

Public Support for Conducted Energy Weapons: Evidence from the 2014 Alberta Survey¹

Temitope B. Oriola*

Department of Sociology, University of Alberta

Heather Rollwagen and Nicole Neverson

Department of Sociology, Ryerson University

Charles T. Adeyanju

Department of Sociology and Anthropology, University of Prince Edward Island

Cette étude, basée sur les données de l'enquête de 2014 en Alberta (N = 1 204), examine l'appui de l'utilisation d'armes à impulsion (AI) par les policiers canadiens. Cet appui est mesuré à l'aide de quatre questions utilisant l'échelle de Likert, lesquelles illustrent différents aspects de l'utilisation d'AI : (1) des armes « moins létales » comme les Tasers devraient être mises à la disposition des policiers; (2) les Tasers sont des outils de maintien de l'ordre sécuritaires; (3) l'utilisation de Tasers réduit les niveaux de confiance envers la police; et (4) les explications officielles en matière de blessures et de victimes lors d'incidents liés à l'utilisation de Tasers sont satisfaisantes. Les résultats d'une régression logistique indiquent que la race, l'âge et le sexe sont des variables explicatives clés de la perception de l'utilisation des AI par les policiers canadiens. Plus particulièrement, il est moins probable que les femmes, les jeunes et les minorités racialisées appuient cette utilisation. Il est au moins trois fois plus probable que les personnes s'identifiant comme étant de race blanche appuient l'utilisation d'AI par les policiers, comparativement à ceux qui s'identifient comme étant Autochtones ou membres d'autres groupes racialisés. Avoir un revenu de ménage bas, vivre dans une région urbaine et le niveau d'éducation ne sont pas des déterminants significatifs.

Mots clés : armes à impulsion, AI, Taser, Alberta, maintien de l'ordre

This paper examines support for the use of conducted energy weapons (CEWs) by police in Canada using data from the 2014 Alberta Survey (N =

* Please direct correspondence to Temitope B. Oriola, Department of Sociology, 5-21 Tory Building, University of Alberta, Edmonton, AB, T6G 2H4; oriola@ualberta.ca

1,204). Support for CEW use is measured using four Likert-scale questions, capturing different dimensions of CEW use: (1) “less-lethal” weapons such as Tasers should be made available to police officers; (2) Tasers are a safe policing tool; (3) the use of Tasers reduces levels of confidence in the police; and (4) official explanations regarding injuries and casualties in Taser-related incidents are satisfactory. Results of a logistic regression indicate that race, age, and gender are key predictors of perceptions of CEW use by police in Canada. Specifically, women, young people, and racialized minorities are least likely to be supportive of CEW use by police. Individuals identifying as white are over three times more likely to support CEW use by police, compared to those identifying as Aboriginal or members of another racialized group. Having a low household income, living in an urban area, and education are not statistically significant predictors of support for CEW use by police.

Keywords: conducted energy weapons, CEWs, Tasers, Alberta, policing

Introduction

The use of “less-than-lethal” force options, such as conducted energy weapons (CEWs),² by police in Canada continues to generate controversy. Police organizations generally support the use of such tools, while human rights organizations express concerns over injuries and deaths of citizens (see [Amnesty International 2012](#)). An estimated 33 persons in Canada have died during or after such devices have been deployed ([CBC 2013](#)), although casualties have been described as “extremely rare” ([Expert Panel on the Medical and Physiological Impacts of Conducted Energy Weapons 2013](#): viii). Socio-scientific literature on CEW use by Canadian police is scant; most studies focus on the United States ([Terrill and Paoline 2012](#); [Kaminski et al. 2013](#)). Notable exceptions are the analysis of the policy recommendations of the Thomas Braidwood inquiry into the death of Robert Dziekanski ([Williams 2012](#)), gender differences in attitudes towards police use of Tasers³ in the aftermath of Mr. Dziekanski’s death ([Mandel 2013](#)), and socio-demographic commonalities among fatalities in CEW-related incidents ([Oriola, Neverson, and Adeyanju 2012](#)).

The limited literature on CEW use in Canada is surprising because the use of force by law enforcement ([Balko 2013](#)) has become a major public issue in comparable liberal democratic countries such as the United States ([Gau, Mosher, and Pratt 2010](#); [Paoline, Terrill, and Ingram 2012](#)), the United Kingdom (see [Jenkinson, Neeson, and Bleetman 2006](#);

Dymond 2014), Australia (Ryan 2008), and Canada (Braidwood 2009, 2010; Mandel 2013). One key concern is the perceived militarization of police and overreliance on force (Balko 2013). This is interesting because, between 2005 and 2007, for instance, the Calgary Police Service engaged in the use of force in only one out of 1,400 incidents, or 0.07% (see Hall 2009). Nonetheless, use-of-force incidents are increasingly acquiring digital identities as cellphone cameras, closed-circuit television, and other appurtenances of surveillance exacerbate “policing’s new visibility” (Goldsmith 2010: 914; see also Thompson 2005).

The use of CEWs by police is being expanded, despite the arguably unsettled debate over their “safeness” (Expert Panel on the Medical and Physiological Impacts of Conducted Energy Weapons 2013). For instance, Ontario announced in 2013 that police organizations would be allowed to provide Tasers to all front-line officers (Radwanski 2013). The announcement was made against the backdrop of the case of Sammy Yatim, a Toronto teenager who was killed after being shot twice by a police officer and then tased by another. Incidents such as this fuel the clamour to deploy more CEWs as intermediate force options, while those who oppose the use of CEWs by police argue that more verbal engagement and de-escalation techniques are the solution. At the end of 2010, at least one CEW had been adopted by 129 out of an estimated 202 Canadian law enforcement agencies (CBC 2013). In addition, agencies have increased their acquisition of Tasers from 2,800 in 2008 (CBC 2009) to at least 9,174 in 2013 (CBC 2013).

Overview of study

Research indicates that factors such as lived social space (rural versus urban residency and neighbourhood context), level of education, age, experience of victimization, feelings about personal safety, and overall disposition towards authority influence people’s perceptions of police (Tufts 2000; Weinrath, Young, and Kohm 2012). In this study, we explore variables such as age, sex, race, income, and level of education to ascertain their influence on support for the use of CEWs by police. A Winnipeg study, for instance, finds that younger people, lower-income individuals, and former victims of crime hold less positive views of police (Weinrath et al. 2012). We pay particular attention to the impact of race.

There are arguably fewer documented cases of racially charged incidents involving the police and citizens in Alberta than in other provinces in Canada, such as Ontario, Quebec, and British Columbia (BC), and larger cities like Winnipeg, Toronto, Montreal, and Vancouver.

Fewer high-profile, contentious policing cases occur in Alberta than have become routine in the other Prairie provinces of Saskatchewan and Manitoba. Some of these high-profile cases are the shooting of J.J. Harper, a member of the Wasagamack First Nation, in 1988 in Winnipeg; the 2005 shooting of Mathew Dumas, also in Winnipeg; and racially charged incidents involving police in the freezing deaths of Aboriginal persons in Saskatchewan in the 1990s and 2000s (Comack 2012). These were major media events (Fiske 1996). This ensured widespread coverage and exchange of ideas and feelings about their meaning and the broader implications for Aboriginal communities and society in general.

The present study focuses on the social and demographic correlates of public support for the use of CEWs, such as Tasers, using findings from the 2014 Alberta Survey ($N = 1,204$). Investigating the correlates of support for CEWs is important for several reasons. First, CEWs are being increasingly adopted by law enforcement organizations and are, therefore, a routine part of policing, despite public criticism (Radwanski 2013). Second, effective policing requires the co-operation of the public. Third (as a corollary), the contours of support (or lack thereof) for CEWs may indicate areas that require more effort on the part of the police (because the use of CEWs in Canada is restricted to law enforcement agencies). This includes publicizing evidence about the efficacy of such devices. Therefore, extremely negative or socially fractured perceptions of CEW use may be relevant for police organizations' policy development. This study contributes to the literature by focusing on two key questions: What is the level of public support for CEW use by police? What social and demographic variables are correlated with support for police use of CEWs?

This paper is divided into five sections. The first explores scholarly debate over the use of CEWs, while the second summarizes the data and methods of the study. The third section presents the findings of the study. This is followed by the results and discussion sections. The paper concludes with policy recommendations and suggestions for future research.

Scholarly debates over CEWs

There are two schools of thought on CEW deployment among policing scholars: CEW optimists and CEW sceptics. There are certain commonalities between the two schools. Both are concerned about the inappropriate deployment of CEWs (see Terrill 2005; Paoline et al. 2012), the

dearth of independent research (Kaminski et al. 2013), and, if citizens are routinely injured or killed by CEWs, the probability of the erosion of public trust in the legitimacy of law enforcement. Both schools of thought often use reports from police departments and also overwhelmingly use quantitative techniques. However, CEW optimists largely support the use of CEWs, while CEW sceptics are generally wary of such devices. The two schools have diverging perspectives on at least four issues: what constitutes *injury* to recipients of CEW shock, the impact of CEWs on officer injuries, the risk of injury to citizens, and the analytical standpoint on the concept of *excited delirium*. These issues are discussed below.

