch, and the authors acknowledge that their interactions and the nature of the methodology and questions posed has an influence on how the study is carried out and the results reported. Of special interest in this study was an examination of interpersonal violence and how those acts create challenges for human service agencies in four North Dakota counties affected by the oil and natural gas boom—namely, Williams, McKenzie, Mountrail, and Divide counties.
In terms of the context of the research, the current oil and natural gas boom started in western North Dakota in the mid-2000s due to new fracking technologies (Haggerty, 2012). This is the third boom to affect North Dakota, and the two previous resource-based booms in this region (in the 1960s and 1980s) were followed with economic busts. Oilfield activities have decreased since the price of oil dropped in 2014 (Oldham, 2016). Resource-based booms are not isolated to North America; in fact, they are part of a larger global trend. Consequently, the population increase in rural North Dakota that started in the mid-2000s is similar to other resource-based rural boom locations in Australia, Canada, and the United States (Carrington, Hogg, and Scott, this issue; Carrington and Pereira, 2011; Petkova-Timmer, Lockie, Rolfe, and Ivanova, 2009; Ruddell, 2011).

While there may be some dispute about the actual volume and severity of crime occurring in the Bakken region since the current boom began, consensus exists that demands on law enforcement organizations and human service agencies that respond to the after effects of crime have greatly increased (Archbold, Dahle, and Jordan, 2014; Dahle and Archbold, 2015; Heitkamp and Jayasundara, 2012a, 2012b; MND Report, 2012). The following section reports the results of interviews and focus groups with the staff members of human service agencies that provide services to victims of interpersonal violence.

Potential agencies were identified after conducting a review of the 2011 North Dakota Department of Human Service directory to identify agencies most affected by the boom. Potential respondents were recruited after an initial telephone contact by the researchers and the goals of the study were explained to them. All of the participants returned a signed consent form prior to the start of the study. Several additional participants were also recruited using a snowball method whereby participants themselves identified potential participants to the researchers, who were then contacted. All of the participants in this study were human service agency leaders and held supervisory and or leadership positions such as director, executive director, and/or program director. These individuals worked in a diverse range of agencies, including long-term care facilities, child care centers, residential care facilities, non-profit agencies serving people with disabilities, community-based mental health agencies, hospitals, law enforcement organizations, domestic violence centers, as well as local and regional social service agencies.

With respect to the demographic characteristics of the 40 respondents, 30 were female, and all were Caucasian. Their years of service ranged from six months to 40 years. For about 70 percent of participants, this was the first oil boom during which they served in a supervisory capacity.

The research was conducted in two phases, and in the first part researchers conducted individual interviews by telephone with the agency leaders. These interviews took place between spring 2012 and the end of summer 2012. Interviews ranged from 20 to 60 minutes in duration and averaged approximately 45 minutes. The second part of the study consisted of three focus groups that solicited information from the respondents about the problem of interpersonal violence and their agencies’ responses to these crimes. In terms of the focus group participants, agency staff members were first offered an opportunity to participate in the interviews. Several declined, and in order to obtain 40 focus group participants, potential respondents were identified and recruited through a snowball sampling strategy. As a result, a total of 40 human service workers participated in both the interviews and focus groups.
Both the focus groups and interviews utilized a semi-structured guide. The guide provided interviewers with a framework to address topics related to agency resources, service needs, and capacity. At the same time, the guide provided sufficient flexibility to allow for the exploration of new or emergent topics (see Patton, 2002). Rubin and Babbie (2009) describe the advantages of using open-ended, semi-structured questionnaires: they enable the investigator to retain flexibility and probe areas of interest that emerge in the study, and they allow participants the freedom to answer the questions in a manner they see fit. To ensure confidentiality, and to allow maximum freedom to provide information, the telephone interviews were not tape-recorded. In the focus groups, participants’ written permission was obtained to record the sessions, and the interview tapes were, in turn, transcribed.

Data gathered from the interviews were analyzed by the investigators using content analysis, and a number of key themes were identified using a process of data reduction that systematically identified and classified core categories and themes (see Hsieh and Shannon, 2005; Patton, 2002). To evaluate the reliability of the results produced by the analyses, two researchers separately analyzed the data and compared results. This comparison revealed that both coders identified similar themes, and differences were resolved by re-analysis and discussion.

Results

The primary goal of this research was to determine the impacts of the oil boom on the human service delivery system in North Dakota counties based on the perceptions of the experiences and perceptions of agency leaders. These respondents reported that the nature of interpersonal violence has changed as result of the oil boom. Three key issues were identified: (a) a disconnection between official statistics and the actual workloads these personnel experienced; (b) how boom-related factors such as housing shortages contributed to violence; and (c) an increase in the unmet needs of the clients seeking help after the boom. Each of these issues was addressed with special attention paid to its relationship with interpersonal violence. The following section presents the findings.

Official Statistics and Workloads

Respondents expressed little confidence in official population statistics, given that individuals living in temporary arrangements are unlikely to be counted in a census. With the influx of jobseekers migrating to oil-impacted communities, there is a sharp increase in the demand for housing, which results in shortages and high housing costs. To improvise, many transients and sometimes even locals live in temporary housing, as other rented accommodation is cost-prohibitive or unobtainable. In addition, a significant number of transient workers or jobseekers live in vehicles, recreational vehicles (RVs), or campgrounds. Other workers live in company-supplied housing that might hold 1,000 or more employees. These populations are not always reflected in government population statistics because many of these temporary arrangements have no established address. One respondent observed that there were “so many campers…I don’t know that you can get an accurate count.”

Study participants also expressed concerns about the lack of valid data regarding interpersonal violence. Of greatest concern was the underreporting in official crime statistics and the resulting
lack of understanding of the full impact of oil development on their work by state officials. For example, the Attorney General of North Dakota website reported that the overall crime rates in 2012 showed percentage increases that were consistent with the increased population (North Dakota Attorney General, 2013). However, many study participants believed that data does not reflect their workloads because the increased numbers of interpersonal violence cases exceeded the population growth, from their perspective. Consequently, the discontent between official statistics and agency workload made it difficult to secure additional resources. A conversation between three focus group participants illustrated these perceptions:

Female worker 1: I would say caseloads in all three of our counties have probably tripled.
Male worker: But that is not showing up on the state numbers.
Female worker 1: No.
Female worker 2: That is what I am saying. It is not showing up on the state numbers…We can’t get sufficient funding…Our work situation is not truly reflected.

Some of the workload increases are not directly attributable to crime. With respect to policing, for example, oil-impacted counties have experienced a substantial increase in serious traffic collisions (Ruddell, Heitkamp, and Mayzer, 2015) and the number of calls for services (MND Report, 2012). Although most of these occurrences are non-criminal in nature, they still require a law enforcement response and they draw the police away from law enforcement and order maintenance.

One reporting issue identified by a respondent was that agencies were sometimes restricted to identifying only one crime for events that included multiple offenses. For example, if both sexual assault and domestic violence are reported as occurring together, this data-gathering agency is limited to recording only one crime (typically the most serious offense). This reflects a systematic undercounting of criminal offenses. In response, some domestic violence and sexual assault agencies are collecting detailed offense-related data to more accurately identify the actual number of crimes that occurred, how many clients were served, and their demographic circumstances (e.g., whether they were from an oil-impacted county).

An additional factor that may hinder accurate reporting is that some cases are not counted because they were not referred to the appropriate agencies for services. There were, for instance, an overwhelming number of victims of family violence seeking help from agencies that do not specifically deliver domestic violence services because they could not access the appropriate services. One respondent observed, “It [the domestic violence shelter] is usually full, and I think the other county one is full too. So, we just handle it through us…We try to figure out what we can do. We work with the family and the kids.” As a result of these gaps in service delivery, it is unclear how (or if) these other cases are ever officially reported or if the type of services these victims receive are adequate.

Some participants believed that government officials did not want the true number of offenses to be accurately counted in order to manage public perceptions of the crime problem. There are concerns that the North Dakota oilfields were being negatively portrayed as being the Wild West by out-of-state media outlets (PR Newswire, 2015; Upton, 2016). As one respondent said, “The one thing I get the sense about is people don’t want these problems inflated.” In response, given
the problem of securing timely data from the state that accurately reflects their work, one participant described the need to gather and report data independent of the state reporting structure.

The volume and seriousness of officially reported crime also shapes public fears. Respondents explained that the general public in the communities that they served had conflicting views about the risks of victimization and about who was responsible for criminal offenses. There was some debate in the focus groups over who was involved in crime. One police officer, for instance, stated that it is a small proportion of the overall population: “we deal with 10 percent of the population 90 percent of the time.” Participants challenged the perception that growing crime rates were solely a result of increased transient or newcomer populations. As one respondent stated, “crimes are being committed by local people who have been here for years also. People refuse to see that.”

Perceptions about risk and dangerous populations, whether they are real or exaggerated, led to workers taking protective actions, including arming themselves. One participant described how a community member’s fears led her to carrying a firearm at her workplace. This person is fearful because she works in a high-traffic office where people often become angry, and her safety precautions included learning to fire a handgun from her office chair. That respondent is not alone in her desire for safety. A review of the North Dakota Attorney General (2014) website shows that the number of concealed weapons permits issued in oil-producing counties increased 649 percent, from 552 in 2005 to 4,136 permits in 2013 (see also Ruddell and May, this issue).

**Boom-related Factors and Violence**

The second key theme identified by the respondents was that the cases they were confronting were more serious and complicated due to the context of the boom. Respondents reported that the nature of oil booms poses unique vulnerabilities related to interpersonal violence. Some violent crimes are targeted at the most vulnerable members of their communities, such as women, children and youth, the elderly, and the disabled. For example, when a woman follows her partner to a boom community, her well-being can be totally dependent upon her partner. This vulnerability, combined with the lack of a supportive network, can contribute to social isolation and growing tensions within a relationship. The woman may, for example, be dependent upon her partner’s housing lease because it is common for the lease to be with the partner’s employer. As a result, they may have no other housing options. When this dependency is combined with a lack of social supports and/or employment, these women are more likely than women elsewhere to be trapped in violent situations that are difficult to escape. As one respondent explained, “A couple moves up here with kids but then they have a falling out in their RV and all of a sudden the mother and the kids are out on the street with no housing or if she is lucky to have to move in with mom and dad’s housing, which is another RV, but then that right there is another problem.”

Another respondent described how some families were isolated and they had few outlets for entertainment or the constructive use of leisure time other than drinking: “They are very isolated. That is what I have learned. Is that you have these, the ones that bring their families up here, they don’t have daycare so the woman aren’t working outside the home, so they are not meeting anyone outside the home, and so now it is them and the kids in this house and sometimes they have multiple people living in this house.” A focus group respondent explained, “They move in with their family and the guy is gone and trying to remodel when he is home for like four days off when he is gone.
for two weeks at a time. They bring in bunches of kids. The house is not decent to live in. The furnace doesn’t work, they have no idea. This is how neglect happens without intending.”

Another respondent described how the style of living creates vulnerability: “It is a different quality of life living in a camper because when you are that confined, like in a house, these kids can go to their room, people can defuse, and these families don’t have that option, and they can’t afford to be in a house and I think that that’s increased. Domestic violence in all, are a lot of the things that you see increasing. You look at that confined space.”

Some participants noted that even when families are trying to do the right thing, there are few community supports for them. As one worker stated, “We definitely have an element that is not good. But we also have an element [that is positive]. I had a Hispanic family stop at my house one day. They were looking [at] the horses that were in the pasture on the next farm to see if they could pay the family so the kids would have something to do on the weekends…I mean they were looking for activities cause they were living in an RV and trying to find entertainment. They were looking for a way to get out of that isolation.”

Some workers stated that when abuse occurs, victims from out-of-state often request bus passes to return home: “When domestic violence happens they want to go back home. They don’t want any services—basically just give me a train ticket or bus ticket—something to get me home. If they stay here, they end up going back to that. Whether it’s that particular abuser or they go on to that same type of lifestyle, or they just hookup with somebody else. We see a lot of addiction issues.”

Additionally, some respondents observed that many women who arrive in the oil patch are trapped in domestic or family violence situations in the middle of the winter. The harsh winter conditions in western North Dakota are unfamiliar to some newcomers from southern states and inadequate housing can be life threatening. Harsh winter conditions coupled with lack of housing further traps the victims in abusive relationships.

Growing up in a boom community poses special challenges for youngsters. Respondents noted that city youths who move to rural areas have few constructive activities to occupy their leisure time, and boredom might contribute to substance abuse, running away from home, or joining gangs. One worker observed that “our youth gang activity has increased lately…We see more runaway situations.” Additionally, some respondents noted that young people were coming of age with less life experiences and they made more money than their parents. O’Connor (2014) found that youth in a Canadian boomtown were presented with many high-pay, low-skill career opportunities. Similarly, one respondent in a focus group noted that “an 18 year old can finish high school with no work experience, join an oil company to drive a truck and make about hundred grand and that is way more than any of us make.” Such wealth, combined with immaturity, sometimes results in poor decisions that have negative consequences, and several respondents expressed concerns about financial literacy among these young people.

Human service workers were very vocal about vulnerability and risks created by the lack of affordable housing. Participants specifically identified the problem of responding to calls for service and locating clients or suspects/offenders among a transient and/or inadequately housed population. Both law enforcement and social service personnel were confronted with this
challenge. With the increase in transients and with no mechanisms in place to identify temporary residences, tracking, locating, and serving victim populations are complicated. As one worker asked “how do we find them?”

A reoccurring theme that emerged from the analyses was that it was difficult to respond to the needs of clients who moved into boom counties without adequate housing. A participant describes the challenges that a client faced: “He works in the oilfields, he’d been back to his home state and got into a dispute with his wife, so there’s a lot of tension when you have your spouse away for months and you come back and try to, you know, take over the family again. He mentioned this. It is hard being away, and its hard going back home and then coming back here.”

Problems in housing are also reflected in residential treatment placements, including domestic violence shelters, senior citizen housing, and foster placements. This situation was described by an agency administrator: “We have 15 to 20 kids in care now. [We] used to have five. We are doing all our daycare and foster licensing now…Foster care workers are traveling more. We are seeing more drugs, alcohol, and creating awareness through extension office for the community. We are seeing kids from states that have different standards and neglect versus truancy.”

Although respondents reported that the challenges of serving homeless newcomers existed, they also recognized that these individuals required help. One respondent described a community debate about the merits of establishing a homeless shelter. Another participant stated, “the community and some workers don’t want another shelter for people who are homeless [as] they worry this will bring more sex offenders and other bad elements.”

Prior research shows that resource-based booms attract persons with criminal histories, including registered sexual offenders (RSO) (Berger and Beckmann, 2010). Unstable housing arrangements make it difficult to accurately track RSO, and some of them do not abide by requirements to notify the authorities when they move. One respondent observed that “if, for example, employment background checks identify their previous sex crimes and they are not registered, by the time police visit the address...they have left the location.” Other RSO fail to register at all. As one participant noted, “We are up to 89 registered sex offenders in our community. People complain about that, but it’s the ones that are registered that we don’t worry about. It’s that ones that aren’t registered, and for them to be registered then I know where to find them if I need to see them. Our sex offender population has increased dramatically as well.” These observations affirm Berger and Beckmann’s (2010) findings, which showed that higher populations of RSO were found in resource-based boom counties.

The housing shortage has also created hardships for some senior citizens. One respondent explained that many older residents don’t have adequate housing or can’t afford their old housing. As a result, they now have to move in with their families, leave town, or both. Few residential care facilities exist in rural counties, and existing facilities are overextended and staff members are working beyond their capacities. The situation is similar for adults with disabilities. The lack of affordable housing for special needs populations places additional strains on families and makes elders or disabled persons more dependent and vulnerable. Some respondents speculated that the abuse of elders has increased due to the lack of housing. Respondents also stated that these circumstances enable caretakers to financially exploit these elders.
Increase in the Unmet Needs of Clients Seeking Help

Focus group participants observed that the contextual nature of the oil boom has also changed the nature of the work they carry out. All of the respondents remarked that they are seeing a greater number of clients with more complex sets of problems and unmet needs since the start of the oil boom. These respondents are no longer serving what they consider the “typical client,” and there are more individuals from different racial, ethnic, and religious backgrounds seeking help. As one worker stated, “we used to get our order from law enforcement and you knew the people and you knew their extended family and now it is different.” Workers also mentioned that even long-term local residents present with more complex problems due to the added stressors in the community.

Clients now arrive at agencies with a larger set of unmet needs, which complicates service delivery and might also exacerbate the harmful effects of victimization. For example, workers noted that the prevalence of substance abuse and mental health concerns in both local and transient clients who seek services for family violence had increased. As one participant stated, “We see a lot of addiction. We are seeing a lot more mental illness coming through; just harder clients to work with…We have all these other sides.” The participants described serving clients who had moved from out of state with few resources and no social supports or links to the community. Human service workers are also now serving newcomers who have a complex set of problems resulting from family violence. A focus group participant described concerns about medical problems in youth they are serving: “Three children we had to take for dental surgery, okay, and that is because the last one we took had three abscesses, had to have two teeth removed and had a filling in every tooth in a month…It was hands down neglect but that one we know for sure that there was a cocaine bottle yah know and meth in the homes.”

