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Do Canadian and U.S. American Handgun Owners Differ?

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This study of male Canadian ($n = 475$) and U.S. ($n = 425$) handgun owners addresses 2 questions: (a) Are there differences in gun-related motivation and behaviour patterns; and (b) does the Model of Defensive Gun Ownership of Stroebe, Leander, and Kruglanski (2017) fit data of Canadian handgun gun owners? U.S. and Canadian gun cultures are supposed to be different: Unlike most U.S. gun owners, Canadian gun owners are not assumed to purchase guns for self-defense because they trust their government to protect them against crime. Although Canadian and U.S. handgun owners differed in their gun-related motivation and behaviour patterns, these differences were less substantial than expected: Mean levels of trust in law enforcement of Canadian and U.S. handgun owners did not differ. Furthermore, half of Canadian gun owners considered self-defense to be an important reason for gun ownership. Finally, a structural equation model that had fit the U.S. data of Stroebe et al. (2017) could also be applied to the Canadian data. Given that 30% of all Canadian handguns were purchased between 2012 and 2017, which is when shootings became more common in Canada's large cities, we speculate that recent events may have reduced differences that might have existed between Canadian and American handgun owners.

Public Significance Statement

We assessed differences between Canadian and U.S. handgun owners in their gun-related motives and behaviour patterns. Unlike U.S. Americans, Canadians are assumed to trust their government for their security and to not buy their handguns for self-protection. It was thus doubtful that Stroebe, Leander, and Kruglanski's (2017) threat-based Model of Defensive Gun Ownership, developed to explain U.S. gun ownership would fit data of Canadian gun owners. Contrary to expectations, half of Canadian gun owners considered self-defense to be an important reason for gun ownership and the Model of Defensive Gun Ownership showed good fit for the Canadian sample.

Keywords: belief in a dangerous world, gun ownership motivation, model of defensive gun ownership, trust in government, masculinity

Supplemental materials: <http://dx.doi.org/10.1037/cbs0000243.supp>

The present study addresses two questions, namely whether there are differences in gun-related motivation and behaviour patterns between Canadian and U.S. handgun owners and whether the Model of Defensive Gun Ownership of Stroebe et al. (2017)—developed to explain why the majority of U.S. gun owners report self-defense as the main reason for owning their guns—can be applied to Canadian gun owners. In the first section of this article,

we describe differences between Canada and the United States in gun laws and gun culture. In the second section, we describe the Model of Defensive Gun Ownership and discuss how the assumed differences between Canadian and U.S. owners would influence motives for owning a gun and whether a model that fits U.S. handgun owners can also account for Canadian handgun ownership. Our empirical section consists of two parts. In the first part—a descriptive section—we use a U.S. comparison sample to assess the extent to which Canadians and U.S. Americans differ in terms of relevant predictor variables. In the second part, we apply structural equation modeling (SEM) to the Canadian sample to test whether the Model of Defensive Gun Ownership can be used to account for Canadian gun ownership.

Gun Laws and Gun Cultures: A Canadian and U.S. American Comparison

Unlike Canadians, U.S. Americans have constitutional rights to own guns and use them for self-defense. The so-called stand-your-ground laws—adopted by half of U.S. states—allow U.S. gun

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owners to use lethal force against a perceived threat, even if escape would have been an option (e.g., Humphreys, Gasparrini, & Wiebe, 2017; Morral & Smart, 2019; NCSL, 2018). Such laws do not exist in Canada (Atlas, 2019). It is also much easier for U.S. Americans to legally obtain a gun. In the United States, possession of handguns and semiautomatic rifles is permitted without license in most jurisdictions (Alpers & Picar, 2019). In contrast, in Canada, private possession of these weapons is permitted only under strict licensing conditions (Alpers & Picar, 2019). Gun ownership is therefore much more frequent in the United States than in Canada. In 2017, 325 million U.S. Americans privately owned an estimated 365 million to 393 million guns (Alpers & Picar, 2019). In comparison, the 37 million Canadians own approximately 13 million guns.

There are also cultural differences between these countries with regard to citizens' general trust in law enforcement to protect them against violence. Whereas in Canada 76% of citizens have either a great deal or some confidence in the police (Cotter, 2015), this percentage is 52% in the United States (Jones, 2015). Unlike the United States, the Canadian state has maintained a monopoly on legitimate lethal force; according to experts, "Canadians do not believe that they 'need a gun for self-defense' . . ." (Cukier & Sheptycki, 2012, p. 8). In contrast, U.S. Americans feel much more responsible for their own protection (e.g., Rudnick, 2014), and 67% of U.S. American gun owners report that self-defense is a major reason they own a gun (Pew Research Center, 2017).

It has been suggested that these differences have their roots in the respective myths about their historical Wests, the U.S. Wild West compared with the Canadian Mild West mythologies (Atlas, 2019). In contrast to U.S. settlers, Canadian settlers had clearly established property rights on arrival and the Royal North-West Mounted Police effectively enforced these rights (McLean, 2018). Although a man on a horse, with a rifle and revolver, symbolized the Western frontier in both nations, it was the independent cowboy in the United States and the Royal North-West Mounted Policeman in Canada (Kopel, 1991). We have all seen American Westerns, in which the hero confronted the bad guys in a shootout. This would have been unlikely in the Canadian frontier, wherein the desperado would have surrendered his revolver "at the quiet, firm command of a Canadian Mountie" (Kopel, 1991 p. 172).

These differences in gun owners' reliance on their government for safety and protection might also be related to differences in men's perception of what it means to be a real man. Conventional notions of masculinity consider it a man's role to be a protector and defender (Cukier et al., 2012; Pleck, Sonenstein, & Ku, 1994; Saucier et al., 2016). However, in the United States, guns appear to have become an essential part of this role for many men (e.g., Mencken & Froese, 2019; Stroud, 2012).

In a study based on interviews of 20 U.S. men, who were licensed to carry a concealed handgun, Stroud (2012) reported that defending their families was a major reason for carrying. As she concludes in her discussion, for some of the men, carrying a concealed gun in public allowed them to see themselves as defenders of their families and supported their belief in essential gender differences. Mencken et al. (2019) similarly argued that—particularly for white men facing economic distress—their love of guns connected directly to popular narratives about "masculinity, freedom, heroism, power, and independence" (p. 4).