First, at a conceptual level, a major source of disagreement between the two schools is how to define *injury*, although there seems to be a consensus about the social constructionist aspect of such a social fact. Both schools seem to recognize that there is no definitive way to measure injury. CEW optimists criticize the “overly expansive view of injuries” adopted by CEW sceptics and the inclusion in statistical analysis of “superficial injuries” (Kaminski et al. 2013: 3, 6) such as punctures. CEWs may puncture the skin of citizens, thereby generating bruises, blood, and minor pain (McDonald, Kaminski, and Smith 2009; Kaminski et al. 2013). Kaminski et al. (2013) liken such punctures to wounds generated by injections, surgical incisions, and associated blood flow. Health care professionals, they argue, do not count these as injuries unless a certain threshold is crossed. Specifically, the authors argue that the rate of minor citizen injury increases, but major injuries are reduced, when punctures are included in analysis. They argue that such minor injuries should be excluded from measurements of citizen injury. However, for the sceptical school, the “primary focus is on whether a citizen is injured, as opposed to the extent of injury” (Terrill and Paoline 2012: 154). The authors defend including burns, abrasions, and punctures in their analysis by referring to TASER International, the major producer of CEWs, which classifies such conditions as injuries. Still, sceptics criticize researchers who have “changed the rules for assessing injuries caused by CEDs” (ibid.: 179).

Second, the impact of CEW use on officer injuries is another major area of debate. CEW optimists believe that the devices have helped to reduce officer injuries. For instance, Taylor and Woods (2010) compare seven U.S. police departments that have adopted CEWs with six police services that have not. They find that police departments that do not use CEWs recorded a higher incidence of officer injuries than departments with CEWs in their arsenal. The Police Executive Research Forum (U.S.,

PERF 2009) also finds that police departments that have adopted CEWs have lower rates of officer injuries than agencies without CEWs. In addition, McDonald et al. (2009) analyse data garnered by two police departments: the Orlando Police Department (OPD) and the Austin Police Department (APD). They find that officer injuries decreased by 25% in the APD and 62% in the OPD between 1998 and 2006 after the departments had adopted CEWs. Jenkinson et al. (2006) find that using the Taser, specifically the M26 model, reduces the incidence of injuries for police officers more often than using CS spray, baton, and police dogs in England. Other studies that demonstrate reduced officer injuries after deploying CEWs include, among others, White and Ready (2009), Lin and Jones (2010), and Kaminski et al. (2013).

CEW sceptics, however, argue that CEW “usage is not a panacea for eliminating the risk of officer injuries” (Paoline et al. 2012: 131). They offer important caveats to the purported reduction in officer injuries after police agencies deploy CEWs. They find that there is a lower probability of officer injury when CEWs are used without any other weapons, but that the likelihood of officer injuries increases when CEWs are used alongside other types of force.

The third source of disagreement in the scholarly literature concerns citizen injury. CEW sceptics find a greater likelihood of citizen injury when CEWs are deployed than when they are not (Terrill and Paoline 2012: 166–67, 176). Other forms of force, such as hand tactics and using a different weapon (or both) were found to reduce the rate of citizen injury. This finding is contrary to the findings of CEW optimists (Jenkinson et al. 2006; Smith et al. 2007; White and Ready 2007; McDonald et al. 2009; U.S., PERF 2009; Kaminski et al. 2013).

Fourth, the concept of excited delirium is another point of contention. Excited delirium is not universally recognized as a medical condition, although the American College of Emergency Physicians recognized its empirical validity in 2009, but it has often been cited as a probable causal factor in several cases in which citizens have died after CEW-related encounters (Amnesty International 2007, 2008a, 2008b; see also U.S., NIJ 2008). Excited delirium refers to “a state of extreme mental and physiological excitement characterized by extreme agitation, hyperthermia, euphoria, hostility, exceptional strength and endurance without apparent fatigue” (Morrison and Saddler 2001: 46).

There are three groups of persons susceptible to “sudden and unexpected death proximal to restraint attributed to Excited Delirium” (BC,

Office of the Police Complaint Commissioner 2004: 53; emphasis added). These are people suffering from psychiatric illness(es), specifically bipolar disorders and schizophrenia; those who habitually take illicit drugs; and those in both groups. Such individuals display violent or aggressive behaviour, exhibit insensitivity to pain, and are able to actively resist several officers. They are also hyperactive in addition to being paranoid and suffering from hyperthermia (BC, Office of the Police Complaint Commissioner 2004). Individuals in a state of excited delirium have a higher risk of sudden death from CEW deployment (U.S., NIJ 2008); this is supported by studies conducted by the United Kingdom's Scientific Advisory Committee on the Medical Implications of Less-Lethal Weapons (U.K., SACMILL 2004). CEW optimists generally accept excited delirium as an empirically verifiable medical condition (Kaminski et al. 2013), while sceptics find the term problematic (Amnesty International 2007). Overall, these issues have led the two schools of thought to question the science behind each other's work (Paoline et al. 2012: 118; Kaminski et al. 2013).

In spite of these differences, several studies on both sides have considered the influence of individual or psychological variables, such as a citizen's social class, age, race, gender, drug use, and mental status, on the social distribution of CEW deployment (see Ready, White, and Fisher 2008; White and Ready 2009; Gau et al. 2010; Paoline et al. 2012). Situational factors such as suspect resistance/demeanour, intoxication, neighbourhood characteristics, numbers of officers, and presence of bystanders in police-citizen encounters have also been examined (Ready et al. 2008; Paoline et al. 2012). Overall, there seems to be a consensus that males, the mentally ill, minorities, and those on drugs living in poorer neighbourhoods are more likely to have CEWs deployed on them (Oriola et al. 2012).

However, the level of public support for the use of CEWs remains largely unexplored. To our knowledge, apart from Mandel's (2013) work on gender differences in attitudes towards the use of CEWs by police in Ontario, there has been no other quantitative study of Canadians' views on the topic. That work provides useful insight. However, western Canada has not attracted a similar focus, and the influence of other socio-demographic variables such as age, level of education, spatial location, and race/ethnicity remains unaddressed. The impact of race/ethnicity, in particular, warrants a sociological focus given the issues in the Canadian criminal justice system (Commission on Systemic Racism in the Ontario Criminal Justice System 1995; Wortley 1996; Fitzgerald and Carrington 2011; Canada, Office of the Correctional

[Investigator 2012](#); [Barrett 2013](#)). Therefore, this paper goes a step further than [Mandel \(2013\)](#). It fills a gap in the literature by examining – paying particular attention to race/ethnicity – a more comprehensive number of social and demographic correlates of support for the use of CEWs by police in Canada from data collected in a western Canadian province.

Data and methods

Data for this analysis come from the 2014 Alberta Survey. The survey, administered using computer-assisted telephone interviewing, is conducted every year by the Population Research Laboratory at the University of Alberta. It provides valuable and reliable data to various stakeholders (e.g., government, academia, the non-profit sector) and insight into the Alberta public's perspectives on "issues related to the Alberta social environment" ([University of Alberta, Population Research Laboratory 2016](#), para 3). A random sample was generated using a two-stage selection process: first, a random sample of households was selected using random-digit dialling. In each household, one eligible person was selected to participate in the interview. The final sample consisted of 1,204 respondents, with 402 sampled from Metropolitan Edmonton, 402 from Metropolitan Calgary, and 400 from other regions in Alberta. The data were weighted to be proportional to 2013 population estimates for each of these regions.

At the time of the survey (2014), Alberta led the country in having the highest number of interprovincial migrants – mainly individuals (e.g., temporary and seasonal labourers) from other provinces who were seeking economic prosperity in the province's rich energy sector ([Alberta Treasury Board 2016](#)). Additional data from the 2011 National Household Survey ([Statistics Canada 2011](#)) showed that South Asians, Chinese, and Filipinos were the largest racialized groups in the province, residing mainly in the largest cities of Calgary and Edmonton ([Alberta Treasury Board 2011](#)). Still, as reported in that survey, the largest ethnic group in Alberta consisted of those of European (non-racialized/white) or Canadian origin. Alberta's diverse ethnic population is bolstered by a highly skilled and educated workforce.

Diversity also permeates the systems used for law enforcement: policing in Alberta is carried out by a mixture of urban and rural agencies, with some overlapping services. According to the Justice and Solicitor General of Alberta, 10 bodies provide policing services in the province.

These include seven municipal services (Calgary, Edmonton, Camrose, Lacombe, Lethbridge, Medicine Hat, and Taber) and three for First Nations (Blood Tribe, Lakeshore Regional, and Tsuu T'ina Nation); the Royal Canadian Mounted Police (RCMP) provides service in numerous other locations, mainly beyond major urban centres (Alberta, Justice and Solicitor General 2016). Therefore, the policing context of the survey respondents was varied and framed by the realities of the service immediately available, in conjunction with general knowledge of law enforcement.