Workers are also observing new types of interpersonal crimes in their rural communities. For example, one worker explained, “We are seeing increasing educational neglect, parents are not sending their children to school—now that is new to us—of course it might be they are coming from other places where there was a different standard.”

Some respondents also stated that they are seeing a higher number of sexual assault cases, especially among local women who are assaulted by perpetrators from outside the community. Some respondents said that the 2012 kidnapping and murder of a Montana schoolteacher by newcomers has community residents on edge about safety. These offenses have contributed to a growing tension between newcomers and long-term residents, a phenomenon that has previously been reported in the boombtown literature (Brown, Forsyth, and Berthelot, 2014; O’Connor, 2015). This tension creates a cycle where community members perceive newcomers as a threat, which, in turn, increases levels of fear. It is possible that some of this antipathy and fear are a result of the growing population heterogeneity, as there are higher proportions of non-white residents living in these boom counties.

Many newcomers do not bring their families due to a lack of housing, and these family separations can also contribute to dysfunctional arrangements. As one participant stated, a youth who was being served had “actually beat the mother up quite badly and their way to deal with it was to put her on a plane to live with dad who works in an oilfield.”
One consistent finding that emerged from the analyses of the interview and focus group data was that human service workers are seeing more severe types of abuse. For example, strangulation-related domestic violence cases are on the increase. Additionally, the use of weapons in assaults has become more common, so the crime of aggravated assault is on the rise. The following statements from the respondents highlight some the cases and circumstances that they confronted:

We help a woman that had to have facial reconstruction essentially go home to her family in California.

Now law enforcement[,] they won’t go single to anything now[.] They need double [two officers per call] because of the increased volatility.

And the county has said we will no longer go to one CPS [child protective services] [call] without law enforcement. They are with us every time we go whether it is education, neglect, or drugs.

Well, we had never, ever, ever used to hear of a shooting [related to domestic violence] and now…even our sheriff had a gun pointed in his face just the other day.

The focus group participants also reported that they had responded to a greater number of sexual assault offenses committed by strangers.

A number of respondents noted that they were confronted with a higher number of incidents related to sex work. Some workers said they believe sex trafficking is a new problem in their community. In addition, respondents explained that they are seeing youngsters, including foster children, involved in prostitution. Media accounts of boomtown life have reported that incidents of the sex trade increase in these communities due to the imbalanced gender ratio and the fact that the number of young males who are earning large salaries increases (Eligon, 2013). This observation was echoed by some of the study participants who also believed that the gender ratio imbalance was a factor for increased sex trade. Some participants also indicated that the oil boom may have also attracted organized crime into their communities. One participant remarked, “I have heard gangs, you know, prostitutes that are living with different people in town, and, um… I hear trafficking cases…” Another respondent explained a scenario where “this lady comes along[.] She is in a motor home, and she stops at this friends of mine, who lives along the highway…There are motor homes, campers, tents, everywhere…So, this lady stops in her yard, and says, ‘I can’t find any place to park. Can I park there?’ My friend says oh, yeah I guess you can. Well, after she’s parked there for a month or so she realizes she is running a prostitution ring.” Archbold, Dahle, and Jordan’s (2014) study of North Dakota police officers also revealed that incidents of prostitution had increased. One of the challenges confronting law enforcement is that the involvement of gangs or organized crime in prostitution or the drug trade contributes to levels of violence in boom counties as these groups compete for profits. The inability to properly respond to the needs of these individuals was a source of stress for these respondents.

Discussion
The results presented in this study are consistent with Goldenberg and colleagues’ (2008) findings that the downside to an oil boom is not limited to the bust, but that many boomtowns and counties experience a number of social ills, including increased levels of interpersonal and family violence. Crime and violence have a corrosive effect on a community’s well-being that result in a number of negative short- and long-term social, health-related, environmental, and economic effects. These social ills increase stress on the social fabric that in turn impairs a community’s resilience to crime. Respondents in this study revealed that increases in interpersonal crimes associated with the oil boom in western North Dakota have reduced the quality of life for residents of the counties they serve (see also Fernando and Cooley, 2015). The following paragraphs summarize the key themes that emerged from the analyses of respondents’ perceptions of these social ills.

First, the respondents in the interviews and focus groups consistently reported that their workloads have increased since the start of the boom as a result of interpersonal violence, and they believed that official statistics do not accurately capture either those offenses or the additional efforts required to manage the aftereffects of these crimes. Many acts of interpersonal violence were thought to be hidden and underreported. This underreporting makes it difficult for agencies to justify adding resources to respond to these crimes, in spite of an obvious increase in workload. It appears their experiences are more consistent with official statistics that highlight the actual increases in crimes, rather than rate trends consistent with population increases. For example, a 2013 report by the Attorney General found a 23 percent spike in aggregated assault crimes in the western oil-producing counties (Weltz, 2014). Moreover, the federal government reported a 32 percent increase in crime in the Bakken region from 2005 to 2011 and an increase in violent crime (National Drug Control Strategy, 2014). That federal report underscores the need to pay specific attention to the Bakken and the increased public health and safety challenges faced in these oil-producing communities. Participants also discussed overall higher levels of fear about interpersonal crimes. This fear, whether about real or imagined crimes, has a harmful effect on community life (see Britto, this issue). Reports about crimes contribute to mistrust and tension between newcomers and long-term residents. Many live in fear of victimization, which reduces the likelihood and quality of social interaction (e.g., people greeting others on the street). Residents modify their behavior to reduce their risks of victimization, and they are less willing to interact with strangers or change their routines (e.g., they no longer walk alone at night or avoid places or persons) (Ruddell and Ortiz, 2015). Also in response to this fear, residents are arming themselves. Altogether, these perceptions may contribute to a reduced density of acquaintanceship (see Freudenburg, 1984), which may further erode community well-being and actually contribute to higher levels of disorder, anti-social behavior, and crime.

A second finding was that victimization was related to the social atmosphere shaped by the oil boom, which created circumstances ripe for crime and victimization. Respondents reported that crime has a significant impact upon the most vulnerable people in the community: women, young people, and the elderly. A consistent theme that emerged from the analyses of the interview and focus group data was that the gap in service delivery was the largest for women who had been abused, female-headed households with children, and other vulnerable populations with limited resources trying to survive economically in the oil patch. Moreover, newcomers to resource-based communities may also be at higher risk of victimization than long-term residents. Hunter, Krannich, and Smith (2002) reported that newcomers were more fearful of crime than long-term residents.
Respondents also observed that some victims are socially isolated and this may exacerbate the effects of their victimization and reduce their likelihood of escaping their abuser or preventing future crimes. Additionally, housing in boomtowns is scarce and very expensive (Weber et al., 2015). As a result, many women are dependent upon their partner’s housing, which creates another level of vulnerability. Access to affordable housing was a key challenge identified by all of the respondents, and the lack of housing forced victims and offenders alike into temporary, unsuitable, or unsafe arrangements. This was particularly harmful for women who had been victimized by their partners and who felt trapped as they had no place to escape. This isolation is increased for newcomers with few social supports. The respondents overwhelmingly reported that the consequences of being victimized in resource-based boom communities, which tend to be in rural or out-of-the-way locations, may be more serious than in urban settings.

Finally, almost all of the respondents reported that the clients they were encountering had a different set of challenges than they had experienced in the past. Not only were persons coming to North Dakota from all over the country—and bringing with them different norms, expectations, and experiences—but their transient status made it difficult for them to access services, and for service workers to access them. Respondents reported that the volume of cases of serious abuse, neglect, and victimization was also greater than previously encountered. Although demand for these services increased, access to addiction and mental health services is limited, which creates additional concerns as clients cannot be referred to these services, or if they can be referred, their conditions might worsen before they are actually seen by the agency.

While this analysis describes the difficult situations that human service workers in western North Dakota confront, the study of boomtowns could also be informed by obtaining the perspectives of the workers engaged in oil and gas extraction industries, as well as local and state legislators. One important question that also needs to be answered is how the burden of providing services in boom communities can be shared with the corporations who profit from this development.

One major limitation of the current study is its lack of examination of the prevalence and consequences of interpersonal violence experienced by American Indians. Media accounts report that rates of victimization in these populations have increased since the start of the boom (Associated Press, 2012; Sullivan, 2016), and these concerns have been echoed in testimony before the US Congress (Brunner, 2013). The problem of economic development and industrialization in rural communities of Indigenous populations around the globe is garnering more scholarly attention (Sawyer and Gomez, 2012). Future studies need to better describe how this development has impacted American Indians. Another limitation is that while the information collected in western North Dakota was both rich and comprehensive, the findings may not be generalizable to resource-based boom communities in other places.

Participants in this study described that while the expansion in oil and natural gas extraction has increased economic wealth for some North Dakota residents, the human service sector, by contrast, has been harmed by the boom. Inadequate resources to address service delivery shortcomings were repeatedly described by the study participants as one of the most frustrating and serious problems confronting their operations. As noted above, the people working within human service agencies experience an array of frustrating burdens “while somebody else benefits.” This research
documents these burdens and is intended to inform policymakers and the public, giving a voice to the experiences of the staff members working within human service agencies.

**Conclusion**

The findings from interviews and focus groups of practitioners revealed some distinctive challenges in their responses to interpersonal violence in resource-based boom counties. A key observation is that much of the creativity, time, and resources of the staff working within human service agencies in North Dakota boom counties is spent reacting to the demands caused by the boom. An inordinate time spent on these reactive responses reduces an agency’s capacity to engage in proactive interventions that might actually target the sources of the boombound effects described above. In some respects, this growth and the problems associated with that growth are predictable, as other resource-based boom communities throughout the globe have faced similar challenges.

Research on the boom-crime relationship and how to best respond to disorder, crime, and other boombound effects is important because it can help practitioners create an inventory of best practices that will enable civic leaders and policymakers to (a) implement better crime reduction strategies, and (b) develop more effective responses to reduce the negative impacts of crime on victims. Once those goals are achieved, leaders in rural boom communities can develop proactive strategies that mitigate the other social ills associated with boombounds.

The social policy implications of this study are comprehensive. Social service programs including law enforcement in boombounds must be responsive at both the macro and micro levels. Additionally, social policy changes must occur in a political climate where local governments may not have the depth of experience to manage the multiple demands created by the boom. A host of professionals must work together in a chaotic environment where agency leaders might be very competitive rather than cooperative. In addition, senior governments may be more responsive when agencies use actual statistics to define the need for services. The participants in this study consistently described the difficulties in securing accurate quantitative data. As a result, an important first step in a full understanding of the boombound is to be able to accurately describe the nature and scope of the problem.

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Alcohol, Violence, Frontier Masculinities and the Australian Mining Boom

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Abstract

While the economic impacts of mining in Australia have been widely discussed, the social impacts of mining are subject to much speculation. In the social sciences, the impacts of mining have largely been understood through a social disorganization lens, with population instability being linked to social disorder. Recently, critical criminology has also linked violence and fear of crime in mining regions with work patterns associated with supercapitalism and an overreliance on non-resident workforces. This paper draws on data from in-depth interviews and focus groups from three mining regions in Australia. We argue that the criminogenic impacts of mining must be understood in relation to both the ecological aspects of rural and/or isolated communities and the power relations that exist in these communities. In particular, we contextualize the criminogenic impacts of mining with reference to gender relations in mining communities and what we refer to as monologic expressions of masculinity. The paper contributes to the burgeoning literature on violent crime in diverse rural settings.

Key words: Boomtowns, power relationships, alcohol abuse, masculinity,

Introduction

Regarded by many critics as the best Australian film ever made, Wake in Fright [aka Outback] (1971) sits firmly within the genre of what has been referred to as Australian Gothic or, more broadly, rural horror (Bell, 1997). The film is a Faustian tale of a city teacher, John Grant, who is posted to the small and isolated outback town of Tiboonda. Grant plans to travel to Sydney and visit his girlfriend for the Christmas holidays, but finds himself stranded in the nearby mining town of Bundanyabba (known as “The Yabba”) after succumbing to various social degradations involving gambling, violence, and sexual licentiousness, during the course of a three-day alcohol-fuelled binge. The film culminates in Grant attempting suicide and returning to Tiboonda for the new school year, having never reached Sydney.

Against an outback landscape, posters for the film ran the tagline, “Have another drink, mate? Have another fight, mate? Have a taste of dust and sweat, mate? There’s nothing else here.” Australian audiences baulked at the film on its initial release—its brutal portrayal of Australian culture being at stark odds with a cultural canon that had largely mythologized the outback and rural life. During an early screening, a clearly disturbed Australian audience member stood up and yelled, “That’s not us!” To which one of the films stars, Jack Thompson, yelled, “Sit back down, mate. It is us!” (Roland, 2014).

Having been “lost” for many years, the film was remastered and re-released in 2009. The timing could not have been better. Australia was experiencing unprecedented growth in mineral exports,
which would not peak for another three years. The hedonism of The Yabba resonated in media stories of mining boomtowns. The film’s deconstruction of masculinity also resonated in an Australia where terms such as “poofita” seemed archaic.

We had just received national funding to investigate masculinity and violence in rural Australia. The study had largely scoped places that could be considered “agricultural,” but it became increasingly apparent, having visited an outback mining town, that a comprehensive understanding of violence in rural places was not possible without close attention to mining towns, a significant gap in the existing research. This article draws on interview data collected from several mining towns at the height of the Australian mining boom in 2010, as part of that larger research project. While the economic impacts of the boom are well documented and known, the same cannot be said of the social impacts and very little is known about criminogenic factors associated with mining. In particular, we examine how the contemporary architecture of mining communities, especially work and leisure practices, may accommodate violent crime. This paper extends our previous research, which argued that “supercapitalism” has created anomic environments with brutalizing effects on workforces and destructive ramifications for community stability (Carrington et al., 2011, 2012, and 2013; Scott et al., 2012). In particular, we examine how violence presents as a strategy to symbolically and physically resolve contradiction and conflict within a highly gendered rural social order.

**Literature Review**

As has been the case elsewhere, criminology in Australia has largely been concerned with urban articulations of crime and criminality (Felson, 1994; Shaw and McKay, 1931; Tönnies, [1887] 1955). Early research into rural crime largely confirmed the view of rural communities as embodying Gemeinschaft qualities based on dense local networks, strong social bonding capital, and organic forms of solidarity (see O’Connor and Gray, 1989). Some of the rural neglect can be put down to the way in which bucolic agricultural centers approximate what has been termed “the idyll” (Bell, 1997, 2006) and the revelation that crime exists in such places challenges core modern assumptions about the nature of crime (Barclay et al., 2007; Hoge and Carrington, 2006).

In contrast, mining towns approximate Gesellschaft relations and present as the frontier—a place of becoming and transformation—rather than a static site of community (Scott et al., 2012). Conventional social science has represented mining towns as “distinctly deviant,” associated with capitalism and the destruction of nature, especially when contrasted with agricultural sites. Mining, grounded in luck, risk, and chance, is the quintessential other to farming, which is seen as the normative occupation, its natural rhythms opposed to the social disruption that emerges from mining (Lahiri-Dutt, 2012). While Australian agricultural communities have been cleansed of their violent histories, especially with regard to race relations, the bloody history of Australian mining regions is more readily acknowledged.¹

¹ Crime in mining regions may be considered as something that is historical and associated with frontier periods, especially to the extent that “vice” would often be firmly regulated in such places as they morphed into settler communities. Nonetheless, there is much in Australian folklore, from the fabled Eureka Stockade Rebellion to Gold Field race riots, that suggests that violence is a fundamental part of the history of mining in Australia.
Mining communities remain places of transformation in the national psyche. They are not “communities” but temporary, chimeric places. Yet mining towns have rarely figured as places for the study of crime, as it is popularly understood. What is absent, even in the histories of mining places, is an understanding of violence as an everyday event, or any appreciation of the sociocultural dynamics of such violence. And while mining and agricultural communities may differ in terms of economics and politics, they notably share a social order that is grounded in rigid gendered norms.

A growing body of critical research contradicts romantic images of a crime-free rural life (Carrington, 2007; Deller and Deller, 2011, 2012; Donnermeyer and DeKeseredy, 2014; Hogg and Carrington, 2006; Wells and Weisheit, 2004). Attention has also been directed at the relationship between mining and violent crime (see, for example, Carrington et al., 2011). The rural social order is also a product of power relations, and gender has been a significant feature in rural structuration, not only in the extent to which it divides men and women, but also in the way in which it creates gendered hierarchies among men (Carrington and Scott, 2008).