Although we lack comparable information on Canadian gun owners, the expectation that it is a man's job to defend his family does not seem consistent with the belief that it is the responsibility of a government to protect their citizens. Although guns may symbolize manhood among many U.S. Americans, this does not seem to be the case for Canadian men. Evidence of this difference comes from a computerized content analysis of roughly 18 million words collected from an American and Canadian online discussion forum for gun enthusiasts (McLean, 2018). U.S. gun enthusiasts were more likely to perceive their guns as physical manifestations of values that center on individual freedom and antipathy toward the government. Canadians, on the other hand, were more likely to perceive their guns as tools. Thus, U.S. Americans focus more on what guns represent, Canadians on what guns do. It is interesting to note that Canadians also score 10 points lower than U.S. Americans on Hofstede's (2003) dimension of masculinity (52 vs. 62). These analyses suggest that Canadian gun owners, relative to U.S. gun owners, should show higher levels of trust in law enforcement as well as lower masculinity scores.

Trust, Masculinity, and the Model of Defensive Gun Ownership

These hypothesized differences raise the question of whether a model that has been developed to explain why the majority of U.S. gun owners report owning their guns for protection and self-defense would be applicable to Canadian gun owners. In contrast to previous criminological theories (e.g., Cao, Cullen, & Link, 1997; Dejong, 1997; Kleck, Kovandzik, Saber, & Hauser, 2011), the Model of Defensive Gun Ownership of Stroebe et al. (2017) assumes that there are at least two motives that drive the need for protection self-defense. They agree with previous theories that the specific fear of crime—measured with a newly developed Perceived Likelihood of Assault scale (PLRA)—is a motivator. However, in addition, they postulate a more diffuse fear—the belief in a dangerous world (BDW)—as an important second motive.

The BDW, developed by Altemeyer (1988), reflects a system of beliefs about what people are like. It ranges from one extreme—the view that the world is a stable and basically safe place—to the opposite extreme—that the world is inherently dangerous, unpredictable, and threatening. The BDW is moderately correlated with right-wing authoritarianism ($r = .45$; Duckitt, Wagner, du Plessis, & Birum, 2002); but whereas right-wing authoritarianism is predictive of general intergroup prejudice, individuals with high BDW are mainly concerned about groups that are stereotypically perceived as threatening. This assumption has been supported by several studies. For example, Galperin, Fessler, Johnson, and Hesselton (2013) reported that individuals high on BDW tended to perceive angry male faces as higher on trait anger than did low-BDW participants. Schaller, Park, and Mueller (2003) had participants (whose BDW score had been assessed) respond to an Implicit Association Test about Blacks either in a well-lit or a dark room. The Implicit Association Test was specially constructed to contain either safety (i.e., secure) or danger-related words (e.g., murder). Whereas in the well-lit room, ratings were not associated with BDW scores; in the dark room, higher BDW scores were associated with greater danger ratings. Thus, under conditions of darkness (a cue to safety threat), the chronic beliefs about danger indicated by the BDW positively predicted the extent to which

Blacks were stereotypically associated with characteristics connoting danger. Finally, Cook, Li, Newell, Cottrell, and Neel (2018) demonstrated that high BDW scores predicted increased safety-related concerns with groups such as illegal immigrants and Muslims, compared with groups that were not perceived as posing safety-related threats (e.g., gay men, obese people). The BDW was included in the Model of Defensive Gun Ownership as an indicator of concerns that indirectly link to gun ownership but do not directly reflect a perceived risk of attack.

The Model of Defensive Gun Ownership assumes that people’s perceived likelihood of being assaulted during their lifetime (PLRA) and their belief that the world is a very dangerous place (BDW) determine the need to own a gun for self-defense. However, an important additional prediction of the model derives from the association between gun owners’ need to own a gun for self-defense and their beliefs about how handguns can and should be used. Stroebe et al. (2017) used two measures to assess these beliefs. They asked about the conditions under which gun owners would feel justified to shoot another person and the situations in which they believed to have the right to kill somebody. In the present study, we also asked gun owners about their willingness to engage in gun-related vigilantism.

Predictions

How would the difference in trust in law enforcement between Canadian and U.S. gun owners influence defensive gun ownership and gun owners’ beliefs about how handguns could and should be

used? With regard to a person’s need of handguns for protection/self-defense, the most plausible prediction would be a direct but negative association: The more people trust their government—or, more specifically, their law enforcement—to protect them against violence, the less they should feel the need to own a gun for self-defense. However, this prediction would be inconsistent with the Model of Defensive Gun Ownership. Because, according to the model depicted in Figure 1, PLRA and BDW are the proximal determinants of defensive gun ownership, trust in law enforcement should influence defensive gun ownership only indirectly through these two variables. There should be no zero-order correlation between trust in law enforcement and owning a gun for protection and self-defense. In fact, Kreienkamp, Agostini, and Leander (2019) already report such a lack of correlation in samples of male and female U.S. handgun owners.

According to the Model of Defensive Gun Ownership, masculinity—like trust in law enforcement—should influence defensive gun ownership only through BDW and/or PLRA. It is intriguing to speculate about the direction of such an effect. Superficially, it might seem that real men should perceive the world as a safe place and the risk of an assault as low. However, in a world that is perfectly safe, there would be no need for a man to carry a gun to protect his family. The need to protect and defend one’s family is justified only if a man’s world is full of danger and where there is a reasonable likelihood of violent assaults. We therefore predict that men, who have high scores on masculinity, should perceive the world as a dangerous place and the risk of assault as high.