Survey respondents were contacted primarily on weekday evenings and on weekends, with several attempts made during the day on weekdays. If an interviewer could not establish contact on the first call, a minimum of 10 call-back attempts were made before declaring the residential phone "no contact." All survey questions were pre-tested on a smaller sample and adjustments made where necessary. The interviewing took place from 23 July 2014 to 5 September 2014; the mean length of the interview was 23 minutes. The response rate was 20.3%. A low response rate for community surveys is increasingly common: a study by McCarty et al. (2006) examined 80 telephone surveys conducted between 2000 and 2004 and found the modal response rate to be 25%. Thus, a response rate of 20.3% is expected.

Variables and measures

A scale determining the support for CEW use by police was constructed by summing four survey questions, each measuring a separate dimension of CEW use. Each question was measured using a five-point Likert scale. Table 1 summarizes these four questions and the response frequency for each of the response categories. An exploratory factor analysis indicated that all items loaded onto a single factor (Eigenvalue = 2.55) and had a Cronbach's alpha score of 0.81. These results suggest that these indicators are a reliable measure of an individual Albertan's perceptions of CEW use by police. The scale of perceptions of CEW use ranges from 0 to 16, where higher numbers indicate a higher level of support for CEW use by police in Canada. Only those who answered all four questions were included in the scale, resulting in a sample size of 1,099. The median score was 10, while the mean score was 9.65 ($s = 0.11$), with a standard deviation of 3.63.

Since we were interested in examining support for CEW use, the variable measuring the participants' perceptions of CEW use was recoded into a dichotomous variable, whereby those with a score of 12 or

Table 1: Questions used to measure support for CEW use by police in Canada

Survey Question	Response Category	% Reporting	Valid Cases (Missing)
"Less-lethal" weapons such as Tasers should be made available to all police officers in Canada	Strongly disagree	6.6	1,181 (23)
	Disagree	14.5	
	Neither disagree nor agree	14.3	
	Agree	41.1	
Tasers are a safe policing or law enforcement tool	Strongly disagree	6.4	1,165 (39)
	Disagree	16.5	
	Neither disagree nor agree	21.3	
	Agree	40.8	
The use of weapons such as Tasers reduces my level of confidence in the police	Strongly disagree	17.4	1,177 (27)
	Disagree	46.2	
	Neither disagree nor agree	14.2	
	Agree	14.6	
Overall, I am satisfied with the official explanation of injuries and casualties in Taser-related incidents in Canada	Strongly disagree	9.7	1,140 (64)
	Disagree	21.9	
	Neither disagree nor agree	20.6	
	Agree	33.4	
	Strongly agree	9.1	

higher were considered supportive of CEW use by police in Canada. Recoding the dependent variable from a scale to a dichotomous measure may raise concern insofar as it reduces a range of outcomes into just two; however, dichotomizing the variable allowed us to model general support for CEW use by police, rather than focusing on incremental changes in opinions. Similar approaches have been used when modelling perceptions of crime or the criminal justice system (Sprott and Doob 2009; Rollwagen 2014). The score of 12 out of 16 was selected because it is the point where the 75th percentile is located; further, a respondent would have to be at least moderately favourable on each of the four dimensions to achieve this score. Models in which the dependent variable is dichotomized at the 50th percentile (a score of 10) show generally similar results; however, the 75th percentile was selected because it represents a stronger measure of support. Given the

dichotomous nature of the dependent variable, logistic regression was used to model support for CEW use.

We considered the possibility that the results of our analysis might differ if we used the scale measure of support for CEW use. Specifically, we fit the data to a Poisson regression model, which is suitable for modelling count data (Long 1997). The general findings of our logistic regression persisted in the Poisson regression model, and this gave us confidence that we were not losing substantive information by dichotomizing the dependent variable. Given these similarities, and the fact that we were interested in modelling support for CEW use by police, we present the results of the logistic regression in this paper and note any differences between the results of the Poisson regression and the logistic regression.

The purpose of this research was to explore the social and demographic correlates of support in Alberta for CEW use by police in Canada. Accordingly, the following variables were included in our analysis: sex, race, age, household income, education, and rural residency. Variables such as race, age, and income had relatively few respondents in each of the categories. Therefore, to ensure confidence in the reliability of the model estimates, these variables were recoded into fewer categories. Table 2 shows the relevant summary statistics for each of these variables. In addition, the models were examined for possible interaction effects among variables, with a specific focus on the way in which age, gender, race, and income worked together to produce multiplicative effects. However, no statistically significant interaction effects were discovered.

Results

Overall, approximately 35% of participants ($n = 386$) are supportive of CEW use by police in Canada. It is also important to note that another 32% of respondents ($n = 354$) are moderately supportive, having scored between 9 and 11 out of 16 on the scale of support for CEW use. However, as hypothesized, favourable attitudes towards CEW use are distributed unevenly across the population. Specifically, cross-tabulations of support for CEW use with all independent variables show that women, racialized minorities and Aboriginal respondents, and young adults are least likely to strongly support CEW use by police (see Table 3). The differences among racialized groups appear to be the strongest: the results show that far fewer racialized minorities and

Table 2: Summary statistics of independent variables

Variable	Category	% Reporting	Valid Cases (Missing)
Sex	Male	50.7	1,204 (0)
	Female	49.3	
Race	Aboriginal	3.5	1,189 (15)
	Other racialized minority	17.2	
	Not a racialized minority	79.1	
Age	Young adult (18–24 years)	12.2	1,168 (36)
	Not a young adult (25 years+)	84.8	
Low income	Low household income (< \$30,000)	3.8	951 (253) ^a
	Not a low household income (\$30,000+)	75.2	
Education	Less than high school	6.2	1,198 (6)
	High school diploma	18.5	
	College/undergraduate degree	63.8	
	Graduate degree	11.0	
Rural residence	Lives in a rural area	22.8	1,168 (36)
	Does not live in a rural area	74.2	

^a The high number of missing cases for income is not surprising, but is somewhat problematic. In multivariate models, including this variable will greatly reduce the number of cases. However, the necessity of including income as a control variable far outweighs this limitation.

Aboriginal respondents support CEW use by police (17.6% and 17.1%, respectively), compared to non-racialized respondents (39.6%). These differences are statistically significant ($p < 0.05$). Age also appears to have an important relationship at the bivariate level of analysis: only 19.7% of younger adults (18 to 24 years old) support CEW use by police, compared to 37.5% of adults over the age of 25. Last, more moderate differences in sex are also evident because a higher percentage of men support CEW use than women. The bivariate relationships examining support for CEW use with education, rural residency, and low income status are not statistically significant.

When examining these variables in a multivariate model, the substantial effect of race remains. The odds of supporting CEW use by police are 66% lower for individuals identifying as Aboriginal or another racialized minority group, even when controlling for other relevant variables. In other words, non-racialized minorities are nearly three times more likely to support CEW use by police than racialized minorities. In

Table 3: Cross-tabulations of support for CEW use with independent variables

Variable	Category	% Supporting CEW Use	χ^2
Sex	Male	38.9	7.02*
	Female	31.2	
	Total	35.1	
Race	Aboriginal	17.1	38.40*
	Other racialized minority	17.6	
	Not a racialized minority	39.6	
	Total	34.9	
Age	Young adult (18–24 years)	19.7	17.02*
	Not a young adult (25 years+)	37.5	
	Total	35.1	
Low income	Low household income (< \$30,000)	47.6	2.38
	Not a low household income (\$30,000+)	35.9	
	Total	36.4	
Education	Less than high school	36.5	4.96
	High school diploma	36.8	
	College/undergraduate degree	36.1	
	Graduate degree	25.9	
	Total	35.2	
Rural residence	Lives in a rural area	34.4	0.05
	Does not live in a rural area	35.1	
	Total	34.9	

* $p < 0.05$.

the Poisson regression model, the relationship between identifying as Aboriginal and support for CEW use was not as strong, but remained statistically significant ($p < 0.1$). The effects of age also remain when controlling for other variables: young people are much less likely to support CEW use by police. Adults aged 25 or older are nearly three times more likely to support CEW use by police compared to young adults. In addition, women are slightly less likely than men (23%) to support CEW use. Living in a low-income household increases the odds of supporting CEW use by 96% ($p < 0.10$); however, it is important to note that in the Poisson regression model, the relationship between low income and support for CEW use by police is not

Table 4: Logistic regression predicting favourable perceptions of CEW use by police in Canada

	β	SE	Odds Ratio
Women	-0.26*	0.15	0.77
Race^a			
Aboriginal	-1.09**	0.44	0.34
Other racialized minority	-1.07**	0.24	0.34
Age (18–24)	-1.09**	0.30	0.34
Low income	0.67*	0.36	1.96
Education^b			
High school	0.06	0.36	1.06
College/undergraduate degree	-0.10	0.33	0.91
Graduate degree	-0.50	0.40	0.60
Lives in a rural area	-0.12	0.18	0.89
Constant	-0.06		

Notes: $-2 \log\text{-likelihood} = 1049.39$; % cases correctly classified = 64.3; Nagelkerke pseudo- $R^2 = 0.10$; $N = 827$.