Following US research into rural crime, early Australian research on rural crime adopted social disorganization theories as a way of understanding rural crime patterns (Donnermeyer et al., 2013). However, the social disorganization frameworks mostly developed in mid-western US contexts (see Weisheit et al., 1995), which were a long-way removed from Australian conditions, especially isolated mining communities. To this extent, the neglect of mining regions in formulating an account of violent crime in Australia certainly reflects the way in which a “Northern” agenda can define the margins of research in the global South (see Carrington et al., 2015).

Social disorganization starts with the fundamental assumption that places with high levels of cohesion and solidarity have lower rates of crime, while places with less order and more disorganization display more crime (Kubrin, 2009; Sampson, 2012). To a great extent, social disorganization has sought to identify social strains (residential instability, ethnic/race heterogeneity, family instability, etc.) or sought to test the mediating influences that a rural locality’s structure has on crime as measured by official police statistics (Donnermeyer et al., 2013). While some of this research challenged the assumption that crime rates were lower in rural places, this was typically evidenced with reference to property crime, including farm crime (see Barclay, 2002). In this way, violent crime tended to be less visible in this work and was generally under-theorized in rural criminology. A weakness of the theory was its inability to account for the interpretive dimensions of criminogenic orders and power relations.

Social disorganization accounts of rural crime were first challenged by Hogg and Carrington’s research (2006), which widened the view of rural crime to include diverse communities of varying size, geographic location, demographic distribution, and socio-historical profile. Noting structural inequalities in rural towns, their research highlighted power relations especially with regard to racial and gender divisions. Referring to the “architecture of rural life,” this research also highlighted the way in which distinct social and historical features of rural places could create conditions in which crime would be both over-policing and under-policing, showing how the “crime problem” in rural places is in some ways a political artifact. While the racial dimensions of rural crime had been well documented in Australian research, with large proportions of the Indigenous population living in rural and isolated locations being subject to over-policing (Cunneen, 2001),
the gendered dimensions of rural crime had been less visible, partly obscured by an overemphasis on property crime (Carrington, 2007). Notably, this research suggested that aspects of an existing social order or social organization could actually produce crime, to the extent that certain activities or groups were socially marginalized and defined as deviant or criminal. Moreover, social capital, so cherished by social disorganization theorists for its capacity to informally control crime, was also implicit in the creation of a criminogenic order, which resulted in the over-policing of certain crimes and groups, such as Indigenous peoples and the under-policing of others (e.g., domestic violence in farming families).

Contrary to romantic images of rural life, Hogg and Carrington (2006: 66) found that the rates of violent crime in rural centers exceeded metropolitan averages. Research in other regions has since replicated these findings. An Australian Institute of Criminology study of drug use and crime in the Pilbara, a mining region of Western Australia, found that the region had crime rates for assault (both domestic and public) far higher than the state average (Gately et al., 2016: 2). A sample of 260 detainees were interviewed, of whom 51 were from the Pilbara region. The study discovered that those detainees had much higher rates of risky alcohol consumption, which contributed to their detention. Illicit drugs were also a factor but not as much as alcohol.

Increasing rates of crime in rural areas have been associated with economic decline and rising rates of unemployment (Carcach, 2000: 4; Carrington and Scott, 2008; Hall, 2002). The rural crisis—manifest in socioeconomic and population decline affecting rural Australians of largely white European descent—has exacerbated racial tensions and fuelled anxieties around Aboriginal crime and violence (see Hogg and Carrington, 2006). Critical criminology in Australia has highlighted the racialization of crime in rural towns, which contrasts with the experience in the global North where race and crime have been associated with urbanization and urban ghettos (Cunneen, 2001). Data indicates that Indigenous Australians—wherever they reside—are overrepresented as both victims and perpetrators of all forms of violent crime in Australia (Fitzgerald and Weatherburn, 2001:1; Memmott et al., 2001; Northern Territory Government, 2007). Given this context, it is tempting to simply attribute higher rates of violent crime in rural and regional areas to the disproportionately high number of Indigenous people located outside metropolitan areas, but this is not the case and research has indicated that male violence is not limited by race, despite lower rates of reporting and policing among non-Indigenous populations (Carrington and Scott, 2008).

The mining industry and mining towns in Australia are largely white, in contrast to places such as Southern Africa. Research into social impacts of mining on communities, although limited, has been increasing both in Australia (Carrington et al., 2011, 2012; Carrington and Pereira, 2011; Cheshire, 2010; Ennis and Findlayson, 2015; Haslam McKenzie et al., 2008; Lockie et al., 2009; Murray and Peetz, 2010; Petkova-Timmer et al., 2009) and elsewhere, including the United Kingdom and Canada (Doukas et al., 2008; Storey, 2008; O’Conner, 2015; Ruddell, 2011; Ruddell and Ortiz, 2015) and the United States (Archbold, 2013; Bell and York, 2010; Long et al., 2012, Perry, 2007; Stretesky and Lynch, 2011). Early research into the causation of crime in mining towns drew on population dynamics, especially population instability, to explain social disorder.

Certainly, the historical association of frontier towns in settler societies with vice and violence is vivid in the cultural memory, and there is historical evidence to indicate higher rates of violence in US boomtowns (McKenna, 2004). Mining has been an essential element of national mythology
in settler societies such as Australia, Canada, and the United States. Yet the story of the frontier is underwritten by a narrative proclaiming the progressive advance of civilization, the conquering of territories, and the taming of men. The historical evidence also indicates that during the later nineteenth century various expressions of vice in frontier communities became increasingly restricted as communities developed a stable agricultural economy, which brought more women and families to the frontier (Davidson, 1984; Harvie and Jobes, 2001). Again, social disorganization might explain aspects of this process, especially as it relates to the establishment on the frontier of powerful social institutions such as the family. Population stability also produced settlement in terms of close-knit communities with stable population patterns and widespread and close personal bonds between both individuals and community organizations. The towns that drew on frontiers, including mining towns that survived, were capable of establishing strong networks of regulation achieved through informal social controls. Yet the architecture of rural life has also been established through racial and gendered violence (Hogg and Carrington, 2006), which is often unacknowledged in national myth making.

Research has also found rapid economic and/or population growth is not universally linked with social disorder in rural places (Hunter et al., 2002: 73; Wilkinson et al., 1984), suggesting that what Hogg and Carrington (2006) referred to as the architecture of rural life may facilitate and prevent crime in varied settings. A number of studies claim changes in crime patterns in boomtowns are comparable to surrounding counties (Forsyth et al., 2007; Kowalski and Zajac, 2012). Moreover, research also suggests that the heaviest social impacts of boomtown dynamics may be limited to early phases of the boom period (Goldenburg, 2008; Hanson and Limerik, 2009; Hunter et al., 2002), with crime decreasing as population stabilizes.

Drawing on critical theory, the negative impacts of mining regimes have been associated with post-industrial work regimes, which exacerbate social tensions and conflict in rural communities (see Carrington and Pereira, 2011; Carrington et al., 2011; Carrington and Hogg, 2011; Scott et al., 2012). In Australia, a national inquiry received numerous submissions expressing concern about social disorder and violence associated with fly-in and fly-out (FIFO) workforces (see Commonwealth of Australia, 2013).

While there has been debate as to whether crime rates are proportionate to population growth, perceptions of crime have real impacts on quality of life (Anderson and Theodori, 2009; Brasier et al., 2011; Wynveen, 2011). Economic stagnation, growth, and population instability interrupt normal patterns of social life, and newcomers may be less likely to be influenced by informal social controls, such as sanctions or disapproval from established community members. Perceptions of social problems can also vary regionally and change during the course of a boom-bust cycle (Shandro et al., 2011). At the very least, social change may alter or reinforce existing criminogenic orders, which increase fear of certain crimes and populations, impacting on the policing of certain offenses and populations (Ruddell, 2011; Scott et al., 2012). There is much evidence to indicate that fear of crime can increase with population instability, being what might be termed the “people pollution” factor, the idea that newcomers are different and more prone to commit crime (Freudenburg, 1978; Freudenburg and Jones, 1991; Hunter et al., 2002: 73; Krannish et al., 1985; McGarrell et al., 1997; Scott et al., 2012).
The boomtown thesis challenges the association between crime and economic or social disadvantage. In resource boomtowns, average incomes and labor force participation rates are generally high (NRSET, 2010). Recent research on crime in mining communities suggests that violent crime, in particular domestic violence, has increased (Gately, Ellis, and Morris: 2016: 1–2). This finding contrasts with the research on violent crime in agricultural communities, which suggests relatively high rates of domestic violence are associated with economic decline and a rural gender order (Carrington and Scott, 2008). Often overlooked in the boomtown literature are demographic factors associated with population change and how these may be related to crime and violent crime in particular. Demographic changes can result in a sex imbalance, disruption of normal patterns of interaction, and consequent conflict, all of which are linked to crime in mining towns (Ruddell et al., 2014). At the same time, young non-residential (FIFO) workers have little stake in the community (Carrington and Pereira, 2011).

There are growing literatures on masculinities and crime (Collier, 1998; Gadd and Jefferson, 2007; Messerschmidt, 1993) and rural masculinities (Campbell et al., 2006; Campbell and Bell, 2000; Kenway et al., 2006; Kimmel and Ferber, 2006; Little, 2006; Woodward, 2006). It has long been observed among criminologists that young men are statistically more likely to be victims and perpetrators of crime, especially violent crime. Mining is a male-dominated industry. (Less than 20% of the workforce at the height of the Australian boom were women. See Gilmore et al., 2015). In national mythology, the male miner has either been idealized as an exploited proletariat hero or othered as exploiter of pristine nature (Lahiri-Dutt, 2012). The exaggerated masculinity of the mining industry has seen women being characterized as miners’ wives or as unproductive elements in mining communities, relegated to the private space of the home (Lahiri-Dutt, 2012). What is not well understood is how gendered social relations are maintained in mining towns and the role of violence in constructing local gender orders. Gender here cannot be considered simply as a dichotomous relation between the sexes, but should also be seen in terms of differentiation within genders and relations between masculinities and femininities that are conditioned by other social factors such as class and status.

As we have noted elsewhere (Carrington and Scott, 2008), masculinity is not a singular, ahistorical category, but a fluid and dynamic configuration, constantly being reshaped and contested (Connell, 1995: 76). Our attention is focused on the way in which the rural and the masculine intersect at a material and symbolic level. What concerns us here is how the architecture of rural life shapes the performance of masculinity. Rather than being an object to be maintained or recovered, masculinity is practice, exercised and existing only in action (Carrington and Scott, 2008). Masculinity is neither the product of invisible structures or an individual will or drive. Instead, masculinity is a complex and diverse, historically grounded, psychosocial product of dynamic social relations, played out in diverse spaces (Gadd and Jefferson, 2007).

The performance of masculinities in interactions at the pub, the club, the meat works, the mine, the union, the council, the sporting association, and other civic bodies has been and remains overwhelmingly more circumscribed in rural settings (Hogg and Carrington, 2006: 181). Hence, the spectrum of rural masculinities has been traditionally less heterogeneous and more heteronormative than what might be encountered in urban spaces, where a wider range of options for performing masculinity exist. Therefore, men in rural social landscapes lean toward monologic expressions of masculinity (Peter et al., 2000). Monologic forms of masculinity are characterized
by rigid expectations and strictly negotiated performances that draw a clear distinction between men’s and women’s activities (Peter et al., 2000). They are associated with extreme forms of patriarchal authority—or what might otherwise be called hypermasculinity (Connell, 1995). By contrast, dialogic forms of masculinity are open to emotion, empathy, reflexivity, and do not seek to exert power and control over others though brute force or patriarchal control (Peter et al., 2000). On the continuum between monologic and dialogic masculinities, some men lean towards one end more than the other. Monologic and dialogic expressions of masculinity can be encountered in a variety of spatial settings. The elevation of physicality, brute strength, and power of nature, women, and the land means that men in rural spaces tend to lean heavily toward the monologic end on the spectrum of masculinities. They are threatened in particular by the “invasion of FIFOs,” men from the city camping in Australian mining boomtowns, drinking in their pubs, and hitting up on their women.

**Project and Method**

This article draws on interview data collected as part of a larger Australian Research Council funded study of masculinity and violence in rural Australia. The study used a mixed methods approach, triangulating quantitative measures of violence (such as violent crimes and injuries; deaths and illnesses caused by violence, motor vehicle accidents; risky alcohol consumption; firearm injuries; domestic violence orders and injury surveillance data) with qualitative field research that involved interviewing. Triangulation of different methods (Punch, 1998: 247) is able to capture the qualitative richness and dimensions of violence as well as the wider sociological and criminological significance. While case study methodologies have limited generalizability, our project sought to triangulate findings where possible to enhance both reliability and external validity.

The team performed wide-ranging analyses of existing databases for sociodemographics, crime, mortality, morbidity, injury and accident data across more than 40 Local Government Areas (LGAs) within rural New South Wales (NSW), Queensland (QLD), and Western Australia (WA), generating 12 reports. In the Australian system, LGAs have the third and lowest tier of government, and those with lower population densities are usually larger in size. The norm is for LGAs to have one identifiable service (market) town, which is the center of governance for the provision of local roads, a limited range of community services and facilities, and town planning and development (but not of mines and associated infrastructure, which are mostly approved at state government level, sometimes with federal approval also required), plus a hinterland interspersed with numerous smaller towns and villages and, of particular interest for this article, many agricultural holdings (farms, properties, or ranches) of varying sizes within identifiable rural localities. From these analyses, three LGAs with measures indicating high rates of violence were selected for fieldwork. Each selected LGA contained a number of identifiable communities and all had resident populations of around 16,000 persons at the time of the 2006 Census. We drew informants from small, medium, and large rural LGAs from three states of Australia: NSW, WA, and QLD.

Over a two-year period we conducted field research in these communities, interviewing a purposive sample of 142 civic leaders, community representatives, justice, human and medical service providers across both mining and agricultural communities. The interviewees were almost equally divided between male and female (72 male and 70 female). There were 57 one-on-one
interviews conducted in conjunction with 28 focus group interviews. A perceived strength of the focus group method is the generation of rich, detailed valid process data that essentially leaves study participants’ perspectives intact (Bender and Ewbank, 1994). An additional advantage is that informants tend to react to and build on the responses of other group members who are also focusing their discussion on the research topic (Kitzinger, 2005: 57; Krueger and Casey 2000; Stewart and Shamdasani 2007: 43). Furthermore, some exponents of the use of focus groups (among them Liamputtong and Ezzy, 2005) regard the method as especially suited to extracting high quality information on sensitive topics with marginalized or silenced groups of people whose voices are rarely heard. Focus groups have also been suggested as an ideal research tool to use among people who have something in common (Morgan, 1997).

Snowball sampling is often used to identify hard-to-access or hidden populations (Minichiello et al., 2008). Although anonymity of informants was assured, ethical considerations limited our use of snowballing sampling. In terms of recruitment and sampling, ideally we wanted to access a cross-section of males and females with relevant experience and/or expertise who came from various social and cultural backgrounds and varying ages. Age spread would allow the capture of people in different stages of the life cycle, while gender coverage would provide different perspectives on various aspects of the research topic. However, an age spread was not achieved. The bias towards older and longer-term residents can be explained by the use of purposive sampling to recruit participants in each study location who were regarded as representative of the wider population (Liamputtong and Ezzy, 2005: 47).

We relied upon the local knowledge of these individuals, community group leaders, key stakeholders, and service providers to inform our recruitment of information-rich informants. Others were identified through community services and telephone directories. Of course, the identification of someone as “typical” is a matter of interpretation (Minichiello et al., 2008), but by pursuing certain civic associations and community organizations across three study locations, we broadened the base and representativeness of respondent types as well as the capacity to triangulate the qualitative data.

Key informants were invited to participate because of their recognized knowledge and/or expertise in particular fields. These informants often represented specific groups and were considered key because of their specialized workplace knowledge or personal experiential knowledge. In these instances, the interview was generally more direct because there was advance understanding by all parties of the purpose of the interview and thus “unproductive topics” could be avoided (Flick, 2006: 165). This approach permitted valid expansion or explanation of the informants’ perceptions and constructions of reality.

A semi-structured interview guide was piloted and then developed around the checklist of violent harms, acts, and incidents. Questions examined perspectives on rural masculinities, men’s violence, and related policy issues. All interviews were recorded using unobtrusive digital voice recorders. In addition, notes were taken of relevant incidents or particularly pertinent points. Thus, while the type of questioning and discussion allowed for an essential level of flexibility—given the broad range of participant backgrounds—the content of the interviews were focused on the issues that were central to the research topic. This method yielded a great deal of consistent information, which was subsequently coded and analyzed by theme. At the end of interviews,
participants completed a basic survey that allowed overall demographic characteristics to be assessed. All interviews were recorded with permission.