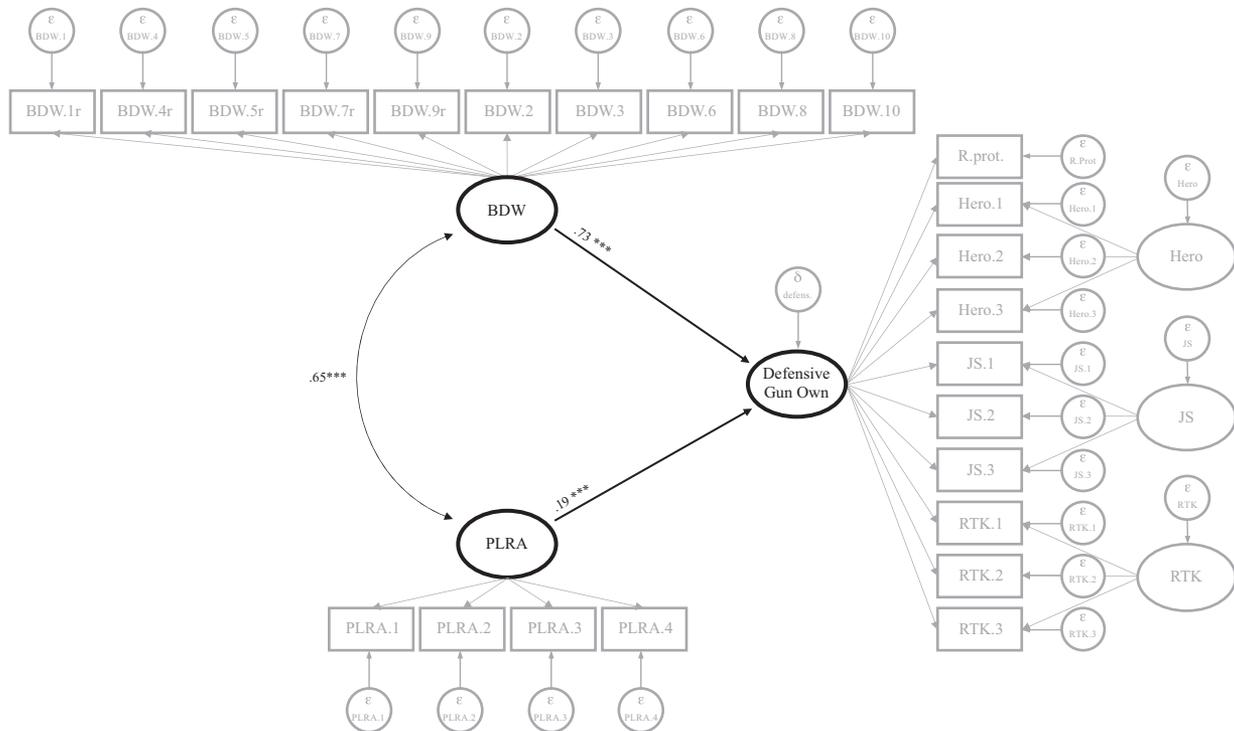


Figure 1. The Model of Defensive Gun Ownership of Stroebe et al. (2017). The path diagram shows the structural equation model with standardized path coefficients. PLRA = Perceived Likelihood of Assault scale; BDW = belief in a dangerous world.

Given that Canadians are assumed to be lower than U.S. Americans on masculinity, they should have lower BDW and PLRA scores. Given that BDW and PLRA are the main determinants of defensive gun ownership, the Model of Defensive Gun Ownership would predict that Canadians should score lower on defensive gun ownership. As a result, they should also feel less justified than U.S. Americans to shoot at/kill another person in self-defense and they should also be less motivated to engage in acts of vigilantism.

A Study of Canadian and U.S. Handgun Owners

In the following, we describe findings of a study of large samples of male Canadian and U.S. handgun owners. Our analyses consist of two parts, a descriptive section and a section reporting SEM. In the descriptive section, we address two issues: (a) We test the aforementioned predicted mean differences between Canadian and U.S. handgun owners; and (b) we then assess whether any observed differences in trust and masculinity are associated with differences in model variables (e.g., BDW and PLRA), as predicted by the Model of Defensive Gun Ownership. In the second part, we use SEM to test whether the Canadian data fit the Model of Defensive Gun Ownership.

Method

Participants

Four hundred twenty-five male U.S. and 475 male Canadian handgun owners were recruited in 2017 via the market research firm Qualtrics Panels. Participants completed this survey as the first part of a broader study, which required that their computers met minimum hardware and browser requirements. Certain variables from the U.S. sample were previously reported by Kreienkamp et al. (2019), which tested the Model of Defensive Gun Ownership, and Leander et al. (2019). However, the Canadian data are not reported elsewhere or the country differences or effects of masculinity in any country.

The informed consent stated that the study pertained to attitudes toward gun ownership and gun use. In addition to prescreening for gun ownership, we sought to stratify the U.S. sample in accordance with 2013 U.S. Census data with regard to age, education, and income (see Table 1). Given that handgun ownership is much less frequent in Canada than the United States, we specified male handgun ownership only as criterion for the selection of Canadian participants. Nevertheless, the Canadians were sampled from most regions of the country (only the Northwest Territories, Yukon, and Nunavut were missing) and included all age, education, and income categories (see Table 1).

Procedure

Participants first provided demographic information (for screening) and then gave informed consent prior to completing the survey. Only English-language questionnaires were used. Country-level mean differences are reported in Table 2.

Trust in Law Enforcement

Three items were used to measure trust in law enforcement: (a) “Do you trust the police to prevent crime in your community”; (b)

Table 1
Sociodemographic Characteristics by Country

Characteristic	Canada		United States		Full sample	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Age (years)						
18–24	48	11.29	31	7.29	79	8.78
25–34	131	30.82	97	22.82	228	25.33
35–44	117	27.53	54	12.71	171	19.00
45–54	56	13.18	58	13.65	114	12.67
55–64	47	11.06	96	22.59	143	15.89
65+	76	17.88	89	20.94	165	18.33
Education						
Some high school or less	13	2.74	4	0.94	17	1.89
High school graduate/GED	75	15.79	84	19.76	159	17.67
Some college	102	21.47	130	30.59	232	25.78
College graduate	173	36.42	158	37.18	331	36.78
Graduate degree	112	23.58	49	11.53	161	17.89
Income						
Less than \$15,000	16	3.37	11	2.59	27	3.00
\$15,000–25,000	11	2.32	38	8.94	49	5.44
\$25,000–35,000	31	6.53	50	11.76	81	9.00
\$35,000–50,000	59	12.42	74	17.41	133	14.78
\$50,000–75,000	128	26.95	106	24.94	234	26.00
\$75,000–100,000	103	21.68	72	16.94	175	19.44
\$100,000–150,000	82	17.26	49	11.53	131	14.56
\$150,000–200,000	28	5.89	15	3.53	43	4.78
\$200,000+	17	3.58	10	2.35	27	3.00