^a Reference group consists of individuals who do not identify as Aboriginal or as a member of a racialized minority.

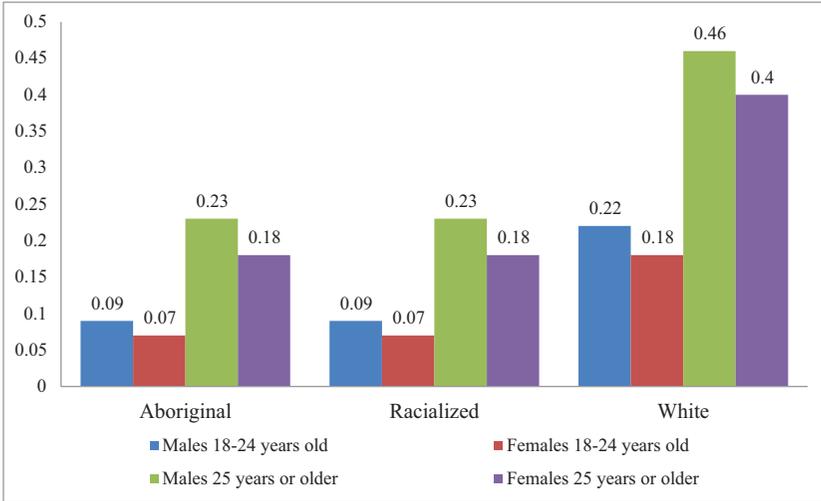
^b Reference group consists of individuals who have not completed high school.

* $p < 0.10$; ** $p < 0.05$.

statistically significant. The effects of education and rural residency are also not statistically significant.

Predicted probabilities of favourable perceptions were calculated for each combination of race, age, and sex, based on the multivariate model presented in Table 4. Figure 1 presents these predicted probabilities visually, illustrating variations in levels of support for CEW use by gender and age across categories of race. From this graph, it is evident that young women who are Aboriginal or members of another visible minority group are predicted to have a very low probability of supporting CEW use (7%) compared to their white counterparts (18%). Young men are also predicted to be much less likely to support CEW use by police, particularly young men who are racialized minorities or Aboriginal (9%) compared to younger, white men (22%). In fact, our model predicts that older white men have the highest probability of supporting CEW use compared to any other demographic, with an estimated level of support of 46%. Older white women are also predicted to have a high probability of support (40%).

Figure 1: Predicted probability of supporting CEW use by police



Discussion

Empirical studies of public opinion on the police use of force in Canada are not as extensive as in the United States (see [Abraham et al. 1981](#); [Stenning 1994](#); [Forcese 1999](#)). However, Canada’s top polling firm, Angus Reid, has conducted public opinion polls on this topic. In a 2010 poll, Angus Reid asked, “From what you have seen, heard, or read, would you support or oppose issuing a moratorium on the use of Tasers by Canada’s law enforcement agencies?” Forty-nine per cent of respondents indicated support for a moratorium ([Angus Reid 2010](#)). In a poll conducted by the Canadian Broadcasting Corporation in Toronto, 75% of residents believed that all police officers should be equipped with body-worn cameras ([CBC 2016](#)). Eighty-one per cent of survey respondents said they strongly or somewhat agreed that the equipment would make the police more accountable. While this poll is not about public opinion on police use of force, the public wanted body cameras because of their concerns about the use of force by the police. In addition, a poll on the 1997 APEC Summit found that Canadians believed that the police had used “excessive force” to disperse protesters (see [Leblanc 1998](#): A4). Forty-eight per cent of respondents said the RCMP had used “unreasonable force,” compared with 38%, “who feel pepper spraying and the pre-emptive arrests were reasonable” (*ibid.*). Research on public perceptions, attitudes, beliefs, and experiences vis-

à-vis the police is a fundamental barometer for law enforcement, which requires both public support and belief in the legitimacy of the police (see [Tyler 1990](#)).

Our study contributes to the literature on public opinion about the use of force by analysing the responses of a sample of Alberta residents about CEW use by police in Canada. Specifically, the study sought to measure the level of public support for CEWs and the social and demographic correlates of that support. The results of logistic regression indicate that race and age are key predictors of perceptions of CEW use by police in Canada. In addition, gender and income have a more moderate relationship with support for CEW use. The relationship between living in an urban area and education with support for CEW use is not statistically significant.

The results predict that individuals identifying as white are nearly three times more likely to support CEW use by police compared to those identifying as Aboriginal or members of another racialized group. [Jefferis, Butcher, and Hanley \(2011\)](#) find, in their study of perceptions of police use of force, that participants' overall assessment or perception of the police and prior contact with the police influenced how they viewed police use of force. The authors presented participants with objective video evidence about an arrest made by police and asked them to evaluate the use of force based on their predisposition towards the police. In particular, participants who expressed support for racial profiling were more likely to view police use of force as legitimate. In addition, the authors (*ibid.*: 92) argue that participants' "overall tendency to support the police" is reflected in their support for police use of force.

Much has been written about the relationship between the police and racialized communities in Canada ([Chow 1996](#); [Henry, Hastings, and Freer 1996](#); [Wortley 1996](#); [James 1998](#); [Henry and Tator 2006](#); [Fitzgerald and Carrington 2008](#); [Owusu-Bempah and Millar 2010](#); [Satzewich 2011](#); [Comack 2012](#); [Weinrath et al. 2012](#)). Evidence suggests that the relationship is fraught with mutual suspicions and hostility ([La Prairie 2002](#); [Wortley and Tanner 2003](#); [Manzo and Bailey 2005](#); [Tator and Henry 2006](#); [Wortley and McCalla 2007](#); [Wortley and Owusu-Bempah 2011](#); [Cao 2014](#)). This relationship is arguably one manifestation of a deeper division in society - unequal relations between the dominant white population and racialized minority groups ([Wortley and Tanner 2003](#); [Galabuzi 2006](#); [Henry and Tator 2006](#); [Tanovich 2006](#)). Aboriginal peoples and blacks are the most racialized groups in Canadian society ([Henry 2006](#)).

Consequently, the result of the present study on the impact of participants' race on support for CEW use by police must be analysed against the backdrop of the perception of and confidence in the police, encounters with the police, and years of accumulated history regarding the criminal justice system in general. Perception of discrimination is fundamental because it further distances such groups from mainstream society. For instance, being distrustful of police is taught as a "survival strategy" – a routine part of the socialization process – in black communities (Wortley, Hagan, and Macmillan 1997: 667). This intensifies the perceptions of injustice and the belief that the criminal justice system is unfair (Wortley et al. 1997). On the other hand, if police officers believe that racial minorities deserve greater surveillance, such assumptions may lead to more contacts with, and scrutiny of, racial minorities (Tanovich 2006).

These findings are important for several reasons. For instance, although there are studies demonstrating that the police are more likely to use force on racial minorities than whites (Alpert, Dunham, and MacDonald 2004), the evidence remains contradictory in the scholarly literature (Ho 1994). McCluskey, Terrill, and Paoline (2005) do not find support for such differential application of force on suspects (see also Gau et al. 2010). Nevertheless, "one of the obvious suspect characteristics that may influence use of force is race" (ibid.: 30). Race is often used as an indicator of socio-economic status (Bonilla-Silva 1997), and the police generally tend to deploy force on less powerful members of society (Terrill and Reisig 2003).

Participants' responses must thus be evaluated based on their environment. They are situated in a universe of experiences, including those they have gleaned from family, friends, neighbours, and the media. The saturation of the social media landscape with videos, pictures, and commentary about the excessive use of force by police has consequences for perceptions of the use of CEWs. In a "post-broadcasting age" (Li 2009), where the location of an incident has become irrelevant (Thompson 2005), the widespread availability of "tools of exposure" (Goldsmith 2010: 919), such as cellphones with increasingly sophisticated cameras, may contribute to such racialized perceptions of police use of force in general and CEWs in particular. Virtual spaces such as YouTube are full of videos and images of encounters between police use of force and civilians, such as the CEW-related Robert Dziekanski incident, the watershed moment in CEW use in Canada. The public may be particularly sensitive to deploying force on minority and underprivileged members of society. In addition, the level of (new and traditional) media coverage

given to incidents involving the police in the United States arguably has implications for the police in Canada in spite of the latter's best efforts. Canadian police generally enjoy much greater public support than U.S. police, who have historically earned a reputation for excessive use of force (Geis and Binder 1990). Nevertheless, digitized incidents from within and outside Canada may inadvertently shape public perception of the police and the appurtenances of policing; such views may be independent of actual experiences with Canadian police.