Briefly, each transcription was analyzed in turn for passages and/or content of a type that referenced issues, events, experiences, or opinions that might inform relevant research elements or potential policy responses. The interview data were coded and transcribed according to emerging themes (Spradley, 1979) until a “codebook” evolved (Miles and Huberman, 1994). Identification, selection, and coding of small segments of relevant material afforded three distinct advantages that have also been deemed important by others (for example, Cope, 2005; Miles and Huberman, 1994) for interpreting and communicating the results of qualitative research. First, our system facilitated additional familiarity and understanding of the data and thus, in itself, was an element of analysis. Second, the mass of data was reduced to a more manageable volume. Finally, arguably most importantly, the material was organized so that “patterns, commonalities, relationships, correspondences, and even disjunctions [could be] identified and brought out for scrutiny” (Cope, 2005: 226). This meant that we could readily identify and further examine a cluster of segments “relating to a particular research question, hypothesis, construct, or theme” (Miles and Huberman, 1994: 57). This evolutionary approach to codebook construction allowed us to focus on looking for meaningful conditions, interactions, and consequences and thus to discover themes rather than to assume a presence. Additionally, building of the codebook in this way minimized category overlap, thus strengthening, according to Cope (2005), the analytical potential of the coding structure. The codebook of themes and sub-codes are shown in Tables 1 and 2.

Table 1. Codebook of Analytic Codes or Themes.

<table>
<thead>
<tr>
<th></th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Violence</td>
<td>_Aspects of masculinity</td>
</tr>
<tr>
<td>2</td>
<td>Injuries</td>
<td>_Homosexual issues</td>
</tr>
<tr>
<td>3</td>
<td>Firearms</td>
<td>_Economic factors</td>
</tr>
<tr>
<td>4</td>
<td>Isolation/loneliness</td>
<td>_Societal factors</td>
</tr>
<tr>
<td>5</td>
<td>Remoteness</td>
<td>_Societal structures</td>
</tr>
<tr>
<td>6</td>
<td>Self-esteem and self-worth</td>
<td>_Animal abuse</td>
</tr>
<tr>
<td>7</td>
<td>Mental health issues</td>
<td>_Risk taking behavior</td>
</tr>
<tr>
<td>8</td>
<td>External issues</td>
<td>_Working conditions</td>
</tr>
<tr>
<td>9</td>
<td>(Lack of) coping mechanisms</td>
<td>_Living conditions/lifestyle</td>
</tr>
<tr>
<td>10</td>
<td>Ageing in place</td>
<td>_Cultural norms</td>
</tr>
<tr>
<td>11</td>
<td>Indigenous males</td>
<td>_Non-resident worker impact – personal</td>
</tr>
<tr>
<td>12</td>
<td>Younger males</td>
<td>_Non-resident worker impact – community</td>
</tr>
<tr>
<td>13</td>
<td>Single males</td>
<td>_Current policies and programs</td>
</tr>
<tr>
<td>14</td>
<td>Succession issues</td>
<td>_Current services, facilities, problems and issues</td>
</tr>
<tr>
<td>15</td>
<td>Communication issues – personal</td>
<td>_Suggested policies/programs</td>
</tr>
</tbody>
</table>

Given the sensitive nature of research on violence, gender, men’s health, and community safety and well-being in small rural villages and towns, protecting the anonymity of respondents was an overriding ethics requirement. The communities involved in the study were often characterized by limited, but visible, service provision, making it possible to identify individuals according to roles. Hence, pseudonyms have been used to refer to both the region and towns involved in the study. This article only draws upon the data collected under the subcode of “Alcohol- and drug-related violence” for three study locations that were mining communities. Other data has been excluded.
Table 2. Codebook for Analytic Sub-codes within the “Violence” Theme.

<table>
<thead>
<tr>
<th>No</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(a)</td>
<td>Out-of-town violence</td>
</tr>
<tr>
<td>1</td>
<td>(b)</td>
<td>Alcohol- and drug-related violence</td>
</tr>
<tr>
<td>1</td>
<td>(c)</td>
<td>Domestic violence perpetrator types</td>
</tr>
<tr>
<td>1</td>
<td>(d)</td>
<td>Domestic violence reporting characteristics</td>
</tr>
<tr>
<td>1</td>
<td>(e)</td>
<td>Male domestic violence victims</td>
</tr>
<tr>
<td>1</td>
<td>(f)</td>
<td>Indigenous domestic violence</td>
</tr>
<tr>
<td>1</td>
<td>(g)</td>
<td>Sexual assault</td>
</tr>
<tr>
<td>1</td>
<td>(h)</td>
<td>Stalking and harassment</td>
</tr>
<tr>
<td>1</td>
<td>(i)</td>
<td>Self-harm, including suicide</td>
</tr>
<tr>
<td>1</td>
<td>(j)</td>
<td>Emotional violence</td>
</tr>
<tr>
<td>1</td>
<td>(k)</td>
<td>Attitudes to domestic violence</td>
</tr>
<tr>
<td>1</td>
<td>(l)</td>
<td>Male-on-male violence</td>
</tr>
<tr>
<td>1</td>
<td>(m)</td>
<td>Homophobic violence</td>
</tr>
<tr>
<td>1</td>
<td>(n)</td>
<td>Bullying</td>
</tr>
<tr>
<td>1</td>
<td>(o)</td>
<td>Other forms of violence</td>
</tr>
</tbody>
</table>

Pembleton Boomtown: Main Study Location

Data for this article draws mainly from a study location we called Pembleton. As the interviews were undertaken in 2009 the most relevant census data comes from 2006. An examination of Australian Bureau of Statistics (ABS) census data comparing statistics for Pembleton and the rest of Australia highlights some of the characteristics of resource boomtowns (Table 3; see also ABS, 2008). Heavy reliance on a single industry employer is a key one. The importance of resource industries for local jobs in Pembleton is substantial, with the industry supplying 21 percent of all industry jobs by 2006 (Table 3). The proportion of persons employed in Pembleton’s resource industries increased by 45 percent since the 2001 census. Non-resident workers, if enumerated at all in the census, are recorded as visitors. They represented almost a quarter of the population (24%) on the 2006 Census night compared to 5 percent nationally (Table 3). Estimates of non-resident workers provided by the local government suggest they regularly comprise around 50 percent of the extant population.

In resource boomtowns, labor force participation rates are usually high, as exemplified by the 72 percent participation rate for Pembleton in the 2006 Census in comparison with 60 percent for Australia. Unemployment rates in 2006 (2.2% and 5.2%, respectively, for Pembleton and Australia) also reflected the robust nature of local industries and job opportunities. High rates of employment to population (70% for Pembleton; 57% Australia-wide) would be even higher if data for non-resident workers were included. These rates are also influenced by demographic characteristics skewed from the norm, including factors such as the comparatively low median age of 31 years for the Pembleton, six years lower than the national median age of 37 years (Table 3).

The tight labor situation for resource industry employers in remote areas has been accompanied by elevated incomes. For example, almost half (49%) the resident workforce in Pembleton stated that they earned at least $1,000 per week compared with a national total of 20 percent (Table 3).
The gap was more exaggerated for persons earning $2,000 or more per week with 16 percent and 4 percent, respectively, for Pembleton and Australia having stated incomes in this bracket.\(^2\) Not surprisingly, in Pembleton a greater proportion of males than females received high incomes compared with elsewhere in Australia.


<table>
<thead>
<tr>
<th>2006 Census Descriptor (unless otherwise stated)</th>
<th>Pembleton</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For persons more than 15 years of age:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Enumerated in mining industry</td>
<td>20.8%</td>
<td>1.9%</td>
</tr>
<tr>
<td>• Enumerated in mining industry Census 2001</td>
<td>14.9%</td>
<td>0.9%</td>
</tr>
<tr>
<td>• Enumerated increase in mining industry 2001–2006</td>
<td>44.6%</td>
<td>42.4%</td>
</tr>
<tr>
<td>• Labor force participation</td>
<td>72.0%</td>
<td>60.4%</td>
</tr>
<tr>
<td>• Unemployment</td>
<td>2.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>• Employment to population</td>
<td>70.4%</td>
<td>57.2%</td>
</tr>
<tr>
<td><strong>Income (when stated):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• $1,000 or more per week – total</td>
<td>48.5%</td>
<td>19.7%</td>
</tr>
<tr>
<td>• $1,000 or more per week – males</td>
<td>72.2%</td>
<td>27.7%</td>
</tr>
<tr>
<td>• $2,000 or more per week – total</td>
<td>15.6%</td>
<td>3.8%</td>
</tr>
<tr>
<td>• $2,000 or more per week – males</td>
<td>26.7%</td>
<td>6.2%</td>
</tr>
<tr>
<td>• Income not stated – total</td>
<td>17.0%</td>
<td>8.9%</td>
</tr>
<tr>
<td>• Income not stated – males</td>
<td>19.2%</td>
<td>9.4%</td>
</tr>
<tr>
<td><strong>Characteristics</strong></td>
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<td></td>
</tr>
<tr>
<td>• Visitors</td>
<td>76.4%</td>
<td>95.1%</td>
</tr>
<tr>
<td>• Males per 100 females - estimated resident population</td>
<td>121</td>
<td>99</td>
</tr>
</tbody>
</table>

| **For all persons:** |          |           |
| • Median age | 31       | 37        |
| • Lived at same address 1 year ago | 52.9%    | 78.3%     |
| • Lived at different address 1 year ago | 47.1%    | 21.7%     |
| • Lived at same address 5 years ago | 26.4%    | 57.7%     |
| • Lived at different address 5 years ago | 73.6%    | 42.3%     |
| • Population change 2001–2006 | 5.7%     | 4.7%      |


Partly because of the global resources boom and thirst for energy sources, many of the residents of resource towns are comparatively new arrivals. Census results show that, in 2006, many persons had moved to Pembleton within the previous five years. In fact, only about half (53%) had lived at the same address one year previously and only 27 percent at the time of the 2001 Census. Elsewhere in Australia, 79 percent of persons had lived at the same address for at least 12 months and 58 percent were resident at their 2006 Census night address for more than five years (Table 3).

\(^2\) As composite ABS data are presented for Pembleton, median income could not be stated with confidence. Instead, income differentials have been calculated for the proportion of the labor force identified in high-income brackets.
Greater proportions of young women leave these towns than young men. Their departure serves to further entrench a rough hyper-masculine culture “and many of its negative, perhaps destructive, features such as heavy drinking and violence” (Barclay, Hogg, and Scott, 2007: 101). The nature of employment in mining traditionally has had a strong male bias. ABS 2006 census point-in-time data indicated six men for every five women. In reality, though, it was more imbalanced than this because most non-resident workers are not counted in the census, and they are mostly male. During peak shutdown and construction periods, the imbalance becomes more amplified, further influencing the often expressed view that Pemberton is a “very blokey place.” This peculiar sociodemographic feature also impacts significantly on the local hierarchy of status among men, a theme discussed at length in the discussion that follows.

**Discussion and Analysis**

**“Have a Taste of Dust and Sweat, Mate”**

Out in the back country and you’ve got to put up with all the heat, flies, dust...If the people in the city got off their arses and lived out in the country for about a week in this town, for instance, it would be good because we’ve got no water here, we’ve got no facilities here…And you wonder why people want to shoot themselves; you wonder why people commit suicide and all that and leave their wives because there’s nothing out here for them. (P67, male, publican, QLD)

Early Australian research on the social impacts of mining focused on purpose-built mining towns, which companies believed necessary to attract workers and minimize industrial disputes. A problem with such towns was that they lacked critical mass of population to provide comprehensive human services, attract secondary investment, or create a balanced sociodemographic structure. During the 1980s, quality of life issues saw movement away from attempts to resource inadequate infrastructure in these towns and the growing resort to FIFO and drive-in and drive-out workforces (Lockie et al., 2009). It was economically attractive for resource companies to shift their modus operandi in remote locations to commute operations relying on a non-resident workforce rather than constructing permanent communities that required maintenance and ongoing capital overheads (Storey, 2001: 135).

It is estimated that approximately 350,000 workers were employed in mining and allied industries at the height of the Australian mining boom in 2012. Of these, approximately two-thirds were non-resident workers (NRWs) (Carrington and McIntosh, 2013). Although NRW numbers for a single mine site may appear relatively small, cumulative totals for a region can amount to tens of thousands and represent large proportions of total local populations. NRWs comprised approximately 50 percent of the population in the three mining communities where we conducted field research.

The use of NRW involves the periodic absence of workers from their places of permanent residence and the structuring of operations around compressed work schedules typically of several days’/nights’ duration followed by a period of layoff (Lockie et al., 2009). Twelve-hour shifts rotating between night and day have become the norm, although roster structures vary greatly. Two weeks of work followed by one week of leave applies for many operations; for construction,
four-week work cycles are typical. These work patterns seriously impact upon the lives of workers, their families, the communities in which they reside, and the communities in which they travel often vast distances to work (Carrington and McIntosh, 2013; Carrington and Pereira, 2011).

The literature suggests that NRW operations, especially the long hours of shift work, impose physical and psychological strains on workers, which place them and others at risk, both inside and outside work. Research has found miners and their partners suffered higher rates of psychological stress than other rural people due to social isolation from family, boredom, climate, sexual needs, fractured community life, and alcohol abuse (Lockie et al., 2009). While some NRWs prosper, others find “the FIFO lifestyle” unacceptably stressful and tough on health and well-being. Indeed, the industry has acknowledged that around 60 to 70 percent of relationships fail. For those away from home for the first time, especially for single young men, these experiences could be affirming. Alternatively, they may be drawn into a culture of heavy drinking and rituals of pub brawling as a way of negotiating identity and status in local masculine hierarchies (Carrington et al., 2011). Mining camps are highly gendered places. In a space where diverse groups of men are forced to cohabitate, masculinity is a vital resource to provide stability and order to social environments.

Work patterns affect individual NRWs but also have wider communal impacts. The regime has been linked to declines in social capital. As a male ambulance driver from Queensland stated:

Twelve hours on [shift work], you need eight or nine hours’ sleep. That only gives you only three or four hours to up and have a life. So some guys you don’t see at all. You know, I’ve been here 17 years; there are still ladies in town I know to talk to but I’ve no idea who their husband is because you very rarely see them out together. Amazing…The odd time you might see them at the pub: Shit, is that who you’re married to…The parents aren’t there to support the schools; as I said, all the clubs are suffering. (P70)

The residents of our study towns knew their communities did not approximate the stereotype of the rural idyll. Many participants instead painted bleak and harsh pictures of local life. These places were not experienced as communities because many people lacked a sense of “belonging.” A male police sergeant based in a Queensland mining region observed:

It’s a town full of itinerants, so it hasn’t got that country feel about it, even though we’re in the country. Some people would argue this is not really a country town because it doesn’t have that feel about it. The people that are here in town, they don’t live in town; they don’t call town “home;” they don’t play for the local football team; they were not born here and they’re not going to die here, like the smaller country towns. (P83)

The high turnover rate for NRWs (30 to 60 percent), much higher than that of other workers, also makes a sense of belonging within the workplace and community difficult to achieve (Kinetic Group, 2012; NRSET, 2010; Ranford, 2011). The remarks of one participant, a magistrate, summed up this phenomenon:

This community is so unstable; it’s so young. People come here for short periods of time; they earn truckloads of money; and then disappear. And it’s kinda, like, “on a vacation”
mentality and it doesn’t matter because this is not my real life, my real life is down in Perth; my real life is back in Melbourne; my real life is over there. So what I do here doesn’t really count. (P22, male, magistrate, Pembleton)

Again, masculinity presented as a resource to promote a certain order, both within camps and within the wider community. The links between young men and crime generally and violent crime in particular are well known in criminology. Masculinity and youth are cited by John Braithwaite as two primary “facts” that a theory of crime must account for (Braithwaite, 1989). It has been argued in criminology that women’s lesser participation in crime is, in part, because they are more sensitive to informal controls whilst men are more likely to respond (if at all) to formalized expressions of social control (Hagan et al., 1979). This noted, the capacity for informal social control is an important feature of “rural” places. What is notable in the regions we visited was that a weakening of social capital was expressed in terms of violence. This, however, was mediated in and by the specific environments, practices, and rituals that brought men together in both bonding and divisive relationships.

**Have another drink, mate?**

Does the Pilbara change men? Think it would change anyone. Isolation, work environment, long working hours, huge drinking and drug culture, would be things that many might not be used to. [Men] feel a huge responsibility [pressure?] to be part of, one of the blokes and to go to the pub and drink and they’re encouraged to drink more and more even if they’re not big drinkers, even if they don’t enjoy it. (P28b, female, counselor, WA)

Research into rural and regional drug and alcohol consumption has generally been lacking in Australia (Bull, 2007; Dunn, 1998), because it is generally assumed that such consumption is greater among people living in major cities as compared to regional areas. Epidemiological research, however, suggests that alcohol and tobacco use are more prevalent outside major cities, especially among men, and harmful or hazardous levels of alcohol consumption are widespread (AIHW, 2014).