“do you trust the police to generally protect you and your family against acts of violence”; and (c) “do you trust federal law enforcement agencies to prevent mass shootings and other acts of terrorism?” Participants answered the items on a 5-point scale ranging from *not at all* to *a great deal*. Reliability of the scale was good (McDonald’s omega: $\omega_{overall} = .90$, $\omega_{Canada} = .91$, $\omega_{United States} = .90$; overall $M = 3.17$, $SD = 1.12$).¹ In an online validation study with a sample of 297 Canadian men (see online supplemental materials), our trust scale showed large correlations ($.64 < r < .76$) with the measures of police perceptions developed by Kelsay, Papp, Wareham, and Smith (2018) and Madero-Hernandez, Lee, Wilcox, and Fisher (2020).

Masculinity

To specifically tap into male norms for respect and acting as protectors and fighters, we selected three relevant items from the masculinity scales of Saucier et al. (2016) and Pleck et al. (1994): (a) “It is essential for a guy to get respect from others”; (b) “It is a man’s responsibility to protect his family”; and (c) “A man should not be afraid to fight” (rated 1, *disagree strongly*, to 5, *agree strongly*). Reliability of the scale was adequate ($\omega_{overall} = .71$, $\omega_{Canada} = .75$, $\omega_{United States} = .65$; overall: $M = 4.05$, $SD = 0.78$). In our validation study of Canadian men (see online supplemental materials), the three-item masculinity scale showed a large correlation with Saucier et al.’s (2016) Masculine Honour

¹ McDonald’s omega is recommended over Cronbach’s alpha (Dunn, Baguley, & Brunson, 2014). The interpretation of acceptable levels of internal consistency is the same as for alpha. More details on the scale’s reliability and validity are provided in the validation study (Supplemental Material C).

Table 2
Differences by Country: Gun Culture

Variable	Mean Canada	Mean United States	Difference	95% CI	<i>t</i> value	<i>df</i>	<i>p</i> value	Adjusted <i>p</i> value
Trust in the police	3.21	3.13	0.07	[−0.07, 0.22]	0.97	879.6	.332	.332
Masculinity	3.98	4.13	−0.15	[−0.25, −0.05]	−2.88	893.6	.004	.006
Reason for protection	3.32	4.37	−1.04	[−1.21, −0.87]	−12.12	818.5	<.001	<.001

Note. CI = confidence interval. Welch two-sample *t* tests, two-sided, alpha correction within section: Benjamini and Hochberg (1995). The country differences remained stable after controlling for demographics (see Supplemental Table 1).

Beliefs scale, $r = .78$, $p < .001$, and moderate correlations with hostile sexism ($r = .45$, 95% confidence interval CI [.35, .53]) and benevolent sexism ($r = .56$, 95% CI [.48, .64]; see Glick & Fiske, 1996); these latter correlations are slightly higher than the correlations reported by Saucier et al. (2016, $r = .36$ and $r = .49$). Our three-item scale was moderately correlated with a male role attitudes scale ($r = .60$, 95% CI [.53, .67]; see Pleck et al., 1994); Saucier et al. (2016) reported that male role attitudes also correlates moderately with masculine honor beliefs ($r = .45$).

Belief in a dangerous world. BDW was measured with the revised scale of Duckitt (2001). Example items of that BDW scale include the following: “There are many dangerous people in our society, who will attack someone out of pure meanness, for no reason at all” and “Any day now, chaos and anarchy could erupt around us. All signs are pointing to it” (Duckitt, 2001, p. 69). Participants answered all items on a 5-point scale ranging from “disagree strongly to agree strongly.” Reliability of the scale was good ($\omega_{overall} = .89$, $\omega_{Canada} = .89$, $\omega_{United States} = .87$; overall $M = 3.13$, $SD = 0.78$).

Perceived lifetime risk of assault. The PLRA measure developed by Stroebe et al. (2017) was used. Participants were asked: “What do you estimate is the likelihood the following will happen in your lifetime (in your future)?” [emphasis as in original]. Participants were then asked to answer four items (likelihood you will be mugged, likelihood you will be violently attacked, likelihood your home will be invaded by an armed burglar, and likelihood you will be present during a mass shooting). Participants answered on a 5-point scale ranging from *not at all* to *extremely likely*. The scale was reliable ($\omega_{overall} = .92$, $\omega_{Canada} = .91$, $\omega_{United States} = .92$; overall $M = 2.55$, $SD = 1.02$). PLRA has been found to be a significant predictor of defensive gun ownership in Stroebe et al. (2017).

Dependent Variables (Indicators of Defensive Gun Ownership)

Reason for owning a gun. Participants were asked the reasons for owning a gun, using the most commonly cited reasons from a Pew Research Center, 2017: (a) Protection/Self-defense, (b) sport/target shooting, (c) like guns/wanted one/enjoy using, (d) have always owned/raised with guns/tradition, and (e) family heirloom/gift. Participants gave their ratings on a 5-point scale ranging from: 1, *not a reason*, to 5, *major reason*, with the possibility to choose *not applicable* (also coded 1). The variable of interest was protection/self-defense ($M = 3.82$, $SD = 1.42$).