One of the missing elements in studies such as this is that while considerable time and space are devoted to analysing minority participants' views, little effort is made to explain the views of white participants, perhaps because of the tedium of overstating the obvious. Whites generally, and white males in particular, tend to support the institutions of society. Research from the United States, for instance, indicates that whites are more likely to view agencies of the criminal justice system such as the police, courts, and prisons as legitimate (Cullen et al. 1996; Barkan and Cohn 1998).⁴ The diametrical perspectives on police/policing among the public suggests "a conflict perspective on race, crime, and society" (Barkan and Cohn 1998: 744). As members of the dominant group in society, whites may be less likely to question the fairness of such institutions and disinclined to believe that police organizations, for example, require reform (see Weitzer and Tuch 2004). The overrepresentation of white males in police organizations may also have an influence on white participants' perceptions of police (Henry and Tator 2006; Tator and Henry 2006). Besides, minorities are often overrepresented in deadly-force encounters with police in Canada (see Pedicelli 1998). A U.S. study finds that although there was no statistically significant relationship between a male suspect's race and the probability of the police using a Taser on him, Hispanic/Latino suspects were two times as likely as white suspects to be tased (Gau et al. 2010). This creates a feedback loop that may contribute to the rancorous relationship between police and racialized minorities. In a Canadian study, Oriola et al. (2012) find that members of the downtrodden class, including racial minorities and the poor, are more likely to be tased than other Canadians. These factors contribute to minorities' much less positive assessment of the police and what they symbolize.

However, whites' support for police must be approached with caution. Wu, Sun, and Triplett (2009), for instance, find that to fully explicate how race and perceptions of the police in the United States are connected, the socio-economic conditions of a neighbourhood need to be factored into regression models to observe relationships of statistical

significance. In other words, the socio-economic conditions of given neighbourhoods reveal a more nuanced story of how whites and African-Americans assessed their levels of satisfaction with the police than race alone. The researchers (*ibid.*: 148) demonstrate that while African-Americans have significantly more negative attitudes than whites in “low disadvantaged neighbourhoods,” the views of whites and blacks in “high disadvantaged neighbourhoods” are similar.

This suggests that an individual’s perception of police/policing is determined by external forces and perceived community conscience, or collective identity. Collective conscience could also explain the tendency of younger people to distrust the police and view them in a less favourable light than the middle-aged or elderly. This has been observed in several studies (see [Hagan, Shedd, and Payne 2005](#); [Carr, Napolitano, and Keating 2007](#)). The present study finds that younger people have less favourable views of police use of CEWs. Participants aged 18 to 24 are predicted to hold a more negative view of CEW use in policing than individuals aged 25 and older. The results of our study are consistent with previous studies on age and support for police generally, which find that younger people are less supportive of police than older individuals ([Hagan et al. 2005](#); [O’Connor 2008](#)). This is partly a function of socialization: young people who have friends who hold a negative opinion of the police will develop negative perceptions of the police ([O’Connor 2008](#)). Attitudes towards the police become more positive as individuals grow older (*ibid.*).

In addition, the present study supports a gendered schism regarding support for CEW use in policing. Female participants are estimated to hold a less favourable view of the use of CEWs in policing than male participants. [Mandel \(2013\)](#), for instance, found gender differences in attitudes towards police use of Tasers in the aftermath of the Robert Dziekanski case. Women were significantly more opposed to Taser use, more likely than men to support reducing police officers’ use of Tasers, had a higher likelihood of blaming the police for Dziekanski’s death, and demonstrated a stronger emotional response to the incident (*ibid.*). The findings of the present study are consistent with the available evidence on empathy ([Han, Fan, and Mao 2008](#)) in assessing fair and unfair treatment ([Kluwer, Tumewu, and Van den Bos 2009](#)) and a tendency to support the most vulnerable ([Sims, Chin, and Yordon 2007](#); [Mandel 2013](#)) in contentious circumstances.

Our study does not find any statistically significant relationship between education and CEW support, although education may play a

role in gender effects on CEW support. Results from Alberta's 2011 National Household Survey show that, across all levels of educational attainment (except for trade certificates and qualifications), Aboriginal women's educational achievement far exceeds that of their male counterparts. For example, 27.1% of Aboriginal women aged 35 to 44 and 21.4% aged 55 to 64 held college diplomas, compared to 18.3% and 14.1% of Aboriginal men in the same age groups ([Alberta Treasury Board 2011](#): 6). Further, 13.6% of Aboriginal women aged 35 to 44 and 10.2% aged 55 to 64, compared to 7.6% of Aboriginal men in both age categories, had attained university degrees (*ibid.*). A study of Aboriginal peoples in Canada ([Cao 2014](#)) indicates that educational attainment negatively affects respondents' perceptions of the police. More pointedly, "Education [was] negatively related to confidence in the police with the less educated having higher levels of confidence" (*ibid.*: 513).

Such results underscore two theoretically contingent factors related to how class may frame the understanding of police and policing among Aboriginal peoples. First, as [Cao's \(2014\)](#) study shows, as educational attainment rises, so does the negative perception of police. In this regard, it could be that this trend features the feedback of more Aboriginal women than men. Second, and interconnected with Aboriginal women's minority group status in Canada, the negative trend in police confidence, if plausibly explained more by Aboriginal women's assessments than those of their male counterparts, could indicate the long-lasting implications of historical injustices committed against Aboriginal women at the hands of the criminal justice system. The long list of missing or murdered Aboriginal women is instructive. In 2014, the RCMP released a report stating that 1,181 reports of such women had been recorded (164 missing and 1,017 homicides) and that, of these, 225 had not been resolved ([RCMP 2014](#)). It is possible that Aboriginal women's responses to questions about CEW use by police are tempered by such conditions due to their gendered subjectivity and other identities as mothers, sisters, daughters, aunts, guardians, and so on, as well as victims - usually at the hands of males.

Evidence that higher educational attainment results in less confidence in the police was also observed by [Weitzer and Tuch \(1999, 2002\)](#) and noted by [Wu \(2010\)](#). [Brown and Benedict \(2002\)](#) argue that the relationship could be explained by the connection between liberalism and higher education. Variables like political affiliation, university degree type (Arts, Science, Business, etc.), and personal ideology as markers of socio-economic status need to be considered as part of the complex puzzle of understanding attitudes towards the police. Evidence

suggests that “better-educated persons are more likely to hold liberal attitudes favouring civil liberties and, as a result, view the police less favourably than those with lower levels of education (ibid.: 565).

While [Brown and Benedict’s \(2002\)](#) supposition here may be evidenced in an appropriate study, it is crucial to recognize that race, gender, ethnicity, and age could, both independently and collectively, alter staunch, soft liberal, or other political inclinations, regardless of university degree type or major. This phenomenon re-invokes the theoretical underpinnings of intersectional analyses in providing an enhanced understanding of any social phenomenon. It is worth reiterating that our study does not find any statistically significant relationship between education and support for the use of CEWs by police. However, we strongly believe that more research, particularly within the Canadian context, is required in this area.

Conclusion

A national study on the use of force by Canadian police and support for CEW use is long overdue. Future studies may consider a nationally representative sample; this study used data collected in Alberta. Expanded CEW use necessitates such a study. Questions may be included to probe the objections of those who do not support CEWs; regional comparisons may also be useful. In addition, a survey with a larger sample size will provide the statistical power necessary to examine possible interaction effects among race, gender, and age. Exploring interaction effects would provide insight into how various dimensions of social identity work together to shape perceptions of CEW use by the police. In other words, both the technical aspects and public perspectives on CEW use are crucial. Similarly, future studies may consider public attitudes towards police in Canada. For instance, focus groups or in-depth interviews with members of the public could delve deeper into the knowledge base and assessment of risk that individuals navigate and negotiate every day. Such feedback from the public would be beneficial and augment this study by better addressing what [Tulloch and Lupton \(2002: 366\)](#) term the “buzz of risk.” In other words, citizens of multiple backgrounds and subjectivities may well already have measured, reflective, and informed opinions on the efficacy of policing and the tools (e.g., CEWs) they deploy to do their work. Moreover, these methods may provide insight into the point of view (i.e., lived experiences) that individuals ascribe to when navigating the familiar/unfamiliar and the risky/banal consequences of life.

Such points of view are largely on display during the widely employed public consultation process associated with policy change, implementation, and oversight (see [680 News 2013](#)).

In conclusion, although police have a “rule-like, social fact quality” ([Zucker 1987](#): 444) and are perceived as a seamless “part of the natural order of things” ([Crank and Langworthy 1992](#): 360), their activities, such as using CEWs, do not appear to enjoy universal support. The lower level of support for CEW among women, younger people, and ethnic minorities suggests elements of mistrust. This may be connected with concerns about excessive use of force ([Skolnick and Fyfe 1994](#); [Pedicelli 1998](#)). While Canadian police generally enjoy tremendous support from the public, perceptions are difficult to overcome, whether or not they have a basis in reality. This calls for greater engagement with these specific groups in society.