Serious concerns about health issues for workers, especially NRWs, in addition to those specific to the workplace per se, have been identified for the mining industry. The House of Representatives Standing Committee on Regional Australia report on the impacts of NRW arrangements on regional communities noted, “Perhaps the most common concern about the well-being of FIFO workers raised in the inquiry was the excessive use of alcohol and, increasingly, other substances” (Commonwealth of Australia, 2013: 97).

Males are more likely to drink than females at risky levels across all occupations. Most at risk to the adverse effects of excessive or binge drinking are isolated male industrial workers, working long hours and in irregular patterns. Mining regions pre-boom were indicating higher rates of alcohol consumption when compared to national averages and consumption remained high during the period of the boom (Carrington and McIntosh, 2013; Gilmore et al., 2015; Goater et al., 2012).

Our research confirmed that alcohol consumption was a prominent feature of social life in mining areas. To a lesser extent, drugs also contributed to local social problems, with amphetamines seen as a particular problem, although patterns and effects of harder drug use are under-researched and
harder to detect (see later discussion). Heavy alcohol consumption may have predated the boom in these regions, but binge drinking cultures and nightclubbing were products of the boom, driven by large incomes, huge influxes of young men, stresses associated with work patterns, the paucity of leisure options and the absence of local community and family ties. One female respondent explains how the culture is shaped by alcohol use:

Really, pretty much what we have is a pub, a memorial club, an RSL and a bowls club and they’re pretty much what there is to do in [this town]…Like, there’s the river and there’s the barbecue and skiing. There’s always alcohol involved in that too. Everything there is alcohol. (P20c, female, mine industry worker, QLD)

In addition to alcohol use, the wealth generated by the mining boom also produced “winners” who were cashed-up and who could afford to engage in certain leisure activities, like deep-sea fishing in some locations, which required investment in private infrastructure such as boats. Here the issue was not so much lack of diversions, but rather a narrow range of monologic, male-centered leisure activities that had come to dominate social life in the community.

In such sociocultural circumstances, monologic expressions of masculinity elevate the risk of higher rates of binge drinking, drug taking, injury, and violence. A female service provider from Pembleton described succinctly how monologic masculinities are performed in mining towns: “I think it’s a masculinity-macho thing here. There are a lot of things for men to do…They go fishing or go play soccer or cricket…They always get together…After work, you have to go to the pub and have a drink” (P21b). These practices clearly exacerbated gender divisions within communities and reinforced male camaraderie among some groups of men, which again was a key characteristic of monologic masculinity. Her colleague added, “It’s definitely a very male orientated place, you know; the fishing, the drinking…I think [this local culture] really pulls them in; it’s attractive to them” (P21a).

Pembleton had 26 licensed liquor outlets at the time we conducted our fieldwork. On one level, the highly visible drinking culture of mining communities inhibited the development of community life and with it, social capital. A prominent male service provider in one Pembleton community observed, “Even for those people that live here, a lot of activity revolves around alcohol…It’s just the way things are…The attitudes they have are not reflected in the rest of Australia. The family here is not the main focus” (P19). At the same time, pubs were often the center of social life in these towns, being characterized as a source of social capital. A male councilor from Queensland stated: In all these little country towns, pubs do more for the area than people think. They raise all the money for their schools; there’s always raffles and stuff at the pubs, you know… Friday nights or Sunday nights here, we always have raffles all the time, you know…The school, the bowls club, the multi-purpose centre; here it’s for the water supply at times, sometimes for the little churches (P79). What is perhaps telling here is that the established rural order in many Australian towns, be they mining or agricultural, is highly masculinized. In this way, the structures that are considered to promote communal life and produce social capital are also highly gendered structures and institutions. Mining booms that rely heavily on non-resident male labor exacerbate the masculinized structure of these towns.

Dunn (1998) argues that higher levels of alcohol consumption in rural Australia compared to other
parts of the country are linked to masculine and often culturally dominant social norms such as “self-reliance,” “hardiness,” and “mateship,” which we have described here as monologic masculinities. Social life is also enmeshed with drinking opportunities where licensed venues are frequently the focus of social interaction—they often provide the main source of social capital in the form of support for sporting, community, and leisure activities (Reilly and Griffiths, 1998). The rural pub is a highly mythologized site, especially in some Anglo cultures, and informs one characterization of what has been referred to as the rural idyll (Campbell, 2000). The persistence of masculinized rural cultures owes much to the pub as a site of male power and legitimacy within rural social order. Pubs are a key site where monologic masculinities are articulated, performed, and policed. This is exacerbated in mining towns where the only activity outside work for the influx of FIFOs is to “work hard and play hard” (P21, male, councilor, QLD).

Public drinking venues are also high risk for male, alcohol-related aggression. We know that in general alcohol is involved in approximately half the incidents of violent crime and is a well-established contributing cause of personal aggression (Pernanan and Heath, 1991; Miller et al., 2014). “The barroom provides an environment in which masculinity and power displays are paramount and where young men compete for potential sexual partners and approval of peers” (Miller et al., 2014). Masculinity can provide a sense of structure and hierarchy in otherwise unstructured environments. Williams (1999) compared the experience of alcohol-related social disorder between young people in rural and metropolitan areas and identified the pub in particular as a culturally condoned venue for alcohol-related violence in the former. Alcohol abuse damages social relationships in these communities, producing individual and social harms. As one male service provider based in Pemberton remarked, “Once people arrive in the area and embrace the drinking culture, they go down very quickly. It causes marriage break ups, leads to depression, suicide” (P19).

The main site of violence, other than the pub, was the home—particularly for gendered violence. While NRWs, mostly single men, could not readily be blamed for domestic violence in the regions we visited, there was acknowledgment that it placed significant strains on relationships outside the region, where NRWs lived:

These blokes fly in, might be two weeks, three weeks, four weeks; they do these long shifts; they go home, they’re exhausted, their wife’s thinking: “Where the hell are you, you’ve been away all this time, the kids are going mad?”; and they argue. And it’s just awful and then they go off; and before you know it, that relationship’s finished. And then these girls up here get the brunt of it… You can’t make the mining companies understand… They don’t want to know it. (P22, female, councilor, Pemberton)

Even attempts to control binge drinking only exacerbated the problem. A Pemberton mayor told us, “The random drug and alcohol testing at work means that men can’t go to work drunk—so they drink less during the week but make up for it during their time off—more binge drinking and drug taking” (P43, male, Pemberton). An influx of NRWs means that many shared spaces became even more highly masculinized places, by virtue of weight of numbers of men apart from anything else. As a group, NRWs exaggerate male dominance and have little or no attachment to workplace communities. They are transients.
They are not regulated by the informal social controls that traditionally characterize rural communities. This is not to suggest, however, that this group, or even the broader communities in which they work, are in any simple sense anomic. Indeed, a strong normative order existed in these communities that drew heavily on gendered norms. While most men aspired to approximate expectations of monologic masculinity, there was little evidence of a homogenous male culture existing in mining communities. Rather, as elsewhere, men were differentiated into hierarchies of status that created tension and conflict. Notable was the tension that existed between resident and non-resident men, which sometimes led to pub brawling and rivalry for women who were typically viewed as objects of masculine status (Carrington et al., 2011).

**Have another fight, mate?**

I think there’s been this split of the town…There’s fly-in fly-out [FIFO] and I’ve heard people say: “Fit-in or fuck-off” and that’s a view that I’ve heard from people that stay in the community. So they might sense that all these FIFO workers are creating all the problems for the community and creating all these problems for them and they’ll be drinking at the pub and someone got beaten to death.(R25, female, counselor, WA)

NRWs were generally blamed by residents for widespread social disorder, ranging from littering to murder and other extreme acts of violence. Concern about NRWs was heightened by the greater workforce turnover rate for NRWs, which was up to double that of resident employees. Hence, their existence gives rise to suspicion and widespread concern (McIntosh, 2012; NRSET, 2010; Kinetic Group, 2012, Scott et al., 2011). In most boomtowns, the setting was ripe for the fostering of social divisions and tensions between NRWs and resident locals (Scott et al., 2011). In such contexts, the deviance of NRWs can be exaggerated because they are already regarded by locals as suspect. This only serves to widen the “us vs. them” chasm between insiders and outsiders and further undermines the sense of well-being of both (Carrington et al., 2011).

The fly-over effects of the boom, in which most of the wealth generated locally goes elsewhere to the detriment of the local economy and community, is widely resented in many mining areas, like the Pilbara in Western Australia (Houghton, 1993: 297; Pick et al., 2008; Storey, 2001: 135). While towns suffer from lack of infrastructure, some mining camps are replete with recreational facilities, including gyms, pools, squash and tennis courts (Loopers, 2012). One reason why little money is spent in the region is that the camps are largely self-sufficient and data from one region we visited indicated that 78 percent of salaries earned left the region. Speaking about FIFO, a councilor remarked that “They don’t leave anything in the community. They don’t have to go down the shops to buy food or anything like that; everything comes in” (P37). Overall, regions with a more diverse industry and development base are more likely to retain economic gains produced by mining booms (NSRET, 2010).

The boom may benefit some locals, but it has also resulted in acute housing shortages and severe reductions in housing affordability for many others not employed in the industry. Towns also often have to bear the burdens of rapid, quite massive relative increases in local population due to the NRW presence and consequent additional demands on their local infrastructure and human services (health, education, roads, rubbish collection, and so on), all of which are funded according to permanent resident population levels. It is not difficult to detect in these conditions the potential sources of deep resentment, tension, and demonizing. The spatial dimensions of such tensions are
obvious. Social disorder, in particular, violence, was strongly associated with the ecological changes driven by the mining boom. In particular, participants highlighted the influx of large numbers of non-resident workers into regions and the social impacts of this on community life.

Perceptions of high crime in mining boomtowns is not restricted to Australian contexts and are just as relevant in Canada and North America (Ruddell et al., 2014). Often exaggerated media reportage has been quick to blame NRWs for social disruption, especially violence, with media reports being sourced to the “usual residents” (Gilmore et al., 2015). There is, however, no doubt that the altered conditions of the boomtown create “winners and losers,” especially to the extent that the status of longer-term residents is threatened. The existing masculine order in particular is challenged and violence can become a resource to symbolically and materially reassert or challenge territorial and normative boundaries. In our research sites, violent male-on-male assaults fueled by excessive alcohol consumption became regarded as normal given the dynamics between locals and NRWs (Carrington et al., 2011). Male violence was a way of enforcing boundaries between men, exercising power, asserting honor, and re-establishing status and power in the face of sweeping historical destabilizations to the traditional mining communities by hiring in outside labor (Hogg and Carrington, 2006). Violence is not the only articulation of monologic masculinity, but in mining towns male-on-male alcohol-fuelled violence was certainly chief among them (Carrington et al., 2011). What renders violence strategically significant in mining towns is the way in which narratives of the rurality are grounded in monologic expressions of physicality.

In attempting to explain the relationship between masculinity and violence, Messerschmidt (1993) has argued that masculinity is performed as structured action. That is, it is expressed under constraints of biology, class, ethnicity, sexuality, and gender. As such, crimes can be considered “resources” for accomplishing masculinity when other forms of expression are limited. For example, men experiencing powerlessness in the labor market may choose violence as a means to express what they perceive to be an “authentic” and legitimized form of masculinity. Violence may also be a means of momentarily reversing structural subordinations of masculinity. A practice that proves the reserves of strength in a male person when a weaker, despised object is dehumanized and victimized can be interpreted as one of the outcomes of masculinity under pressure. However, where masculinities are contested and become threatened, this heightened insecurity may lead to higher levels of violence against others. Male violence in this context is a form of compensation for losing power (Hautzinger, 2003: 93). It is a reaction to loss of patriarchal control, rather than an assertion of it, and can be a response to the destabilization of gendered power structures. We do not use the term *hegemonic masculinity* to describe the monologic performances of masculinity in mining towns, as in many respects miners are a threatened group of men being replaced by automation and non-resident workforces. They have either lost their hegemony or it has become a more fragile.

Longer-term residents considered that pubs had become more dangerous places during the mining boom. Large increases in numbers of men in public spaces had an effect of (further) masculinizing such spaces. Heavy episodic drinking, trait aggression, masculinity, and concerns about social honor are all strongly associated with male alcohol-related aggression (Miller et al., 2014). A domestic violence support worker from Pembleton describes her experience of this kind of male aggression:

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Women’s social outlet? Stay home; only go out in the daytime. Don’t go out at night, not even with my husband. We went out with my husband and we nearly got into a fight because there were a group of men and they were getting quite rude and we had to leave and that used to be a family hotel…It’s changed so much; just not a nice place to take your kids…The more money, they can drink more; and the drugs. (P21b, female, Pembleton)

A male police officer from the same mining boomtown similarly observed,

There’s a lot of alcohol-fuelled violence up here…When they have their days off and they’re earning a lot of money—a lot of them are quite young fellas—there’s nothing really to do with that money. Lot of it goes into the pubs and the overflow of that is that you get your violence at the end of the day. They box on at the clubs that we get called to or there are people who take advantage of the fact that people are so inebriated and give them a bit of one-two; which a lot of that is unreported. (P20a, Pembleton)

There are stark demographic asymmetries in boomtowns, with the 25 to 35 age group predominant and a stark gender imbalance, with men far outnumbering women (Petkova-Timmer et al., 2009: 212). On the other hand, violence in mining communities cannot be reduced in any simple way to the mere presence of NRWs, as is often alleged by local residents, as a female lawyer pointed out: “There are some FIFO workers that, you know, perhaps really sort of play up once they get here away from the normal responsibilities of family and sort of city life and so indulge a little bit and so there are a few of them that give everybody else a bad name. They’re always being accused of littering and causing problems and anti-social behavior. So I think definitely it’s a good scapegoat” (P29, female, lawyer, Pembleton).

One study in a Queensland coal mining region (Lockie et al., 2009) found that lack of social integration in the region affected perceptions of crime among residents; residents had a sense that they were at greater risk of crime due to the influx of large numbers of unknown and temporary residents. Recorded crimes against the person (especially sexual assault) in the region and the surrounding shire in the Bowen Basin, a site of significant new mining activity, increased significantly, while overall crime rates remained relatively low (Lockie et al., 2009: 336).

A recent study of alcohol consumption and violent crime in Western Australia also found that although alcohol sales, licensed outlets, and the relative size of the permanent resident population appeared related to assault levels, the presence of significant mining activity was mainly a major risk factor for women (Gilmore et al., 2015). As domestic assaults involved a partner or other family member, it was more likely such assaults were among longer-term residents, rather than NRWs (Gilmore et al., 2015). However, it is clear that the mining boom and workplace patterns and cultures produced significant tensions between outsider and established men, which were frequently “resolved” through violence. As Winlow and Hall (2006: 1) have argued, alcohol-related violence and disorder is associated with significant ecological change. In such instances, alcohol-related violence can be considered an attempt by groups to “make sense of their place” amidst economic upheaval and restructuring and what might be considered the anomic impacts of supercapitalism on work patterns and community structure.

There’s nothing else out here
In terms of dealing with the individual health and wider social impacts of alcohol and violence, it is widely recognized that men are more reluctant than women to access health and welfare
assistance (AIHW, 2010). This is more the case with men residing in rural areas, where hegemonic norms have proven to be more resilient. As one participant explained, “They’re isolated in distance, they’re isolated emotionally. There’s also this pre-existing idea that men should deal with things alone and men don’t talk about things and hiding problems” (P22, male, WA). Heightened masculinity, therefore, also impacts on the ability to address the individual and social harms of mining. Further, men working long shifts and in isolated camps do not have easy access to local health care. Apparently, NRWs caught up in “a culture of binge-drinking and substance abuse” could not necessarily access continued treatment due to their variable work-leave roster arrangements (Commonwealth of Australia, 2013: 97). Masculinity, which presents as a resource to resolve tensions, only exacerbates the inability to deal effectively with alcohol and drug dependency problems.

Many smaller communities lack resources or expertise to manage rapid social change (Morrison et al., 2012) and the impacts of population instability (Ruddell, 2011), which is also associated with a reduced capacity to respond effectively to problems such as those associated with alcohol and drugs. One- or two-doctor towns, with limited health services (especially specialist services) and operating hours mean there are fewer options for treatment and support. The sole two doctors practicing in Moranbah, a mining town in Queensland, highlighted some of the implications in their submission to the Commonwealth Inquiry into FIFO practices: “The doctor–patient ratio is estimated to be around 1: 2,750—an unsustainable and unsafe level for doctors and patients alike. This shortage is further exacerbated by the effects of the resources boom and the influx of population into the area…Too often Industry comforts themselves with the delusion that a non-resident workforce has no impact on the town’s soft infrastructure such as medical services, police, ambulance and other emergency services” (Scholtz and Nieuwoudt, 2011: 2).