Justification to shoot. Participants were presented with a vignette examining in which type of situation they would feel justified to shoot an intruder (Stroebe et al., 2017): “If a person

encounters an intruder, in his home, in the middle of the night, how justified is it for him to . . .” and on separate screens, participants rated the justification of three actions “. . . shoot the intruder”; “. . . shoot the intruder, even if the intruder is already trying to flee the home”; and “. . . shoot the intruder, even if you are otherwise alone and can get out safely” (rated 1, *not at all justified*, to 5, *totally justified*). About 15% of the participants rated the scale on the highest possible level (*totally justified*, $\omega_{overall} = .84$, $\omega_{Canada} = .87$, $\omega_{United States} = .77$; overall $M = 3.35$, $SD = 1.20$). In the Stroebe et al. (2017) study, justification to shoot was higher among gun owners than nonowners and was also correlated with gun owners’ perception of guns as an effective means of self-defense ($r = .34$).

Right to kill. The next set of questions focused directly on situations in which participants believed that they had the right to kill another person: “I have a right to kill another person in self-defense”; “I have a right to kill another person to defend my family”; and “I have a right to kill another person to defend my home” (rated 1, *disagree strongly*, to 5, *agree strongly*). Again, a larger portion of participants rated the scale on the highest possible level (*agree strongly*, 34.10%; $\omega_{overall} = .85$, $\omega_{Canada} = .85$, $\omega_{United States} = .81$; overall $M = 4.27$, $SD = 0.88$). These items were taken from a study of self-protection and the culture of honor, in which Cohen and Nisbett (1994) sought to explain why the southern United States has a greater degree of violence than the north. They found a significant difference in agreement with these items between their southern and northern respondents. In the Stroebe et al. (2017) study, right-to-kill scores were higher among gun owners than non-owners, and the scale correlated with gun owners’ perception of guns as an effective means of self-defense ($r = .42$).

Vigilantism. To measure participants’ willingness to engage in gun-related vigilantism as an indication of a more expansive gun ownership, we used the vigilantism scale developed by Leander et al. (2019). Participants read “Might you ever consider drawing or discharging a firearm to . . .” and then rated each of three items, save a vulnerable stranger in distress, stop an active-shooter situation, and deter intimidation by troublemakers, on a 5-point scale (from *definitely not* to *definitely yes*). The combined scale was normally distributed. Scale reliability was adequate ($\omega_{overall} = .78$, $\omega_{Canada} = .82$, $\omega_{United States} = .67$; overall: $M = 3.68$, $SD = 0.93$). Validation of the vigilantism scale is provided by Leander et al. (2019, supplement). External validity was demonstrated by showing that, unlike the right to self-defense scales, the vigilantism scale was positively correlated with beliefs about extrajudicial gun use, such as the right to take the law into one’s own hands against suspected crimi-

nals or to shoot a suspected perpetrator of a mass shooting, even if he had already surrendered.

Results

Descriptive Analyses

Testing the validity of the predicted differences between Canadian and U.S. handgun owners. Table 2 reports the mean differences between Canadian and U.S. handgun owners' trust in the police, masculinity, and protection/self-defense given as reason for owning a handgun. Surprisingly, Canadian handgun owners did not differ significantly from U.S. Americans in their trust that law enforcement would protect them against violence. This discrepancy with cultural expectations could be due to a difference between Canadian handgun owners and the general population. After all, handguns are weapons for self-defense rather than hunting. It is therefore plausible that Canadian handgun owners differ from Canadians generally because they are the ones concerned about their own safety. Nevertheless, Canadian handgun owners still scored lower than U.S. owners on our measure of masculinity.

As expected, Canadians rated protection/self-defense on average as less important than U.S. Americans,² but with a mean value of 3.32, they were still above the scale midpoint. In fact, 33% of the Canadian sample gave the highest rating for protection/self-defense (rated 5, *major reason*), and another 20% gave the next highest rating (4). Yet 62% of U.S. Americans gave the highest rating to protection/self-defense, and 22% gave the next highest rating. Thus, protection/self-defense is clearly less important for Canadian than U.S. Americans as reason for gun ownership.

Are these observed differences associated with differences in model variables predicted by the Model of Defensive Gun Ownership? Table 3 reports the comparisons of mean differences between Canadian and U.S. handgun owners on the model variables. The differences in threat perceptions are in line with model expectations: As one would expect from their lower masculinity scores, Canadians scored significantly lower than U.S. Americans on BDW and PLRA. As already mentioned (see Table 2), Canadians also scored significantly lower on need for protection/self-defense as a reason for gun ownership and lower on the behavioural indicators of defensive gun ownership—namely justification to shoot and right to kill. Finally, Canadians had lower scores on the measure of vigilantism (hero). This pattern is consistent with expectations derived from the Model of Defensive Gun Ownership.

Structural Equation Modeling

In a next step, we tested whether the structural equation model that fit the U.S. data of Stroebe et al. (2017) and Kreienkamp et al. (2019) would also apply to the Canadian sample. As suggested by Kline (2015), we report four goodness-of-fit-measures: the (a) root mean square error of approximation (e.g., MacCallum, Browne, & Sugawara, 1996), (b) standardized root mean squared residual (note: inflated with large sample sizes; Hu & Bentler, 1999), (c) model χ^2 test and the (d) comparative fit index (CFI). Because some of our variables are not normally distributed, we also report bootstrap bias-corrected confidence intervals (based on 10,000

bootstrap samples). All analyses were performed with AMOS-SPSS (version 25; Arbuckle, 2017).

Assessing the original model. In the Stroebe et al. (2017) study, BDW and PLRA predicted various indicators of defensive gun ownership, including (a) whether protection/self-defense was a main reason for gun ownership, (b) justification to shoot a home intruder, and (c) and the right to kill in self/home defense. These were considered core features of a latent construct defensive gun ownership. Although Stroebe et al. (2017) treated these as individual outcomes, the present analysis followed a procedure developed by Kreienkamp et al. (2019): All measured variables that were assumed to reflect defensive gun ownership were combined into a latent construct. Thus, the latent construct, defensive gun ownership, was represented by an explicit self-attribution (protection/self-defense as a main reason for owning a gun) and the beliefs about gun use (justification to shoot, right to kill, and vigilantism).