Notes

- 1 This study is part of a broader research project called Less-Lethal Force Options in Canada: Taser Adoption by the Police and Its Consequences, supported by a Social Sciences and Humanities Research Council Insight Development Grant (430-2012-0545). The authors wish to acknowledge the comments and suggestions of three anonymous reviewers and the editor of the *CJCCJ*. We also extend a huge thank you to the staff of the Population Research Lab (PRL), Department of Sociology, University of Alberta. The PRL collected the data for this study as part of the 2014 Alberta Survey.
- 2 Conducted energy weapons (CEW) are also referred to as neuromuscular incapacitating devices, electro-muscular disruption technology, and conductive energy devices ([Levine et al. 2007](#)). The leading CEW product is the Taser, manufactured by Taser International.
- 3 Devices produced by Taser International, particularly the TASER X26, are the market leaders among CEW and the most widely used in Canada. Therefore, debates about CEW in Canada focus on Tasers.
- 4 The U.S. and Canadian contexts have important similarities and differences in ethno-racial dynamics and the treatment of minorities in the criminal justice process. There are historical examples of racial exclusion in both the United States and Canada; e.g., both countries share racialized histories of trans-Atlantic slavery; discrimination against Japanese, Chinese, and other Asian minorities in the 19th and 20th centuries; and the colonization of

Aboriginals (Grabb and Curtis 2005). Regarding ethno-racial relations in the two countries, the authors (*ibid.*: 215) conclude in their comparative analysis, “We see divergences between the two societies that are sufficiently great to make us disagree with the assertion that there are no meaningful differences between Canada and the United States on the question of social inclusion and tolerance of ethnic and other minorities. However, . . . we do believe that most claims of truly large differences between the two peoples are almost certainly illusions.” Findings from the United States apply to the Canadian context only when we account for the important differences between the two countries and their criminal justice processes. We are grateful to one of the anonymous reviewers for pointing out the critical divergences between the United States and Canada vis-à-vis the texture of ethno-racial relations in the course of maintaining order.

References

680 News

2013 Torontonians weigh in on Police use of Tasers. 24 September. <http://int-www.680news.com/2013/09/24/torontonians-weigh-in-on-police-use-of-tasers/>.

Abraham, John D., John C. Field, Richard W. Harding, and Steven Skurk

1981 Police use of lethal force: A Toronto perspective. *Osgoode Hall Law Journal* 19 (2): 199–236.

Alberta, Justice and Solicitor General

2016 Police Services. https://www.solgps.alberta.ca/programs_and_services/public_security/law_enforcement_oversight/Pages/PoliceServices.aspx.

Alberta Treasury Board

2011 National household survey. <http://www.finance.alberta.ca/aboutalberta/national-household-survey/2011/2011-national-household-survey-release1.pdf>.

Alberta Treasury Board

2016 Quarterly population report: Fourth quarter 2014. http://www.finance.alberta.ca/aboutalberta/population_reports/2014-2015/2014-4thQuarter.pdf.

Alpert, Geoffrey P., Roger G. Dunham, and John M. MacDonald

2004 Interactive police-citizen encounters that result in force. *Police Quarterly* 7 (4): 475–88. <http://dx.doi.org/10.1177/1098611103260507>.

Amnesty International

2007 Canada: Inappropriate and excessive use of Tasers. Accessed 12 December 2008. <http://www.amnesty.org/en/library/asset/AMR20/002/2007/en/6008826e-d38e-11dd-a329-2f46302a8cc6/amr200022007en.pdf>.

Amnesty International

2008a USA: Safety of Tasers questioned as death toll hits 334 mark. Accessed 25 March 2009. <https://www.amnesty.org/en/press-releases/2008/12/usa-safety-tasers-questioned-death-toll-hits-334-mark-20081216/>.

Amnesty International

2008b "Less than lethal?" The use of stun weapons in US law enforcement. Accessed 25 March 2009. https://www.amnesty.ch/de/themen/weitere/taser/dok/2008/taser-bericht/Taser-Report-Less-than-lethal_USA.pdf.

Amnesty International

2012 Amnesty International urges stricter limits on police Taser use as U.S. death toll reaches 500. Accessed 7 July 2013. <http://www.amnestyusa.org/news/press-releases/amnesty-international-urges-stricter-limits-on-police-taser-use-as-us-death-toll-reaches-500>.

Angus Reid

2010 Canadians back moratorium on Taser use. http://angusreid.org/canadians_back_moratorium_on_taser_use/.

Balko, Radley

2013 Rise of the Warrior Cop: The Militarization of America's Police Forces. New York: PublicAffairs.

Barkan, S.E. and S.F. Cohn

1998 Racial prejudice and support by whites for police use of force: A research note. *Justice Quarterly* 15 (4): 743–53. <http://dx.doi.org/10.1080/07418829800093971>.

Barrett, Jessica

2013 Covert racism behind increased numbers of Aboriginals and other visible minorities in prisons, watchdog says. *National Post*, 26 November. Accessed 4 June 2014. <http://news.nationalpost.com/2013/11/26/covert-racism-behind-increased-numbers-of-aboriginals-and-other-visible-minorities-in-prisons-watchdog-says/>.

BC (British Columbia), Office of the Police Complaint Commissioner

- 2004 Taser technology review & interim recommendations. Accessed 29 August 2009. <http://www.opcc.bc.ca/Reports/2004/Interim%20Taser%20Report%20and%20Recommendations.pdf>.

Bonilla-Silva, Eduardo

- 1997 Rethinking racism: Toward a structural interpretation. *American Sociological Review* 62 (3): 465–80. <http://dx.doi.org/10.2307/2657316>.

Braidwood, Thomas

- 2009 Why: The Robert Dziekanski tragedy. Victoria: Distribution Centre.

Braidwood, Thomas

- 2010 Restoring public confidence: Restricting the use of conducted energy weapons in British Columbia. Victoria: Distribution Centre.

Brown, Ben and Wm. Reed Benedict

- 2002 Perceptions of the police: Past findings, methodological issues, conceptual issues and policy implications. *Policing: An International Journal of Police Strategies & Management* 25 (3): 543–80. <http://dx.doi.org/10.1108/13639510210437032>.

Canada, Office of the Correctional Investigator

- 2012 Spirit matters: Aboriginal people and the Corrections and Conditional Release Act. Catalogue no. PS104-6/2013E-PDF. Accessed 2 June 2014. <http://www.oci-bec.gc.ca/cnt/rpt/pdf/oth-aut/oth-aut20121022-eng.pdf>.

Cao, Liqun

- 2014 Aboriginal people and confidence in the police. *Canadian Journal of Criminology and Criminal Justice* 56 (5): 499–525. <http://dx.doi.org/10.3138/CJCCJ.2013.E05>.

Carr, Patrick J., Laura Napolitano, and Jessica Keating

- 2007 “We never call the cops and here is why”: A qualitative examination of legal cynicism in three Philadelphia neighborhoods. *Criminology* 45 (2): 445–80. <http://dx.doi.org/10.1111/j.1745-9125.2007.00084.x>.

CBC (Canadian Broadcasting Corporation)

- 2009 RCMP softened Taser-use restrictions: New research suggests more shots raise likelihood of causing death, Accessed 27 March 2009. <http://www.cbc.ca/news/canada/rcmp-softened-taser-use-restrictions-1.821514>.

CBC

- 2013 Taser, other stun gun deaths “extremely rare.” Accessed 23 December 2014. <http://www.cbc.ca/news/canada/taser-other-stun-gun-deaths-extremely-rare-1.2054290>.

CBC

- 2016 75% of city residents agree Toronto police should wear body cameras: Poll. <http://www.cbc.ca/news/canada/toronto/police-poll-cameras-1.3432508>.

Chow, Henry P.H.

- 1996 The Chinese community leaders’ perceptions of the criminal justice system. *Canadian Journal of Criminology and Criminal Justice* 38 (4): 477–84.

Comack, Elizabeth

- 2012 *Racialized Policing: Aboriginal People’s Encounters with the Police*. Halifax: Fernwood Publishing.

Commission on Systemic Racism in the Ontario Criminal Justice System.

- 1995 Report of the Commission on systemic racism in the Ontario criminal justice system. Toronto: Queen’s Printer for Ontario.

Crank, John P., and Robert Langworthy

- 1992 An institutional perspective of policing. *Journal of Criminal Law & Criminology* 83 (2): 338–363. <http://dx.doi.org/10.2307/1143860>.

Cullen, Francis T., Liqun Cao, James Frank, Robert H. Langworthy, Sandra Lee Browning, Renee Kopache, and Thomas J. Stevenson

- 1996 “Stop or I’ll shoot”: Racial differences in support for police use of deadly force. *American Behavioral Scientist* 39 (4): 449–60. <http://dx.doi.org/10.1177/0002764296039004008>.

Dymond, Abi

- 2014 “The flaw in the Taser debate is the Taser debate”: What do we know about Taser in the UK, and how significant are the gaps in our knowledge? *Policing: An International Journal of Police Strategies & Management* 8 (2): 1–9. <http://dx.doi.org/10.1093/police/pau011>.

Expert Panel on the Medical and Physiological Impacts of Conducted Energy Weapons

- 2013 *The health effects of conducted energy weapons*. Ottawa: Council of Canadian Academies and the Canadian Academy of Health Sciences. Accessed 26 December 2014. <http://www.cahs-acss.ca/wp-content/>

uploads/2013/10/CofCA_13-151_CEW_Book_E_New-Font_WEB_v2.pdf.