Health workers also have less access to support and training. People from remote communities who need assistance travel considerable distances to access alcohol, drug, and other health services, and as a result find it difficult to acquire continuity of care. Disjointed treatment is linked to less successful outcomes. At a more fundamental level, services are usually provided through local public hospitals and community health services, and people in rural and regional areas are often reluctant to disclose problems with alcohol and other drug use or to attend specialized treatment facilities because of a perceived lack of confidentiality and fear of stigmatization. Again, monologic masculinities may present as barriers to accessing treatment, as they inhibit the expression of pain, suffering, or vulnerability.

Boomtown dynamics also exacerbate these problems in the way that they affect patterns of informal control and caring in mining communities. What is often not described in the literature is the extent to which women are responsible for informal social control (Braithwaite, 1989: 92–95). This gendered role is amplified in small remote communities with truncated bureaucratic and market provision of services. However, it is disrupted where long distance communities have emerged in place of, or alongside conventional, hierarchically structured and gendered towns, in mining regions, a development that is insufficiently appreciated by governments and mining companies (Lahiri-Dutt, 2012).

Mining and contract companies might be expected to fill the vacuum. Thus, workplace testing regimes aimed at detecting use of alcohol or drugs and thereby assisting with health and safety

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issues on site can act as a deterrent. However, some workplaces have more effective controls than others. Although some mine sites have zero tolerance for drugs and alcohol, insufficient random or blanket testing allows many to gamble on escaping detection (Carrington and McIntosh, 2013). The problems with existing drug testing regimes were attested to by one resource sector employee who was actively involved in the testing procedures, who commented that “the big major companies do drug tests all the time...drug testing and breathalysing. Sometimes you get people and sometimes you don’t...It’s a random selection.” Despite workplace testing, drinking in the workplace continued to be an issue as workers find ways to circumvent checks. According to one of the local ambulance officers we interviewed,

the [drug testing] system has helped to clean a lot of [the practice of drinking two or three stubbies on the way to work] but you still hear stories about people going to work in their silk pajamas because they’re going to go to sleep. 12-hour night shifts; you probably only get two hours out of them...Just park [machinery] off somewhere and nobody complains. Most people are happier for them to park it off out of the road.

Key informants even blamed increasing levels and risks of substance abuse on the drug-testing practices used by mining companies. They claimed it has led to workers switching from cannabis, which can be detected in the blood for several days after use, to “harder” drugs (such as methamphetamines) that allegedly flush out of the human body within 24 hours. Consequently, drug testing by major companies, although designed with good intent, may have increased binge drinking and illicit use of hard drugs by workers during rostered days off. Many thought these usage patterns created stronger negative multiplier impacts within the wider community.

Conclusion

As seen above, tensions emerge in mining regions between established and outsider male groups, which are expressed as conflicts over control of resources, notions of belonging, and various status indicators. Monologic expressions of masculinity may symbolically compensate for this sense of loss, disruption, and disorder. The destabilization of mining towns that occurs through company practices of importing non-resident workers represents a grave threat to traditional rural masculinities. Performing acts that exaggerate male physicality and brute strength, such as brawling, is one strategy available to defend men’s positioning in traditional fields of masculinity under threat. The jockeying among men for a desirable status in the local hierarchy of masculinity finds expression in harmful activities that compromise the safety of the men themselves, others, and their communities. As such, monologic expressions of hypermasculinity do not necessarily reward those who enact it and may give rise to a number of costs, such as injury and violent victimization. Given the links between violence and alcohol, any response must not rely on crime metrics alone but include health-related measures to address the issue of excessive alcohol use and its impacts on the wider community. Closer attention also needs to be directed to the provision of resources and services for women experiencing domestic violence in mining communities as a result of normalization of gendered violence in these frontier settings.
While cinema is played for entertainment, and for this reason stylizes and exaggerates, memorable art often draws on its capacity to provoke or disturb by inverting familiar objects and everyday relations. The Yabba is a disturbing space because it draws on abjection (Kristeva, 1982), especially in its transformation of the familiar and cherished into that which is grotesque and exaggerated. While a brutalizing Australian landscape was certainly a crucial element in the horror of *Wake in Fright*, it is the film’s depiction of masculinity as degraded, mostly intoxicated, and violent that drives the narrative. Yet what is truly frightening is the realization that such expressions of masculinity are everyday, unexceptional, and culturally embedded. And as much as *Wake in Fright* shocked Australian audiences with its depiction of a brutalized Australian culture, when we have presented our research, linking the mining boom to changing patterns and understandings of violence, it has not only been mining companies that have responded with a “That’s not us!” refrain.

**Acknowledgements**

This research was carried out with the support of ARC Discovery Project 2008–2011 DP0878476.

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The Boom’s Echo: Learning How to Mitigate Boomtown Effects

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Introduction

Recently, there has been considerable scholarly interest in the impact of rapid population increases and industrialization in rural communities affected by the exploration and extraction of natural resources. The five articles in this issue extend our understanding of crime, fear of crime, and the formal and informal responses to those problems in boom communities in Australia, Canada, and the United States. Boom cycles are important given the social and crime-related problems associated with the expansion and, sometimes, the busts that may occur (Brown, Bankston, Forsyth, and Berthelot, 2011). Cycles of expansion and contraction disproportionately impact rural communities with little to no experience in managing the effects of dramatic population change, and once the boom ends, these communities are left to pick up the pieces. In the meantime, they must deal with the challenges that a boom presents, and the hope is that scholarship such as the articles written for this special issue of the Internet Journal of Criminology will enhance our knowledge of these booms, which in turn will add to the development of an inventory of best practices so that local community leaders can better prepare for potential booms.

Looking forward, we identify a number of areas that could benefit from additional scholarly work: (a) responding to gaps in the boomtown research literature; (b) extending theoretical development; and (c) developing an inventory of best practices to reduce the harms of boomtown effects. Although most of the examples provided below are from North America, many of these issues are generalizable to other nations where booms and busts, particularly those related to natural resources, are also occurring.

Gaps in Boomtown Research

Research on the following topics would add to our understanding of the boom-crime relationship and how different human service and law enforcement agencies respond to related challenges. These topics can be grouped under several broad categories: impacts for long-term residents; strain on law enforcement agencies; social service agency needs; and theoretical development in boom-cycle dynamics. First and foremost, booms impact the people who already live in towns, as well as those who arrive to take economic advantage of the boom. Booms place significant strain on what are generally small law enforcement agencies, and this raises issues about the nature and quality of policing as officers are “spread thin” after booms occur (Ruddell, 2011). Additionally, other local services, both within and apart from the criminal justice system, face challenges related to booms (Weber, Geigle, and Barkdull, 2014). Existing political science and criminological theories explain some boom-cycle dynamics but fail to sufficiently explain others, suggesting a need for deeper theory development in the area.

Booms and Residents
While the scholarly debate is far from settled, popular wisdom often blames newcomers for increases in crime and other social ills (Filteau, 2015). Boomtowns present a unique opportunity to learn more about this phenomenon, as few scholars acknowledge the contribution of long-term community residents to crime. Research in this area may significantly elucidate the contribution of different parties in a jurisdiction to overall crime, including the rates and specific types of crime particular to different groups. Are long-term residents simply victims of rowdy newcomers, as some hypothesize, or do the established residents also engage in criminal behavior? One unanswered question is whether law enforcement officers are more likely to overlook the criminal activity of a “townie” versus a newcomer, or crimes committed by a newcomer of higher status. Although they are different from the old-timers, once established in the community, some newcomers—primarily the professional or white-collar classes—are more likely to become a part of the local society, but the blue-collar workers doing the “dirty work” are less likely to make that transition (Lawrie, Tonts, and Plummer, 2011).

Juveniles also contribute to crime rates, and although Wilkinson and Camasso found an association between increases in juvenile crime and population growth in 1970s Utah boomtowns (as cited in Freudenburg and Jones, 1991), the issue of juvenile crime in boomtowns has generally been neglected by contemporary researchers. Juveniles typically contribute to the overall crime rate of a jurisdiction, and there is nothing to suggest that boomtowns should be any different. The limited work on juveniles in boomtowns has focused primarily on the impacts of class, race, and gender on juvenile development (O’Connor, 2015), and the career choices of young people (O’Connor, 2014). However, researchers have not focused on the impact that juveniles have on overall crime in contemporary boomtowns. Do youth in boomtowns commit crime at similar rates to juveniles in other regions? Do booms increase the number of juveniles in proportion to older residents who are less likely to engage in crime? Does the Wild West atmosphere of a boomtown, especially with the high salaries and proliferation of illegal drugs, provide additional license for juveniles to engage in delinquent behavior? At the start of the latest oil boom, for example, it was said that it was “easier to buy cocaine than a pizza” in a large Canadian boomtown (Edmonton Journal, 2007).

Domestic and intimate partner violence are certainly not unique to boomtowns, but the high prevalence of younger adult males might also contribute to higher rates of sexual assault and violence (Ennis and Finlayson, 2015; Shilton, 2015). Victims might be further disadvantaged as services are limited in boom communities and many female newcomers are socially isolated with few supports (Jayasundara, Heitkamp, and Ruddell, this issue). Furthermore, the risks of sexual violence may be higher, as Berger and Beckmann (2010) found that the number of registered sex offenders in energy boom counties grew at a faster rate than in counties experiencing booms due to agriculture or tourism. Questions in this area could center on victimization rates, services available to victims, and the experiences of Indigenous women, in comparison to their non-Indigenous counterparts.

Boomtowns create opportunities for organized criminal activity, allowing gangs to claim turf and stake a claim to the provision of illegal goods and services. Evidence suggests that there are rapid increases in narcotics use, gambling, and prostitution during a boom cycle (Archbold, 2015; Washington Post, 2014), social problems not unlike those experienced during the 1849 California gold rush or the Klondike gold rush that occurred between 1896 and 1899 (Morrison, 1974). These illicit goods and activities today, however, are often organized and supplied by criminal
organizations or gangs. The state of Montana recognized the problems associated with human trafficking by passing tougher legislation in 2013, but the efficacy of those new laws has not been examined. Other pertinent questions remain regarding the extent to which boombown law enforcement, which traditionally does not have much contact with criminal gangs in rural areas, learn to identify, investigate, and eliminate gang or organized crime activity in their jurisdictions. Moreover, less is known about how gangs operate their criminal enterprises in predominately rural areas as compared to the relatively large body of research on urban gangs.

Another important question is how booms impact those with the greatest claim to the land. Not everyone is happy to see boom cycles begin, especially when they involve natural resources extraction, as they frequently lower the quality of life for long-term residents (Opsal and O’Connor Shelley, 2014). Indigenous peoples frequently oppose both the extraction of natural resources as well as the rapid growth associated with booms (O’Brien and Hipel, 2016). In terms of criminal behavior, Shilton (2015) reports that American Indians are victimized at higher rates on North Dakota tribal lands, but it is unclear whether this phenomenon is consistent across other jurisdictions. Furthermore, are these Indigenous environmental activists ever victimized when they express opposition to growth (Dearden, 2015)? And, if they do protest, are their rights to peaceful assembly and protest protected by law enforcement?

**Law Enforcement and Crime**
The group most impacted by the rapid growth and economic expansion, second to the residents, both new and longstanding, is typically law enforcement. The flood of new residents, combined with an influx of disposable income, can create myriad issues for the police (Archbold et al., this issue, Archbold, Dahle, and Jordan, 2015; Dahle and Archbold, 2015). More than anything, “sleepy” rural departments with low staffing levels are not be accustomed to a rapid and sustained increase in calls for service and crime activity. Given those increases, how do police departments adjust their operations during a boom cycle, and how do local governments contribute to such operational adjustments through budget allocations for public safety? The assumption is that booms generate revenue for local governments by way of increasing the population paying sales and property taxes, but testing this assumption is a critical first step in understanding how local law enforcement can respond to the impact of a boom of public safety. Furthermore, are law enforcement agencies with a service-oriented tradition able to make the adjustment to a more enforcement-oriented approach?

Beyond a general shift in orientation, the resulting increase in overall police activity can create a strain on law enforcement officers (MND Report, 2012). As a result, would examinations of workload, including the volume of paperwork or agreements with neighboring departments, shed light onto the dynamics at work in these police departments? Are these departments experiencing higher rates of absenteeism, early retirements, or transfers to less hectic agencies, or losing staff members to more lucrative careers in the oilfields? And are these police departments and sheriff’s offices providing any additional incentives for employees (beyond overtime), including benefits such as employer-supplied housing, or additional supportive, mental health, or counseling services?

Increases in the frequency and severity of crime make officer discretion critically important in boomtowns. How do police officers choose whom to arrest, as compared to the pre-boom? There
is some evidence to suggest that the threshold for arrest drops after booms occur (Archbold, Dahle, and Jordan, 2015). As a result, will ignoring smaller crimes and incivilities lead to more serious crimes by undeterred criminals, as the “broken windows” theory proposes? Furthermore, who sets the criteria for police priorities and arrest thresholds in the boomtown? Last, in the absence of the police, does private policing play a greater role in the oil patch?

Increases in police activity, and questions about police activity, raise another important area of inquiry: the nature of the crime itself. Media portrayals of boomtowns frequently highlight the Wild West image, providing sensationalized accounts of lawlessness and a criminal free-for-all (see Rucke, 2014; Upton, 2016). Although these anecdotal accounts make for excellent copy, the question remains as to whether they provide an accurate picture of boomtowns. Many of the media accounts center on crimes such as drunkenness, narcotics use, prostitution, impaired driving, and simple assaults, but do not typically describe more serious and violent crime. This raises the question of how accurately media accounts depict criminal activities in boomtowns, and what the consequences are to the public of inaccurate accounts that may inflame public fear.

The most common counter to simple media reporting is through the use of official statistics. For example, in the United States, the FBI’s Uniform Crime Report (UCR) typically serves as a benchmark for discussions about crime trends. However, not all jurisdictions participate in the UCR program, including many small rural counties that are home to most US boomtowns. Additionally, the UCR traditionally focuses on Part I offenses—four violent crimes and four property crimes—and much of the criminal activity associated with boomtowns falls outside the Part I data. As Ruddell et al. (2014) note, crime data can be sparse for both boomtowns and comparison sites, including the less serious offences reported in the Part II data (e.g., driving under the influence, common assaults, and disorderly conduct), which may better capture the dynamics of crime changes in boomtowns.

The question of incomplete data issues raises some critical issues for further research. For example, how well do boomtowns keep up with reporting to external agencies? How much criminal activity is falling into the “dark figure of crime” due to underreporting? Are there other ways to gain more accurate measurements of crime in boomtowns, such as through surveys or direct observation? One of the challenges raised by Jayasundara, Heitkamp, and Ruddell (this issue) is that the lack of accurate data makes it difficult for agencies to successfully advocate for increases in staffing and other resources to external agencies. This shortcoming is being investigated by the U.S. Bureau of Justice Statistics, who funded RTI International to examine changes in crime, public disorder, and police responses to crime in the Bakken region (Martin and Cooper, 2015).

One particular aspect of boomtown crime that deserves special attention is traffic crime. Boomtowns frequently see increases in reckless or dangerous driving, as well as increases in intoxicated driving (Ruddell and Ortiz, 2015). The combination of young adult males, significant disposable income, and fast cars or big trucks can lead to longstanding residents feeling under siege while out for a drive (Britto, this issue). For example, Ruddell, Heitkamp, and Mayzer (2015) found a positive association between booms and fatal collisions in oil-impacted North Dakota counties. A Texas Tribune (2014) study found that fatal accidents in Texas boom counties involving commercial vehicles increased 244 percent between 2009 and 2013. Consequently, when boomtowns arise, how does traffic enforcement keep up with the changes, or does traffic
enforcement suffer as patrol officers are kept busy managing public order offenses? Perhaps more importantly, are there strategies communities can employ to keep the roadways safe?

**Partner Agencies**

While the police are the front line agency tasked with public safety, they are only the entry point into the criminal justice system. As with an assembly line, more “product” produced by the police, in terms of arrests or referrals of juveniles, leads to more work for the other criminal justice agencies. In each instance where a prosecutor decides to proceed with a criminal case, the court’s docket grows. In smaller communities, significant increases in cases can severely impact prosecutorial offices, defense attorneys, and the court. Perry (2007) found that the number of both civil and criminal cases in a Wyoming county expanded exponentially after an oil and gas boom. This raises the question of whether boomtowns have adequate staffing, and the corresponding funding, for their courts due to increased caseloads. Moreover, are cases that would previously have been prosecuted now being waived by the prosecutor due to system capacity? Given that local resources are often stretched thin, do these communities have the capacity to implement rehabilitative initiatives, such as developing treatment courts for the drug/alcohol and other special types of offenses—such as domestic violence—that arise during periods of rapid growth?