The pattern of the data replicated the original model (Stroebe et al., 2017): BDW and the PLRA were moderately correlated ($r = .65$) and both measures positively predicted the defensive gun ownership latent variable, with effect sizes ranging from small (PLRA) to medium (BDW), $R_{\text{defensive}}^2 = .45$, PLRA: $b = 0.19$, $SE = 0.05$, $p < .001$, $\beta = 0.25$; BDW: $b = 0.73$, $SE = 0.13$, $p < .001$, $\beta = 0.48$ (also see Figure 1; model fit was adequate, given the small number of predictors; see Table 4; for factor loadings see Supplemental Table 2).

Adding antecedent effects of trust and masculinity. Another aim of this study was to test the effects of trust in law enforcement and masculinity on defensive gun ownership. According to the Model of Defensive Gun Ownership, these variables should influence defensive gun ownership indirectly through BDW and PLRA. To test these predictions, the latent concepts of trust and masculinity were added as antecedents of PLRA and BDW. We then assessed their direct and indirect paths to the defensive gun ownership latent variable. Figure 2 presents the resulting structural equation model (also see Table 5 for unstandardized and bootstrapped parameters).

The overall model fit was acceptable to good, with the absolute fit measures root mean square error of approximation = .07, 90% CI [.069, .078] and standardized root mean squared residual = .076 being smaller than .08. The comparative fit index = .90 was at the .90 general guideline and the model χ^2 test was statistically significant ($\chi^2 [106, N = 475] = 1375.60$, $p < .001$), which was to be expected with the large sample size (Kenny, 2015). Additionally, all individual items loaded onto their respective factors (with all factor loadings $> .3$, see Supplemental Table 3).

Indirect effects of trust in law enforcement. In line with predictions, there was no direct effect of Trust \rightarrow Defensive Gun Ownership but rather an indirect effect of Trust \rightarrow BDW \rightarrow Defensive gun ownership ($b = -0.05$, boot $p < .001$, 95% boot CI [-0.10, -0.02]). Higher trust in law enforcement to provide protection predicted lower scores on BDW, which in turn predicted lower defensive gun ownership. There was no such indirect effect

² The only other significant differences were on tradition and like. Owning a gun was more of a tradition in the United States compared with Canada, and U.S. Americans also gave liking of guns more often as reason for their purchase.

Table 3
Differences by Country: Threat-Driven Defensive Gun Ownership

Variable	Mean Canada	Mean United States	Difference	95% CI	<i>t</i> value	<i>df</i>	<i>p</i> value	Adjusted <i>p</i> value
Threat perceptions								
Belief in a dangerous world	2.93	3.36	-0.43	[-0.53, -0.33]	-8.49	893.8	<.001	<.001
Perceived lifetime risk of assault	2.43	2.68	-0.25	[-0.38, -0.11]	-3.66	882.8	<.001	<.001
Defensive gun beliefs								
Justification to shoot	3.02	3.71	-0.70	[-0.85, -0.55]	-9.16	889.9	<.001	<.001
Right to kill	4.03	4.54	-0.52	[-0.63, -0.41]	-9.46	830.5	<.001	<.001
Vigilantism	3.48	3.90	-0.42	[-0.54, -0.30]	-7.04	866.8	<.001	<.001

Note. CI = confidence interval. Welch two-sample *t* tests, two-sided, alpha correction within section (Benjamini & Hochberg, 1995). The country differences remained stable after controlling for demographics (see Supplemental Table 1).

involving PLRA (Trust → PLRA → Defensive Gun Ownership: $b = -0.002$, boot $p = .82$, 95% boot CI [-0.02, 0.02]). In fact, trust and PLRA were uncorrelated ($r = .06$). Thus, the degree of trust Canadians had in their government was not associated with their perceived likelihood of being assaulted during their lifetime.

Indirect effects of masculinity. Consistent with model predictions, there were two indirect paths: Masculinity → BDW → Defensive gun ownership ($b = 0.13$, boot $p < .001$, 95% boot CI [0.08, 0.21]) and Masculinity → PLRA → Defensive gun ownership ($b = 0.07$, boot $p < .001$, 95% boot CI [0.03, 0.14]). All indirect effects are reported in Table 6. Lower masculinity predicted lower BDW and PLRA, which in turn predicted lower defensive gun ownership. In addition to the indirect effects, there was also a direct effect of Masculinity → Defensive gun ownership ($b = 0.27$, $p < .001$, 95% boot CI [0.16, 0.39], $\beta = .28$). Although in the right direction, this direct link was not predicted by the Model of Defensive Gun Ownership per se, which predicts that masculinity will influence defensive gun ownership indirectly via BDW and PLRA (see Table 5 for direct paths and Supplemental Table 3 for factor loadings).

Discussion

The picture that emerges from our sample of Canadian handgun owners does not quite tally with the expectations we had derived from the literature. According to our literature review, Canadians—unlike U.S. Americans—are assumed to trust their government to protect them against violence (Atlas, 2019; Kopel, 1991; Rudnick, 2014). In our study, no such difference emerged. This

discrepancy is probably due to the fact that these statements were made about the general population of Canadians, whereas our study focused on the small minority of male Canadian handgun owners. However, no such argument can explain why so many Canadians reported owning their handguns for protection/self-defense. Although fewer Canadian than U.S. handgun owners considered protection/self-defense as a major reason for handgun ownership, the finding that more than half of Canadian handgun owners gave it as one of the main reasons for their gun purchase is inconsistent with prior statements that Canadian gun owners do not believe that they need a gun for self-defense (e.g., Cukier et al., 2012).