Fiske, John

1996 *Media Matters: Race and Gender in U.S. Politics*. Minneapolis: University of Minnesota Press.

Fitzgerald, Robin T. and Peter J. Carrington

2008 The neighbourhood context of urban Aboriginal crime. *Canadian Journal of Criminology and Criminal Justice* 50 (5): 523-57. <http://dx.doi.org/10.3138/cjccj.50.5.523>.

Fitzgerald, Robin T. and Peter J. Carrington

2011 Disproportionate minority contact in Canada: Police and visible minority youth. *Canadian Journal of Criminology and Criminal Justice* 53 (4): 449-86. <http://dx.doi.org/10.3138/cjccj.53.4.449>.

Forcese, Dennis

1999 *Policing Canadian Society*. 2nd ed. Toronto: Prentice-Hall.

Galabuzi, Grace-Edward

2006 *Canada's Economic Apartheid: The Social Exclusion of Racialized Groups in the New Century*. Toronto: Canadian Scholars Press.

Gau, Jacinta, Clayton Mosher, and Travis C. Pratt

2010 An inquiry into the impact of suspect race on police use of Tasers. *Police Quarterly* 13 (1): 27-48. <http://dx.doi.org/10.1177/1098611109357332>.

Geis, Gilvert and Arnold Binder

1990 Non-lethal weapons: The potential and the pitfalls. *Journal of Contemporary Criminal Justice* 6 (1): 1-7. <http://dx.doi.org/10.1177/104398629000600102>.

Goldsmith, Andrew J.

2010 Policing's new visibility. *British Journal of Criminology* 50 (5): 914-34. <http://dx.doi.org/10.1093/bjc/azq033>.

Grabb, Edward, and James Curtis

2005 *Regions Apart: The Four Societies of Canada and the United States*. Toronto: Oxford University Press.

Hagan, John, Carla Shedd, and Monique R. Payne

2005 Race, ethnicity, and youth perceptions of criminal Injustice. *American*

Sociological Review 70 (3): 381–407. <http://dx.doi.org/10.1177/000312240507000302>.

Hall, C.

- 2009 Public risk from Tasers: Unacceptably high or low enough to accept? *California Journal of Emergency Medicine / California Chapter of the American Academy of Emergency Medicine* 11 (1): 84–6.

Han, Shihui, Yan Fan, and Lihua Mao

- 2008 Gender difference in empathy for pain: An electrophysiological investigation. *Brain Research* 1196: 85–93. <http://dx.doi.org/10.1016/j.brainres.2007.12.062>.

Henry, Frances

- 2006 A response to Hier and Walby's article: Competing analytical paradigms in the sociological study of racism in Canada. *Canadian Ethnic Studies* 38 (2): 169–73.

Henry, Frances, Patricia Hastings, and Brian Freer

- 1996 Perceptions of race and crime in Ontario: Empirical evidence from Toronto and the Durham Region. *Canadian Journal of Criminology and Criminal Justice* 38 (4): 469–76.

Henry, Frances and Carol Tator

- 2006 *The Colour of Democracy: Racism in Canadian Society*. 3rd ed. Toronto: Thomson-Nelson.

Ho, Taiping

- 1994 Individual and situational determinants of the use of deadly force: A simulation. *American Journal of Criminal Justice* 18 (1): 41–60. <http://dx.doi.org/10.1007/BF02887638>.

James, Carl

- 1998 Up to no good: Black on the streets and encountering police. In *Racism and Social Inequality in Canada: Concepts, Controversies and Strategies of Resistance*, ed. Vic Satzewich, 157–76. Toronto: Thompson Educational Publishing.

Jefferis, Eric, Frederick Butcher, and Dena Hanley

- 2011 Measuring perceptions of police use of force. *Police Practice and Research* 12 (1): 81–96. <http://dx.doi.org/10.1080/15614263.2010.497656>.

Jenkinson, Emma, Clare Neeson, and Anthony Bleetman

- 2006 The relative risk of police use-of-force options: Evaluating the potential for deployment of electric weaponry. *Journal of Clinical Forensic Medicine* 13 (5): 229–41. <http://dx.doi.org/10.1016/j.jcfm.2005.11.006>.

Kaminski, Robert J., Robin S. Engel, Jeff Rojek, Michael R. Smith, and Geoffrey Alpert

- 2013 A quantum of force: The consequences of counting routine conducted energy weapon punctures as injuries. *Justice Quarterly* 32 (4): 598–625. [10.1080/07418825.2013.788729](https://doi.org/10.1080/07418825.2013.788729).

Kluwer, E.S., M. Tumewu, and K. Van den Bos.

- 2009 Men's and women's reactions to fair and unfair treatment in relationship conflict. *Personal Relationships* 16 (4): 455–74. <http://dx.doi.org/10.1111/j.1475-6811.2009.01234.x>.

La Prairie, Carol

- 2002 Aboriginal over-representation in the criminal justice system: A tale of nine cities. *Canadian Journal of Criminology and Criminal Justice* 44 (2): 181–208.

Leblanc, Daniel

- 1998 Many feel use of force excessive, poll reveals. *Globe and Mail*, 21 October: A4.

Levine, Saul D., Christian M. Sloane, Theodore C. Chan, James V. Dunford, and Gary M. Vilke.

- 2007 Cardiac Monitoring of Human Subjects Exposed to the Taser®. *Journal of Emergency Medicine* 33 (2): 113–17. <http://dx.doi.org/10.1016/j.jemermed.2007.02.018>.

Li, Henry

- 2009 The turn to the self: From “Big Character Posters” to YouTube videos. *Chinese Journal of Communication* 2 (1): 50–60. <http://dx.doi.org/10.1080/17544750802639077>.

Lin, Yu-Sheng and Tonisha R. Jones

- 2010 Electronic control devices and use of force outcomes: Incidence of severity of use of force and frequency of injuries to arrestees and police officers. *Policing: An International Journal of Police Strategies & Management* 33 (1): 152–78. <http://dx.doi.org/10.1108/13639511011020647>.

Long, Scott J.

- 1997 Regression Models for Categorical and Limited Dependent Variables. Thousand Oaks, CA: Sage.

Mandel, David

- 2013 Gender differences in attitudes toward police use of Tasers following the Dziekanski case. *Analyses of Social Issues and Public Policy* 13 (1): 310–26. <http://dx.doi.org/10.1111/asap.12022>.

Manzo, John F. and Monetta M. Bailey

- 2005 On the assimilation of racial stereotypes among black Canadian young offenders. *Canadian Review of Sociology and Anthropology* 42 (3): 283–300. <http://dx.doi.org/10.1111/j.1755-618X.2005.tb00841.x>.

McCarty, Christopher, Mark House, Jeffrey Harman, and Scott Richards

- 2006 Effort in phone survey response rates: The effects of vendor and client-controlled factors. *Field Methods* 18 (2): 172–88. <http://dx.doi.org/10.1177/1525822X05282259>.

McCluskey, J., W. Terrill, and E. Paoline, III

- 2005 Peer group aggressiveness and the use of coercion in police suspect encounters. *Police Practice and Research* 6 (1): 19–37. <http://dx.doi.org/10.1080/1561426050046954>.

McDonald, John M., Robert J. Kaminski, and Michael R. Smith

- 2009 The effect of less-lethal weapons on injuries in police use of force events. *American Journal of Public Health* 99: 2269–74.

Morrison, Audrey and David Saddler

- 2001 Death of a psychiatric patient during physical restraint: Excited delirium – a case report. *Medicine, Science, and the Law* 41 (1): 46–50.

O'Connor, Christopher D.

- 2008 Citizen attitudes toward the police in Canada. *Policing: An International Journal of Police Strategies & Management* 31 (4): 578–95. <http://dx.doi.org/10.1108/13639510810910571>.

Oriola, Temitope, Nicole Neverson, and Charles T. Adeyanju

- 2012 “They should have just taken a gun and shot my son”: Taser deployment and the downtrodden in Canada. *Social Identities* 18 (1): 65–83. <http://dx.doi.org/10.1080/13504630.2012.629514>.

Owusu-Bempah, Akwasi and Paul Millar

- 2010 Revisiting the collection of “justice statistics by race” in Canada.

Canadian Journal of Law and Society 25 (1): 97-104. <http://dx.doi.org/10.1017/S0829320100010231>.

Paoline, Eugene A., III, William Terrill, and Jason R. Ingram

2012 Police use of force and officer injuries: Comparing conducted energy devices (CEDs) to hands-and-weapons based tactics. *Justice Quarterly* 15: 115-36.

Pedicelli, Gabriella

1998 *When Police Kill: Police Use of Force in Montreal and Toronto*. Montreal: Véhicule Press.

Radwanski, Adam

2013 Ontario to expand police access to Tasers. *Globe and Mail*, 27 August. Accessed 30 March 2015. <http://www.theglobeandmail.com/news/politics/ontario-to-expand-police-access-to-tasers/article13964898/>.