A boom can impact the delivery of correctional services, including the operations of local jails. Although newspaper accounts have reported the increased demand on these operations (Lutey, 2014), there has been little scholarly work investigating these changes, or the implications of jail crowding. Do booms provide impetus for local governments to form regional jail operations that leverage and maximize resources, or do local governments respond by building new jail facilities? In those instances where offenders are sentenced to incarceration, how are local jails meeting the needs of the local justice system? Are offenders, for instance, incarcerated for their complete sentences, or are they released early as a result of overcrowded detention facilities? Last, do booms impact prison populations at the state level? An examination of North Dakota state prison statistics reveals that the incarceration rate per 100,000 state residents increased from 214 in 2006 to 232 in 2014 (an 8.4% increase) while the national prison population decreased by 6.4 percent during the same era (U.S. Bureau of Justice Statistics, 2016).

The boom also has an impact on the operations of departments of probation and parole. Because many of the crimes that boomtown research has uncovered in these towns are often less serious offenses, and because probation is the most common sanction in the criminal justice system and most often used for these lower-level crimes, it is important to know how probation departments are managing these increased caseloads. The North Dakota Department of Corrections reported, for instance, that the number of offenders on probation or parole increased from 4,793 to 6,843 between 2010 and 2015, an increase of over 40 percent (Macpherson, 2015). And probation and parole officers in Montana report having substantially higher caseloads in boom areas, as compared to their colleagues in the rest of the state (Guldborg, 2015). Are probation and parole departments in boom jurisdictions turning toward more specialized caseloads? Moreover, are these agencies utilizing novel treatment and supervision methods, or are they simply trying to keep up with ever-growing probation rolls?

All of these issues remain dependent on a qualified workforce in criminal justice agencies. News accounts have detailed the difficulties that service industries and retailers have in maintaining
employees during a boom; wage competition is fierce in these towns. The recruitment of specially trained police officers, court officials, probation officers, and correctional officers may be impacted by booms (see Archbold, Dahle, Huynh, and Mrozla, this issue; Archbold and Dahle, 2015). How are criminal justice agencies able to retain their qualified and high-performing employees in light of high living costs and opportunities to work in less stressful roles in non-enforcement positions? One of the questions that Archbold (this issue) addresses is how justice system agencies deal with issues of employee burnout. Are these agencies able to recruit new employees if turnover is high—that is to say, are they competitive with boom industries?

Beyond the criminal justice system, booms take a toll on other local public services. For instance, some limited research demonstrates an increase in mental health service needs for longer-term residents in communities affected by booms, but it is unclear if and how the boom caused these increases and how to stem possible negative mental health impacts on members of the community (Bacigalupi and Freudenberg, 1983; Freudenburg, Bacigalupi, and Landoll-Young, 1982). Questions remain regarding how social service agencies deal with the population influx, and resulting increases in agency traffic, especially in organizations that are aligned with the justice system, such as health and human service departments. Moreover, do the transient populations moving to boom locations present special challenges to service delivery? Although some scholarship has addressed these issues, there has been a lack of empirical attention placed on the effects of the boom on non-profit and local government organizations. How do local school districts deal with a possibly large increase in students? As with the criminal justice agencies, how do these other public agencies recruit and retain qualified staff? Last, what are the other challenges of providing services?

Booms also take a toll on local infrastructure, and one of the most pressing problems in most boomtowns is supplying safe and affordable housing for the workforce (Ennis, Tofa, and Finlayson, 2014). While a growing number of corporations are providing housing for their employees, these accommodations do not help those with families. As noted by Jayasundara, Heitkamp, and Ruddell (this issue), the lack of housing exacerbates other social problems and often impacts the most vulnerable residents (Ennis et al., 2014). Despite the fact that housing is a key challenge, there is comparatively little scholarship on whether some boomtowns have successfully solved this problem.

One of the challenges for local governments is that the roadways in small rural counties are seldom designed for the increased flow of traffic, and in particular, large vehicles. Abramzon, Samaras, Curtright, Litovitz, and Burger (2014) estimate that a single natural gas well in Pennsylvania will require between 625 and 1,148 one-way trips from heavy trucks, and that figure does not include smaller commercial vehicle traffic that also services these well sites. The resulting need for road-widening and additional traffic controls may partially be paid for via assessments to the corporations benefiting from the boom, but this can still be a costly endeavor, and one that a small community’s planning department may be unprepared to tackle. But this also raises a larger issue for small counties and rural local governments and their political capital to petition the state and federal government for transportation funding that may address road conditions and enhance public safety during a boom.

Busts
According to the old adage, what goes up, must come down. At some point, booms either establish some form of equilibrium or they bust. Many large-scale extraction projects require fewer workers after they are established, and the workforce gradually withers and the population returns to “normal.” By contrast, the drop in commodity prices in 2014–2015 resulted in a dramatic and sudden population decrease in many Canadian and US boomtowns. In Alberta, Canada (a province with about 4.2 million residents), over 100,000 jobs were lost due to the crash in oil prices between 2014 and 2015 (Hussain, 2015). The transition to a bust reverses many of the secondary effects that impact a boomtown. All of the questions raised thus far—about the residents, the police and crime, and the other local agencies—are pertinent when considering the end of a boom cycle and the entry into equilibrium or a bust cycle.

Media reports have linked busts with increases in crime in boomtowns and surrounding cities (Cotter, 2015; Etter, 2015). Workers may scavenge any salvable resources, which could of course include company property, but more frequently, busts mean the theft of oil and diesel fuel. Krugel (2015) cites oilfield security managers who reported that thefts increased by about a quarter as the boom ended. Vandalism on oilfield sites also increased, and this might be attributed to employee anger over the loss of their work. Few transient employees, however, remain in the boomtown, and they return to their homes. Anger and disappointment are common. For example, in the oil patch, an adage that dates back to the 1980s is “Please God, let there be another oil boom. I promise not to piss it all away next time.”

One issue that requires clarification is what happens to these communities after the bust. Some local governments expanded their physical and human resource infrastructure in anticipation of a continued boom (Healy, 2016). Local governments hired additional police and probation officers, nurses, teachers, and social workers and incurred the training costs for those personnel. With respect to the physical infrastructure, roads were widened, water and sewer treatment plants expanded, and capacity was extended in schools, medical facilities, and social service agencies. Jail beds were added or corrections facilities were constructed. Local businesses that supported the oilfield firms, from restaurants to the small companies that service the oil wells, also expanded, and they are among the first to experience the negative impact of the bust. Last, even charitable organizations are burdened after the bust. For example, the Wall Street Journal reports how a North Dakota Salvation Army group “spends about $1,500 a month to purchase one-way bus tickets to help people leave Williston” (Gold, 2016). The efforts of these non-profit organizations are also not fully understood, although Halseth and Ryser (2015) found that they do play an important role in managing the boom. Altogether, we have very little knowledge about this side of the cycle, and without it, towns that experience booms may be poised to repeat the mistakes of other communities.

Alternatively, research must also examine how some boomtowns may be resilient to the bust, what resiliency may look like, and the contextual factors that enable resiliency and recovery from the bust. One avenue to develop our understanding of the effects of a bust is to examine rural areas that have experienced a significant decline in industry and production. Even if these areas do not feature the rapid increase in population and gross domestic production observed in boomtowns, they nonetheless experience something analogous to a bust, including outmigration.

A final aspect missing from the research literature is cross-national studies exploring the
similarities between natural resource extraction and boomtown effects—including crime and disorder—across the globe. While this special issue provides examples from three nations in two continents, we question what we are missing from the non-English literature on boomtowns and boomtown effects in developing nations. Researchers in many English-speaking nations are operating somewhat in isolation, and their work cannot inform broad theories of boomtown dynamics without a full understanding of what is occurring in non-English-speaking countries.

**Theoretical Development**

Most of our understanding of boomtown dynamics is based on Freudenberg's (1984, 1986) work on social disorganization or the social disruption perspective (England and Albrecht, 1984; Wilkinson, Thompson, Reynolds, and Ostresh, 1982). There has been some criticism that those viewpoints fail to fully explain the dynamics at play in boomtowns, especially how this is related to disorder and crime (Donnermeyer and DeKeseredy, 2014). Carrington and colleagues (this issue) address how this perspective might be more effective at explaining crime in sparsely populated rural areas; it is less successful in explaining violent crime in even more remote or isolated places. Moreover, theories of social disorganization do not explain how changes in power relationships can “create” crime through asserting rights to appropriate the lands of Indigenous people against their will, or through labeling Indigenous behaviors and practices as illegal. These theories also do not address the “invisibility of rural women” in studies of crime. These women may be thought exempt from the gendered and racialized violence often ascribed to the experiences of low-income urban women, given the tendency for social disorganization theories to highlight the dysfunctionality of urban structures in contrast to the more integrated nature of rural and parochial societal structures (Scott and Hogg, 2015: 174).

Isserman and Merrifield (1987) advocated for quasi-experimental control group methods to apply growth pole theory, providing a start to explaining the underpinning economics of a boom. It may also be important to target towns with boom potential in order to use longitudinal methods to their best advantage, avoiding the problems associated with studying towns after the boom has occurred. Other researchers advocate for a qualitative approach to better understand boomtown dynamics in an effort to theorize about their effects (Goldenberg, Shoveller, Ostry, and Koehoorn, 2008; Werthmann, 2009). Last, Lee and Thomas (2010) find that a number of community-level factors might increase cohesiveness and therefore result in less crime. These community-level factors are not fully articulated in social disorganization approaches. Exploring how to target these factors could be of vital importance for the future of boomtowns as well as broader theory development. A theory that fully explains boomtown crime would account for changes in community crime and disorder, the strength of a community's social fabric that enables some to successfully resist crime, and power relationships.

Theoretical development, especially as it relates to antisocial behavior and crime, should be informed by the fact that crime appears to increase during both the boom and the bust. It is plausible that periods of expansion and contraction are criminogenic, although the underlying dynamics are different in both instances. Booms may be criminogenic due to the population growth of young male newcomers earning high salaries who engage in prostitution, impaired driving, assaults, and drug use. Crimes during the boom increase in severity as gangs and organized crime associated with illicit industries compete for revenue. In the bust, by contrast, economic
deprivation drives a smaller crime wave as former workers engage in theft and vandalism. While this proposition is speculative, any theories related to the boom-crime relationship ought to consider the criminogenic impact of the bust.

**Developing an Inventory of Best Practices**

Although the booms that occurred in North America after 2000 have largely been framed by social scientists as a relatively new phenomenon, their consequences are generally predictable and the only unknown factor is where (and when) the next boom will occur. Most places experiencing rapid population growth and industrialization due to natural resource extraction will be in the countryside. Morrison, Wilson, and Bell (2012: 485) observe that “most rural local governments and their town planning schemes are unprepared for boom conditions, both in terms of the sophistication of the schemes and the capacity of the planners.” In many respects, these local governments are doubly disadvantaged because they must manage the boom on their own, as senior levels of governments (e.g., state, provincial, territorial or federal) tend to move very slowly in terms of providing assistance (Halseth and Ryser, 2016). These perceptions were echoed by the focus group participants discussing North Dakota human service work, who expressed frustration due to the lack of financial supports despite the fact that senior governments profited from the revenue from the oil and gas boom (Jayasundara et al., this issue).

Because local governments must often “go it alone,” there is a need for a guidebook or inventory of best practices for all community services, including law enforcement and the local justice system. Expanding our research-based knowledge of booms associated with resource exploration and developing more comprehensive theories of disorder and crime could inform the development of an evidence-based inventory of best practices in responding to the boomtown effects. Such an inventory would enable local community leaders to work more effectively with stakeholders and agency leaders to develop more effective strategies for managing a boom, and what has worked (and failed) in other jurisdictions.

**Conclusions**

It has been said that if a social problem is predictable, then it is preventable. The research literature clearly shows the impacts—both positive and negative—of booms on small communities and the people who live within them. By making our research more purposeful and refining and extending our theoretical work, researchers can play an important role in the development of evidence-based inventories of best practices that can be used by boomtown politicians, administrators, police leaders, and the corporations that profit from the boom to work together to create more peaceful communities. While residents of these places often experience significant reductions in quality of life, this does not have to be the norm.

At the time of this writing—mid-year 2016—lower commodity prices have led to slowdowns in many boom communities (a transformation from boom to doom town in some cases). These conditions have given a respite to many places that were suffering from the most negative consequences of the boom (Upton, 2016). As a result, researchers are in a unique situation in that they can document the impact of boom declines in these communities and the impact upon local justice systems. Jacquet (2014) has identified a cycle of boom, bust, and recovery. That cycle
includes the realization of enhanced local tax revenues, but it also features outmigration of longstanding community residents, and long-term adverse changes to the boomtown. A greater awareness of the inherent risks of boomtowns could provide a more rational basis for community decision making regarding local resource development.

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Peer Reviews
Manuscript Title: *Finding the Town amidst the Boom: Public Perceptions of Safety and Police Priorities in a Boomtown Milieu*

Special Issue of the Internet Journal of Criminology on Boomtown Crime / Responses to crime and disorder in places experiencing growth due to natural resource extraction.

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Recommendation

**ACCEPT WITH MINOR REVISIONS**
General comments to the Author(s) on how to strengthen the manuscript,

In general, the article is interesting, well-written, and appropriate for this journal. I have several recommendations for improvement, however. I’ve outlined each of those below.

1. On page 3, the author(s) (hereafter author) needs a better transition after the block quote.
2. On page 7 or 8, the author needs to clearly explicate their hypotheses or research questions.
3. On page 11, the author needs a callout to insert Figure 1.
4. On page 12, change “Many RMWB” after numeral 2 to “Some RMWB”
5. On page 13, the authors allude to the importance of fear of rape. They should include a discussion of the shadow of sexual assault, which is a key explanation of this finding. The author would also be well-served to read Fear of Crime in the United States by Lane and her colleagues and include information from their work here also.
6. The paragraph between Table 2 and Table 3 is inaccurate. Make the text match the table.
7. An important explanation for the findings from Table 3 has to do with the difference between perceptions of safety and perceptions of risk. Weaving that discussion in at the end of that same paragraph would be helpful.
8. For context, the author should compare actual calls for service in this boomtown with calls for service in towns of comparable size (or nationally) to see if proportions are different or the same.
9. The authors need to include another table to compare responses by gender. Trying to collapse all that information into one table is confusing and less informative.

Overall, I think the author did a good job with this paper and, with some revisions, it should be a publishable paper in this or some other journal.
Manuscript Title: *Finding the Town amidst the Boom: Public Perceptions of Safety and Police Priorities in a Boomtown Milieu*

Special Issue of the Internet Journal of Criminology on Boomtown Crime / Responses to crime and disorder in places experiencing growth due to natural resource extraction.

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Recommendation

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General comments to the Author(s) on how to strengthen the manuscript,

The authors present a well-written, researched, and tested discussion of the perception of crime in a specific “boon town.” The data is well-suited to address the research questions posed. The authors could take a few additional steps to improve the clarity of the writing and findings:

1. Define boon town in the first sentence of the manuscript and else consider providing clear historical examples of boon towns.
2. Revise the first two sentences of the second paragraph of the lit review, which are currently awkwardly written.
3. In the lit review, more context is needed for each reference discussed, including the data source used in the study, the location of the study, and the operationalization of the variables used in the study. This context can be further referenced in the methods and findings sections to help the author distinguish his/her work from previous studies on this topic.
4. On page 15, more information is needed on the resistance to planning for busts. What does that mean in the context of this and prior research studies on the topic. How is that resistance manifested and overcome, and also, how is it blocking prevention efforts or progress?
5. The gender gap discussion is unclear. Please elaborate.
6. Page 6 includes mention of a “sense of threat,” which is not defined and thus is unclear. Further information on the findings of that reference should be provided.
7. The findings from Table 1 could be better explained and described.
8. At the top of page 15, the author(s) could do more to explain and interpret the findings on the three of the top four calls – by offering information on how those “top calls” compare to other communities’ top call rankings. Greater explanation is needed on the “boon town municipalities resist changing funding planning” . . . on page 15. How does that play out? What do those discussions look like? What is the alternative and how might it influence policy and also crime rates?
9. The first two sentences of the paragraph starting “The other major finding from this study is that there is a large. . .” on page 15 is too vague, creating confusion about the meaning of the finding(s). The last sentence of the same paragraph is also oddly worded and unclear.

Overall, the author(s) present a nicely written and organized manuscript, and the findings present insight on the perception of crime in boon town communities and the challenges officials face in addressing crime in the periods of “boom.”
Manuscript Title:

Packin’ in the Bakken: Explaining the variation in concealed weapons carry permits in North Dakota counties.

Special Issue of the Internet Journal of Criminology on Boomtown Crime / Responses to crime and disorder in places experiencing growth due to natural resource extraction.

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Recommendation

**REVISE AND RESUBMIT**

The paper has very real promise, it would not need very much work.
Review: Packin’ in the Bakken: Explaining the variation in concealed weapons carry permits in North Dakota counties.