It is interesting to speculate why our findings are not in line with previous statements about Canadians. It is likely that their description of Canadian attitudes toward guns was correct before 2012, but substantial changes have occurred since then. This interpretation is supported by a recent editorial by White and Cardoso (2019) in Canada's national newspaper *Globe and Mail*, in which they pointed out that Canadians owned 950,000 handguns in 2017, compared with 660,000 in 2013. They suggested that this proliferation happened as shootings became more common in Canada's large cities. Thus, 290,000 handguns—30% of all handguns owned by Canadians at the time our study was conducted in 2017—were bought since 2013. Unfortunately, we did not ask our respondents when they bought their handguns, but it is possible that the owners of the 30% of handguns bought since 2013 might be overrepresented among 30% who reported protection/self-defense as a major reason for their gun ownership. The moderate correlation

Table 4
Original Model—Structural Equation Model—Path Parameters

Predictor	Effect	Outcome	B^a	95% boot CI	β^b	95% boot CI
BDW	→	Defensive	0.73***	[0.48, 1.10]	0.48***	[0.35, 0.61]
PLRA	→	Defensive	0.19***	[0.08, 0.32]	0.25**	[0.10, 0.40]
Model χ^2	χ^2 (84, $N = 475$) = 1,029.81, $p < .001$					
RMSEA	0.08, 90% CI [.078, .089]					
SRMSR	0.076					
CFI	0.87					

Note. CI = confidence interval; PLRA = Perceived Likelihood of Assault scale; BDW = belief in a dangerous world; RMSEA = root mean square error of approximation; SRMSR = standardized root mean squared residual; CFI = comparative fit index.

^a Parametric significance test. ^b Bootstrap significance test.

** $p < .010$. *** $p < .001$.

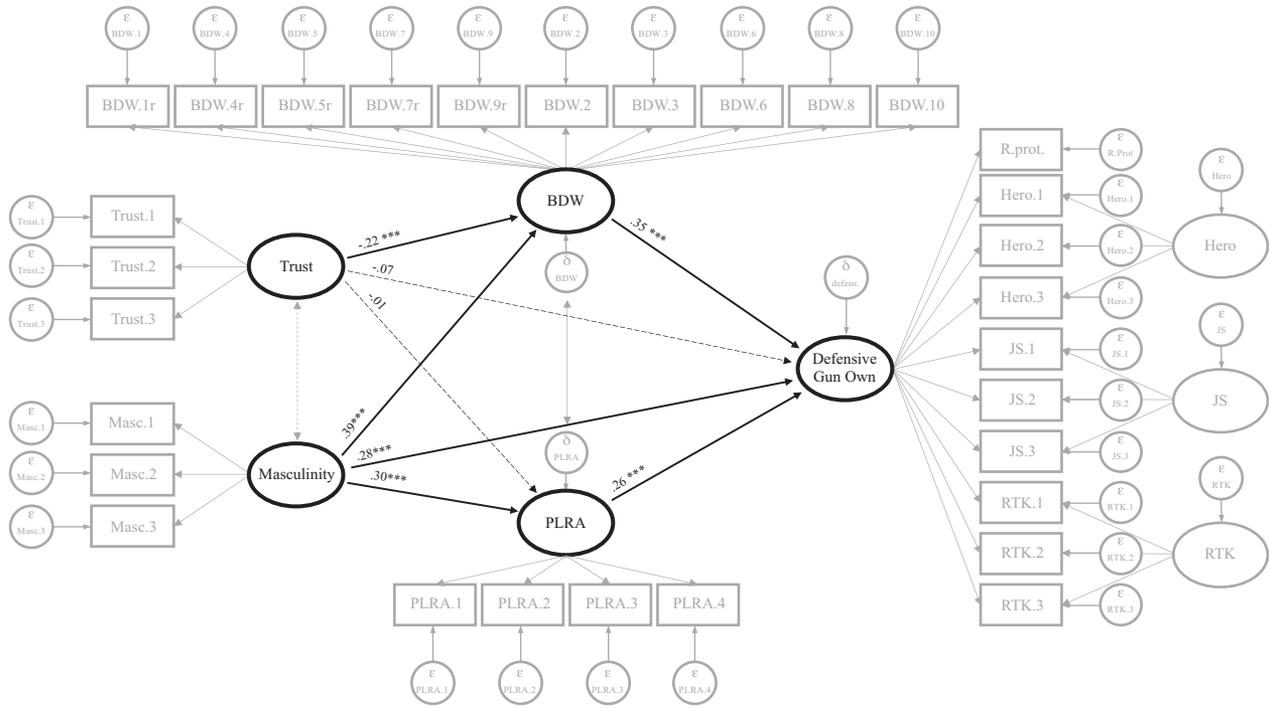


Figure 2. Extended Model of Defensive Gun Ownership. The path diagram shows the structural equation model with standardized path coefficients. PLRA = Perceived Likelihood of Assault scale; BDW = belief in a dangerous world. *** $p < .001$.

between defensive gun ownership and PLRA ($r = .45$) is supportive of this assumption.

Although the observed differences between U.S. Americans and Canadians do not tally with expectations based on our literature review, the pattern of gun-related motivations and behaviors observed in our study is fairly consistent with predictions derived from Stroebe et al.'s (2017) Model of Defensive Gun Ownership. Although there was no difference in trust in law enforcement, the difference in masculinity would lead one to expect that Canadians

should have lower values on BDW and PLRA. The observed mean differences between Canadian and U.S. handgun owners are consistent with these expectations; and because Canadians have lower scores on BDW and PLRA, the model would predict that they should also have lower scores on the need to own a gun for protection/self-defense. If one considers the world a less dangerous place and the risk of being violently attacked as lower, then one should also have less need to own a gun for self-defense. Our findings support these predictions. Also, in line with model pre-

Table 5
Extended Model—Structural Equation Model—Path Parameters

Predictor	Effect	Outcome	B^a	95% boot CI	β^b	95% boot CI
Masculinity	→	PLRA	0.38***	[0.24, 0.52]	0.30***	[0.19, 0.40]
Trust	→	BDW	-0.10***	[-0.17, -0.05]	-0.22***	[-0.33, -0.11]
Masculinity	→	BDW	0.25***	[0.17, 0.36]	0.39***	[0.27, 0.50]
Trust	→	PLRA	-0.01	[-0.10, 0.09]	-0.01	[-0.12, 0.10]
Masculinity	→	Defensive	0.27***	[0.16, 0.39]	0.28***	[0.17, 0.39]
Trust	→	Defensive	-0.05	[-0.12, 0.02]	-0.07	[-0.18, 0.03]
PLRA	→	Defensive	0.19***	[0.08, 0.32]	0.26***	[0.11, 0.40]
BDW	→	Defensive	0.52***	[0.29, 0.84]	0.35***	[0.20, 0.50]
Model χ^2	$\chi^2 (106, N = 475) = 1,375.60, p < .001$					
RMSEA	0.074, 90% CI [0.069, .078]					
SRMSR	0.076					
CFI	0.9					

Note. CI = confidence interval; PLRA = Perceived Likelihood of Assault scale; BDW = belief in a dangerous world; RMSEA = root mean square error of approximation; SRMSR = standardized root mean squared residual; CFI = comparative fit index.