RCMP (Royal Canadian Mounted Police)

2014 Missing and murdered Aboriginal women: A national operational overview. Accessed 22 February 2015. <http://www.rcmp-grc.gc.ca/pubs/mmaw-faapd-eng.pdf>.

Ready, Justin, Michael D. White, and Christopher Fisher

2008 Shock value: A comparative analysis of news reports and official police records on Taser deployments. *Policing: An International Journal of Police Strategies & Management* 31 (1): 148-170. <http://dx.doi.org/10.1108/13639510810852620>.

Rollwagen, Heather

2014 The relationship between dwelling type and fear of crime. *Environment & Behavior*, 1 July. Advance online edition.

Ryan, Emma

2008 Shocked and stunned: A consideration of the implications of Tasers in Australia. *Current issues in Criminology* 20 (2): 293-320.

Satzewich, Vic

2011 *Racism in Canada*. Don Mills, Ontario: Oxford University Press.

Sims, Valerie K., Matthew G. Chin, and Ryan E. Yordon

2007 Don't be cruel: Assessing beliefs about punishments for crimes against animals. *Anthrozoos* 20 (3): 251-59. <http://dx.doi.org/10.2752/089279307X224791>.

Skolnick, Jerome and James Fyfe

- 1994 Above the law: Police and the use of excessive force. New York: Free Press.

Smith, Michael R., Robert J. Kaminski, Jeffrey Rojek, Geoffrey P. Alpert, and Jason Mathis

- 2007 The impact of conducted energy devices and other types of force and resistance on officer and suspect injuries. *Policing: An International Journal of Police Strategies & Management* 30 (3): 423–46.

Sprott, Jane B. and Anthony N. Doob

- 2009 The effect of urban neighborhood disorder on evaluations of the police and courts. *Crime and Delinquency* 55 (3): 339–62. <http://dx.doi.org/10.1177/0011128707306689>.

Statistics Canada

- 2011 National Household Survey: The Educational Attainment of Aboriginal Peoples in Canada. http://publications.gc.ca/collections/collection_2013/statcan/CS99-012-2011-3-3-eng.pdf.

Stenning, Phillip C.

- 1994 Police use of force and violence against members of visible minority groups in Canada. Ottawa: Centre for Police Race Relations.

Tanovich, David M.

- 2006 The Colour of Justice: Policing Race in Canada. Toronto: Irvin Law.

Tator, Carol and Frances Henry

- 2006 Racial Profiling in Canada: Challenging the Myth of “A Few Bad Apples.” Toronto: University of Toronto Press.

Taylor, Bruce and Daniel J. Woods

- 2010 Injuries to officers and suspects in police use-of-force cases: A quasi-experimental evaluation. *Police Quarterly* 13 (3): 260–89.

Terrill, William

- 2005 Police use of force: A transactional approach. *Justice Quarterly* 22 (1): 107–38. <http://dx.doi.org/10.1080/0741882042000333663>.

Terrill, William and Eugene A. Paoline, III

- 2012 Conducted energy devices (CEDs) and citizen injuries: The shocking empirical reality. *Justice Quarterly* 29 (2): 153–82. <http://dx.doi.org/10.1080/07418825.2010.549834>.

Terrill, William and Michael D. Reisig

- 2003 Neighbourhood context and police use of force. *Journal of Research in Crime and Delinquency* 40 (3): 291–321. <http://dx.doi.org/10.1177/0022427803253800>.

Thompson, John B.

- 2005 The new visibility. *Theory, Culture & Society* 22 (6): 31–51. <http://dx.doi.org/10.1177/0263276405059413>.

Tufts, Jennifer

- 2000 Public attitudes toward the criminal justice system. *Juristat* 20 (12). Ottawa: Statistics Canada. (Catalogue no. 85–002-XIE).

Tulloch, John and Deborah Lupton

- 2002 Consuming risk, consuming science: The case of GM foods. *Journal of Consumer Culture* 2 (3): 363–83. <http://dx.doi.org/10.1177/146954050200200304>.

Tyler, Tom R.

- 1990 *Why People Obey the Law*. New Haven, CT: Yale University Press.

U.K., SACMILL (Scientific Advisory Committee on the Medical Implications of Less-Lethal Weapons)

- 2004 Second DOMILL Statement on the Medical Implications of the Use of the M26 Advanced Taser. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443812/DOMILL04_20040727_TASER02.pdf.

University of Alberta, Population Research Laboratory

- 2016 Alberta Survey. Accessed 30 April 2016. <http://www.prl.ualberta.ca/en/AlbertaSurvey.aspx>.

U.S., NIJ (National Institute of Justice)

- 2008 Study of Deaths Following Electro Muscular Disruption: Interim Report. (Catalogue no. NCJ 222981). Accessed 25 March 2009. <http://www.ncjrs.gov/pdffiles1/nij/222981.pdf>.

U.S., PERF (Police Executive Research Forum)

- 2009 Comparing Safety Outcomes in Police Use-of-Force Cases for Law Enforcement Agencies That Have Deployed Conducted Energy Devices and a Matched Comparison Group That Have Not: A Quasi-experimental Evaluation. Report submitted to the National Institute of Justice. Accessed 21 October 2011. <http://www.policeforum.org/>

[assets/docs/Free_Online_Documents/Use_of_Force/conducted%20energy%20devices%20matched%20agency%20study%202009.pdf](#).

Weinrath, Michael, Janna Young, and Steven Kohm

2012 Attitudes towards the criminal justice system in a high crime Canadian community. *Canadian Journal of Urban Research* 21 (2): 112–31.

Weitzer, Ronald and Steven A. Tuch

1999 Race, class, and perceptions of discrimination by the police. *Crime and Delinquency* 45 (4): 494–507. <http://dx.doi.org/10.1177/0011128799045004006>.

Weitzer, Ronald and Steven A. Tuch

2002 Perceptions of racial profiling: Race, class, and personal experience. *Criminology* 40 (2): 435–56. <http://dx.doi.org/10.1111/j.1745-9125.2002.tb00962.x>.

Weitzer, Ronald and Steven A. Tuch

2004 Reforming the police: Racial differences in public support for change. *Criminology* 42 (2): 391–416. <http://dx.doi.org/10.1111/j.1745-9125.2004.tb00524.x>.

White, Michael D. and Justin Ready

2007 The Taser as a less lethal force alternative: Findings on use and effectiveness in a large metropolitan police agency. *Police Quarterly* 10 (2): 170–91. <http://dx.doi.org/10.1177/1098611106288915>.

White, Michael D. and Justin Ready

2009 Examining fatal and nonfatal incidents involving the Taser: Identifying predictors of suspect death reported in the media. *Criminology & Public Policy* 8 (4): 865–91. <http://dx.doi.org/10.1111/j.1745-9133.2009.00600.x>.

Williams, Howard E.

2012 The Braidwood Commission reports on Taser use in Canada: An evidence-based policy review. *Policing: An International Journal of Police Strategies & Management* 35 (2): 356–81. <http://dx.doi.org/10.1108/13639511211230101>.

Wortley, Scot

1996 Justice for all? Race and perceptions of bias in the Ontario criminal justice system: A Toronto survey. *Canadian Journal of Criminology and Criminal Justice* 38 (4): 439–67.

Wortley, Scot, John Hagan, and Ross Macmillan

- 1997 Just Des(s)erts? The Racial Polarization of Perceptions of Criminal Injustice. *Law & Society Review* 31 (4): 637–76. <http://dx.doi.org/10.2307/3053983>.

Wortley, Scot and Andrea McCalla

- 2007 Racial discrimination in the Ontario criminal justice system. In *Criminal Justice in Canada: A Reader*, 3rd ed., ed. Michelle G. Grossman and Julian V. Roberts, 187–206. Toronto: Nelson.

Wortley, Scot and Akwasi Owusu-Bempah

- 2011 The usual suspects: Police stop and search practices in Canada. *Policing and Society* 21 (4): 395–407. <http://dx.doi.org/10.1080/10439463.2011.610198>.

Wortley, Scot and Julian Tanner

- 2003 Data, denials, and confusion: The racial profiling debate in Toronto. *Canadian Journal of Criminology and Criminal Justice* 45 (3): 367–89. <http://dx.doi.org/10.3138/cjccj.45.3.367>.

Wu, Yuning

- 2010 Immigrants' perceptions of the police. *Sociology Compass* 4 (11): 924–35. <http://dx.doi.org/10.1111/j.1751-9020.2010.00332.x>.

Wu, Yuning, Ivan Y. Sun, and Ruth A. Triplett

- 2009 Race, class or neighborhood context: Which matters more in measuring satisfaction with police? *Justice Quarterly* 26 (1): 125–56. <http://dx.doi.org/10.1080/07418820802119950>.

Zucker, Lynne

- 1987 Institutional theories of organization. *Annual Review of Sociology* 13 (1): 443–64. <http://dx.doi.org/10.1146/annurev.so.13.080187.002303>.

Copyright of Canadian Journal of Criminology & Criminal Justice is the property of University of Toronto Press and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.