*Packin’ in the Bakken* is a generally well done piece. It is well written, timely and the reasoning underlying the work is quite straightforward. Essentially, the author(s) are interested in whether the boombtown phenomenon of the Bakken region has resulted in an increase in concealed carry permits in the affected counties. As the author(s) clearly explain, this increase might be anticipated for several reasons, all related to self-defense. First, the law enforcement infrastructure may lag, or be perceived as lagging, behind the population growth of the region, leading people to arm themselves. Second, the relevant region is heavily rural, thus police response times would be fairly slow. Third, the oil boom would bring in a large number of “outsiders” who would be perceived as a threat to pre-existing residents. Fourth, the boombtown literature has identified the density of acquaintanceships as related to a community’s collective efficacy and ability to effectively exert control.

In addition to its clear reasoning and timely exploration of matters in the Bakken, the article stands out in my mind for two reasons. First, it continues the expansion of the CJ and Criminological literature into rural areas which, historically, have been too little discussed. Second, it adds additional illumination of the informal mechanisms that citizens and communities use to fill perceived gaps in the formal criminal justice system’s operations.

However, I would like to see some additional work done on the paper regarding its analysis. Most importantly, while the author(s) note that she/he/they have used a pooled data set, no effort has been made to describe the data set, nor have they provided any of the details regarding how they analyzed that data set (the reader is merely told that dummy variables for 2008 and 2010 have been included in the base model and CCW permits for 2006 has been used as a variable in models 6 and 7). I would also like a brief discussion of the variables. In particular, while the author(s) note that they’ve included a variable for density of acquaintanceship, I have no idea which variable that is, nor how it captures this relational density.

I would suggest a revise and resubmit, but a tremendous amount of work would not be needed to get this paper ready for publication.
Manuscript Title: “Some Days I Feel Like The Dam Broke…” An Examination of Increased Workload on Police Officer Stress and Job Satisfaction in Western North Dakota

Special Issue of the Internet Journal of Criminology on Boomtown Crime / Responses to crime and disorder in places experiencing growth due to natural resource extraction.

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Recommendation

REVISE AND RESUBMIT
General comments to the Author(s) on how to strengthen the manuscript,

- **Introduction**
  - You mention boomtowns. Define what is considered to be a boomtown (page 1)
  - I suggest that you briefly state your overall finding of the study at the end of the introduction.

- **Changes in Police Work Load in Western North Dakota**
  - In the first sentence, you used the acronym, EOG. Let your readers know what this stands for.
  - You discuss that population change leads to changes in police workload. What is it about population change that impacts police workload? Could possible discussion how population change impacts the overall dynamics of the city.
  - The following could be moved to the introduction section: “Given the significant changes in population size and volume of calls for service from the public, how are police officers responding to these changes? Do officers see any personal benefits or drawbacks associated with these changes? Has the changing population affected officer stress and job satisfaction? The current study addresses these questions using face-to-face interviews with 101 police personnel working in the Bakken oil shale region”

- **Police Officer Stress and Job Satisfaction**
  - Both stress and job satisfaction are sufficiently discussed, but the researcher does not make the connection or discuss the relationship been the two. Make the link on how job stress has the potential to influence job satisfaction. Has there been research directly examining officer stress on job satisfaction? It was somewhat difficult to make the connection between the two from this section. Is there research in other areas, outside of criminal justice and criminology, that explore the direct link between job stress and job satisfaction?
  - What is the overall consensus on the relationship between officer stress and satisfaction? Are findings consistent in one direction or is it mixed?
  - On page 7, you mention that “Johnson (2012) found that African Americans…… when compared to whites.” What is the reasoning behind this? Does this have to do with police workload or possible race relations in the officers’ department(s)?

- **Methodology**
  - **Data**
    - What are some limitations of qualitative data? Researcher discusses the strengths of qualitative research, but fail to mention criticisms associated with qualitative research.
  - **Research sites**
    - In the second sentence, replace colon (:) with period.
  - **Description of the Sample**
    - What are the gender and racial makeups of the agencies? Although it can be assumed that the sample is majority white and male, it is still beneficial to let your readers know the racial and gender makeup of your sample.
    - I suggest including a table with the descriptive statistics of the demographics of the sample
  - **Coding and Analysis**
    - Handwritten is one word (first sentence in the section)
    - You state that you used grounded theory and define it. However, what is the benefit and possible drawbacks of using such an approach?
    - In the paragraph discussing intercoder reliability, a transition sentence is needed before discussion.
    - In the second sentence rather the word “some,” I suggest “It is suggested…..”
    - In paragraph “Final coding…..”, change colon to a period.
Findings

- Perceived benefits and drawbacks associated with rapid population growth
  - Well-written!
- The impact of rapid population growth on police officer stress
  - Many (36%) of these officers reported that their stress comes from the high calls for service load. I would not use the word many.
- The impact of rapid population growth on police job satisfaction
  - Well-written
- Overall, the findings section was well-written.

Conclusion

- In the conclusion, you make the connection between job stress and job satisfaction, but you fail to do so in the section discussing job stress and job satisfaction.
- You mention that the turnover rates are high among these departments, but you do not provide an estimate anywhere in the paper about the turnover rate. What is the average turnover for the departments included in the study?
- You state that there were no racial, gender, or educational differences in reported stressors; however, you detail information on race and gender of the officers. Also, the reader cannot make this inference from your discussion on findings because you do not mention the race, gender, or educational level of the participants whom you directly measured. A suggestion would be that in the parenthesis with the officer’s number, you could mention the race and gender of the officer (Example: PO 17, white male). You could also include educational level and months of experience, but they may be a bit much (Example PO 17, white male, high school graduate with 36 months of experience)
- You mention mid-career when discussing police experience, but it is not clear what is meant by mid-career. This term is somewhat relative because what may be considered mid-career to one may not mean the same thing to other officer.
- In the conclusion, you hint at two limitations of your study (limited information on police subculture and no discussion of promotion); however, what are some methodological issues that may limitations of the sample, such as generalizability, gender/racial differences, etc.
- Also, I would suggest some possible topics for future research examining police stress and job satisfaction in boomtowns
Manuscript Title: “Some Days I Feel Like The Dam Broke…” An Examination of Increased Workload on Police Officer Stress and Job Satisfaction in Western North Dakota

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Recommendation

**ACCEPT WITH MINOR REVISIONS**
General comments to the Author(s) on how to strengthen the manuscript,

I found this manuscript to be informative about isolated issues confronting Law Enforcement personnel in Western North Dakota. The author discussed the rapid increase in population due to the energy business in that area. This increase in population has caused an increase volume of service calls for Law Enforcement personnel that, in turn, have created increased stress on some Law Enforcement personnel.

My suggestions for strengthening this manuscript:
1. Add percentages of increase to the elements contained in Table 1: Population, Service Calls and Sworn Personnel.
2. To better illustrate the “Service Calls”, develop a table detailing the nature of the service calls.
3. To better illustrate “Stress”, develop a table detailing
   - Use of sick time (Increase / Decrease)
   - Percent of turnover
   - The number of sworn personnel using the Employee Assistance Program.
   - Number of disciplinary actions against sworn personnel.
4. Develop a Table illustrating the increase in arrests
5. Reread the manuscript and eliminate or reword repetitious statements.

One last comment: The personal interviews certainly add realism to this manuscript. I believe, however, that adding more actual data will enhance this manuscript.
Manuscript Title:

Voices from the Front Line: Human Service Workers Perceptions of Interpersonal Violence in Resource-Based Boom Counties

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I found this manuscript to be interesting because prior to reading this piece, I would have never thought of interpersonal violence being high in a small town in North Dakota. After reading this article, I do believe that this original piece has potential, however, there were questions that I had, in addition, there are items discussed that should be expanded. My comments are as followed:

- The author must understand that not everyone is familiar with what boomtowns are and with that being said, I thought it would have been worthwhile for him to state early on in the paper how he operationalized boomtowns. What are some characteristics of an area that a town can be considered a boomtown? Are there other forms of boomtowns in the U.S. that changed the social climate?
- The author mentioned that because of oil industry entering into this town that people from other towns or state would come to find potential jobs, which in turn may have an effect on the crime rates increasing in this area. It made me wonder if there were articles about rural towns are urbanizing because of these industries. It would be interesting if he/she could include information on that to see if these towns are similar to metropolitan cities.
- He/she explained that crimes were prominent; the individual should discuss some of the official statistics from the UCR for that area, because he/she is arguing that crime is prominent specifically interpersonal violence (IPV).
  - There are several articles that discuss the reasons why women stay in violent relationships and who are suitable targets in crime (women, children, elderly, disabled).
  - Also, the author should discuss the weakness of the UCR to help readers have a better understanding of why IPV is under-reported. Some law enforcement agencies under-report for political reasons or to make it appear that there is not as much crime taking place in that area.
- The article discussed that there were a need for more human services workers, however, it would have been interesting to see how the individuals in that line of work were dealing with the increase in IPV.
- The author was coming from a critical theory approach but he/she did not discuss in what way they were approaching. Should give a more detailed description of why this approach was suitable for the research question being asked. Are there other theories that can be applied? Because from reading this piece, the author could easily discuss collective efficacy (Sampson and Grove) and/or Social Disorganization Theory (Sutherland) and/or Instutional Anomie Theory (Messner and Rosenfeld)
- They discussed significant turnover in law enforcement officers in this area. Could the lack of law enforcement officers be the true reason why crime, specifically IPV, is increasing in these areas and not the effects of the boomtowns.
  - Have the author read any research about training that is used to assist in crimes in boomtown rural areas or the lack thereof?
- The methodology should be mixed (quantitative and qualitative) to compare/contrast about what people perceive crime in those areas versus what the statistics are really saying. Create tables and graphs for readers to have an idea of what they are looking at.
- The author discussed that there were 40 people overall that participated in the interviews and focus groups. However, he/she stated that there were 3 focus groups. How were the individuals divided into these three groups.
- The sample included 75% women and all were white which means that there was not any diversity in the sample which some would consider problematic. I think he/she should give the demographics of the town (age, sex, race, class) to help readers know why the majority of the sample are women.
o Is it common for minority workers to work and commit crime in these areas? The reason why I ask is because the article mentioned how community members stereotyped people of color who traveled for work.

- Talk about why intercoder-reliability is important in qualitative research
- The author talks about housing issues among people who are victimized by their partners? What have governmental agencies or human services agencies done to protect those persons victimized?
- Oil boom increased crime and the nature of work of these employees. Has their work overload cause person to quit? Have there been incentives offered to retain some of these employees. Were there questions pertaining to the persons happiness with their jobs?
- Conclusion should discuss some of the limitations of the paper, especially, the methods and what the author would have done differently.
  o Also, expand on the policy implications that was outlined but not discussed on pg 31. In addition, there are more policy implications that can be added based on what was written and researched
  o Future research?
- Need to include an Appendix A and Appendix B
  o Interview Guide/Question
  o Focus Group Guide/Questions
Manuscript Title:

Voices from the Front Line: Human Service Workers Perceptions of Interpersonal Violence in Resource-Based Boom Counties

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Recommendation

ACCEPT WITH MINOR REVISIONS
General comments to the Author(s) on how to strengthen the manuscript,

The purpose of the manuscript is clear, to study the effects of boomtowns on crime through the perceptions of service workers. Good focus on pointing out gaps and flaws in previous research in the area.

A minor mention of social disorganization or collective efficacy would contribute to the theoretical argument behind why boomtowns might lead to crime.

The discussion on the lack of service workers and lack of reliable information on crime was well oriented and was relevant to the current problem. Good work establishing a link between these two, and why you chose to use service workers as a measure of crime.

Are there any differences between Canada and the US that might influence the findings? (there are comparisons made between them in a couple of places the manuscript)

There was not a way to diversify the sample? There is a high percentage of females and whites in the sample of service workers. If this is a reflection of area demographics (which I suspect it is), then that should be stated too.

Good discussion on the methodology.

Would have been useful to have some sort of quantitative or mixed methods in the research, but the author(s) acknowledge this in their discussion of the findings, as well as pointing out the need for future research on Native Americans and boomtown crimes or violence. This is a great suggestion for future research.

Overall, the article is straightforward, organized, and sound in its various areas of discussion. The article is easy to follow, and the results contribute to existing research in the field. The article is hugely relevant to the field of study.
Manuscript Title:

Alcohol, Violence, Frontier Masculinities and the Australian Mining Boom

Special issue of the Internet Journal of Criminology on Boomtown Crime / Responses to crime and disorder in places experiencing growth due to natural resource extraction.

In order to respect the blind-review process, we ask that you please submit your specific comments for the manuscript on a separate sheet(s) from this one, so that we can forward them to the author(s) without revealing your identity. Remember that the more specific your comments are, the more helpful they will be for the author(s).

Please include the following assessment criteria/questions in your evaluation of this manuscript:

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Recommendation

REVISE AND RESUBMIT
General comments to the Author(s) on how to strengthen the manuscript:

This article makes an important contribution to the literature by examining violence, masculinity, and crime in boomtown settings. This article also makes an important contribution to the larger literature on rural living by examining how masculinity is performed in boomtowns. Overall, the manuscript is well written and a very interesting read. However, there are some important revisions that could be made that would strengthen the manuscript even further.

First, while the literature is fairly comprehensive, it is missing some key studies. In particular, Ennis and Finlayson’s (2015, Social Work in Public Health) study on alcohol and violence in Darwin should be cited. Additionally, in the following statement “…including the United Kingdom and Canada (Doukas, et al. 2008 , Storey, 2001; Storey, 2008; Ruddell, 2011)”, several references need clarification. That is, Doukas et al. and Storey 2008 are not in the reference list. Also, Storey 2001 doesn’t appear to be about either the UK or Canada. Other relevant Canadian studies include O’Connor (2015, International Journal of Comparative and Applied Criminal Justice) and a special issue in the Canadian Journal of Sociology published on Fort McMurray in 2013.

Second, in the methods section, some citations should be provided to support the use of interviews as a method to collect data. For example, what did interviewing provide over other types of data collection techniques? Also, the limitations of interviews should be discussed as well as any differences found between conducting group interviews and one-on-one interviews. The methods section could be further enhanced by providing a description of the regions and places where interviews were conducted (e.g. demographics, what type of mining is occurring). The manuscript states that a purposive sample was taken based on the wider population but what did this wider population look like? Also, how were the places that interviews were conducted chosen? Further, how was the interview data analyzed?

Third, clarifying how interview data was analyzed would help better understand some of the findings. That is, some quotes were placed in the manuscript but not clearly discussed. For example, the first quote in the section “Have a taste of dust and sweat mate” was not clearly connected to the write-up that followed. Also, some quotes are clearly about both masculinity and maybe more so being young but only the masculinity aspect was discussed. The paper could be strengthened by more fully discussing how age intersects with masculinity. For example, a transient lifestyle is more possible when you are young. While there is very little literature examining young people in boomtowns, Freudenburg (1984, American Sociological Review) and O’Connor (2015, Journal of Youth Studies; 2014, Journal of Education and Work) might be useful in helping to analyze ‘youth’ more fully in the manuscript.

Finally, rather than a monologic masculinity, could it be that men are simply attempting to replicate hegemonic masculinity (as R. Connell has suggested)? Men are presenting themselves ‘in relation to’ a perceived hegemonic masculinity within this setting. It’s unclear how monologic masculinity adds something new to this discussion. More thought needs to be put into how this monologic masculinity connects with hegemonic masculinity as well as multiple masculinities and femininities. For example, what creates this environment (e.g. Is it the type of work? Make-up of the town?)? Were these men expressing monologic masculinity before they arrived? Do they express it when they return home to their families? Also, if masculinity explains this behaviour, what can be done to improve the crime and violence that accompany resource booms? Can different types of masculinity be encouraged?

Minor Revisions:
1) In the abstract...“In the social sciences, the social impacts of mining have largely been understood with through a social disorganization lens, with population instability being linked to social disorder.”...delete with...through a social...

2) Maybe mention masculinity in the title as it plays a prominent role in the paper.

3) “The above noted, ]there is a growing…” needs to be fixed (pg. 3)

4) “While there has been debate as to whether crime rates are proportionate to population growth, perceptions of crime have real impacts on quality of life (Wynveen, 2011)...should be Wynveen (pg. 5)

5) “(Less than 20% of the workforce at the height of the Australian boom were woman: Gilmore et al. 2015)”....should be women

6) “In such instances, alcohol-related violence can be considered as an attempt by groups to ‘make sense of their place’ amidst economic upheaval and restructuring and what might be considered the anomic impacts of super-capitalism on work patterns and community structure.” Should be “impacts” (Pg 15)

7) The author states the majority of interviews were one person but specifically stating how many would be helpful.

8) Check to make sure all the citations are in the reference list (e.g. Connell is listed in the paper but not in the references)
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Recommendation

ACCEPT AS IT STANDS

Comments: Great paper.