^a Parametric significance test. ^b Bootstrap significance test.

*** $p < .001$.

Table 6
Extended Model—Structural Equation Model—Indirect Effects

Indirect (combined) path	<i>B</i>	95% boot CI
Trust → BDW → Defensive gun ownership	−0.05***	[−0.10, −0.02]
Trust → PLRA → Defensive gun ownership	−0.002	[−0.02, 0.02]
Masculinity → BDW → Defensive gun ownership	0.13***	[0.08, 0.21]
Masculinity → PLRA → Defensive gun ownership	0.07***	[0.03, 0.14]

Note. CI = confidence interval; PLRA = Perceived Likelihood of Assault scale; BDW = belief in a dangerous world.

*** $p < .001$.

dictions, Canadians have lower scores than U.S. Americans on justification to shoot, right to kill, and vigilantism.

The results of our SEM were generally supportive of the Model of Defensive Gun Ownership. The model test replicated the original Stroebe et al. (2017) pattern, with BDW and PLRA predicting various indicators of defensive gun ownership. However, the test of the extended model was slightly less supportive of predictions. Although trust in law enforcement and masculinity—in line with predictions—influenced defensive gun ownership indirectly via BDW and PLRA, masculinity had an additional direct link with defensive gun ownership. Although individuals who are high on masculinity should have a greater need to own their handgun for protection and self-defense, the Model of Defensive Gun Ownership predicts the association should run through BDW and PLRA. A direct link is inconsistent with that prediction. However, given the close association of gun ownership and a man's role as defender of his family (e.g., Stroud, 2012), the emergence of this direct link is hardly surprising. After all, one of the items of the masculinity scale even appeals to a man's responsibility to protect his family.

There are also limitations to our study. The fact that our samples of handgun owners are not representative of handgun owners in each country impairs the conclusiveness of our findings. We cannot make descriptive statements about the U.S. male handgun owners or the Canadian male handgun owners. However, in addition to the fact that drawing representative samples would have exceeded our financial resources, it would also have been impossible in the case of U.S. handgun owners. To draw a representative sample, one needs to be able to identify the population, from which the sample should be drawn. Given that “. . . In the United States, the law does not require that a record of the acquisition, possession, and transfer of each privately held firearm be retained in an official register” (Alpers & Picar, 2019), the population of gun owners cannot be identified. Although drawing a representative sample of male handgun owners would technically have been possible in Canada, doing so would have been of limited use. Given the lack of representativeness of the U.S. sample, we still would not be able to make valid statements about differences between the two groups. To overcome this limitation—at least partially—one could control for the various demographic characteristics in computing the mean differences. Yet even after controlling for age, education, and income, the reported country differences remained stable (see Supplemental Table 1 for covariate analysis). The cross-sectional nature of our data represents another limitation of our study: Using SEM does not miraculously turn correlational into causal data. However, our data fit the structural

assumptions of the Model of Defensive Gun Ownership, which is a model that makes causal assumptions.

There are two conclusions that can be drawn from our findings, one theoretical and one practical. The theoretical conclusion is that the Model of Defensive Gun Ownership provided good fit to the data of male Canadian handgun owners despite a number of differences between Canadian and U.S. gun owners. Our study thus offers support for the original as well as the extended model involving trust and masculinity. The practical conclusion is that Canadian handgun owners do not appear to differ from their U.S. counterparts as much as the literature might lead one to expect. Our observation that many Canadians reported owning their guns for self-defense does not quite tally with the general belief that Canadians trust their government to support them and do not believe that they need a gun for self-defense (Cukier et al., 2012). Our findings suggest that a substantial proportion of Canadian handgun owners do believe that they need a gun for self-defense, which does not bode well for the attempt of the Canadian government to outlaw handgun ownership.

Résumé

Cette étude, qui porte sur les Canadiens et les Américains propriétaires d'armes de poing, vise à répondre à deux questions : a) Y a-t-il des différences dans leurs motivations et leurs comportements reliés aux armes à feu ? b) Est-ce que le modèle de Stroebe, Leander et Kruglanski (2017), le *Model of Defensive Gun Ownership* (modèle de la possession d'une arme défensive) s'applique aussi aux données des propriétaires mâles d'armes à poing au Canada ? La culture des armes à feu aux États-Unis et au Canada est censée être différente : contrairement aux propriétaires américains d'armes à feu, ceux du Canada, il est supposé, n'achètent pas d'armes pour se protéger, car ils croient que le gouvernement assurera leur protection contre les criminels. Bien qu'il existe des différences dans les motivations et les comportements entre les propriétaires d'armes de poing au Canada et aux États-Unis, celles-ci sont moins importantes que prévu : le niveau moyen de confiance des propriétaires d'armes de poing canadiens et américains envers les organismes d'application de la loi ne différerait pas. De plus, la moitié des propriétaires d'armes à feu canadiens jugeaient que l'autodéfense est une raison importante pour justifier la possession d'une arme à feu. Finalement, un modèle d'équation structurelle intégrant les données des États-Unis de Stroebe et al. (2017) pouvait aussi s'appliquer aux données du Canada. Étant donné que 30 % des armes de poing au Canada ont été achetées entre 2012 et 2017, période où s'est accru le nombre de fusillades

dans les grandes villes du pays, nous supposons que des événements récents peuvent avoir réduit les différences qui ont peut-être jadis existé entre les propriétaires d'armes de poing du Canada et des États-Unis.

Mots-clés : croyance d'un monde dangereux, motivation à posséder une arme à feu, modèle de la possession d'une arme défensive, confiance envers le gouvernement, masculinité.

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