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Political Beliefs, Region of Residence, and Openness to Firearm Means
Safety Measures to Prevent Suicide

by

Sarah E. Butterworth

A Thesis
Submitted to the Graduate School,
the College of Education and Human Sciences
and the School of Psychology
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

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ABSTRACT

Firearms account for approximately half of all suicides in the US and are highly lethal, widely available, and popular; thus, firearms are an ideal candidate for targeted means safety interventions. However, despite their value as a suicide prevention tool, firearm means safety strategies are not widely utilized, possibly due to factors which impede openness to their use. This study examined the relationship between region, political beliefs, and openness to firearm means safety in a sample of 300 American firearm owners. Overall, firearm owners were more willing to engage in means safety for others than for themselves and to store firearms safely than to temporarily remove them from the home. Social policy views and region were significantly associated with openness to firearm means safety measures, however, economic policy views were not. This study provides further context for the development and implementation of efficacious means safety measures capable of overcoming potential barriers to their use.

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DEDICATION

For Bill and Marion Butterworth, Billy Lanchantin, and Jesse Aaron Coffey.

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CHAPTER I - INTRODUCTION

Firearms and Suicide

Suicide is an often overlooked public health issue of growing national concern. In 2016, suicide was the 10th leading cause of death in the United States, accounting for 44,965 deaths ([US]; US Centers for Disease Control and Prevention [CDC], Web-based Injury Statistics Query and Reporting System, 2016). In contrast, homicide, often thought to be more prevalent than suicide, is typically the 16th leading cause of death in the US, and accounted for 19,362 deaths in 2016 (CDC, 2016). In half of all US states, suicide rates have risen more than 30% from 1999 to 2016 (CDC, 2018). Since 1999, the overall US suicide rate has increased approximately 34%, from a rate of 10.5 per 100,000 people in 1999 to 13.9 per 100,000 people in 2016, reaching the highest civilian rate observed in nearly 30 years (CDC, 2016).

Firearms typically account for approximately half of all suicides annually in the US (CDC, 2016). Indeed, in 2016, 22,929 Americans died by firearm suicide, accounting for about half of all US suicide deaths that year (CDC, 2016). Interestingly, although firearms are used in the majority of suicides in the US, they are utilized in less than 5% of suicide attempts (Anestis, 2016). This is likely due to their high lethality. Firearms are the most lethal means of suicide—their use in a suicide attempt typically results in death (Anestis, 2016; Elnour & Harrison, 2008; Shenassa, Catlin, & Buka, 2003). Males, who die by suicide at rates significantly higher than females, most commonly use firearms in suicides and suicide attempts (Curtin, Warner, & Hedegaard, 2016). Male gender, veteran status, elevated blood alcohol concentration, older age, relationship problems, and residing in an area with greater firearm availability are all characteristics of suicide

decedents who died by firearm rather than another method (Kaplan, McFarland, & Huguet, 2009a; Kaplan, McFarland, & Huguet, 2009b). Furthermore, recent research has demonstrated that those who die by suicide using a firearm are more likely to be male and to own a firearm and less likely to have previously endorsed suicidal ideation or engaged in previous non-lethal suicide attempts than are those who die by other methods (Anestis, Khazem, & Anestis, 2017). Additionally, firearm owners who stored their firearms at home and in non-secure locations (e.g., bedside tables) were more likely than other suicide decedents to die using a firearm (Anestis et al., 2017).

Means Safety

Means safety—the safe storage, limitation of access, or decrease in potency of lethal methods for suicide—has been found to be effective in reducing suicide rates (Barber & Miller, 2014b; Khazem et al., 2016; Sarchiapone, Mandelli, Iosue, Andrisano, & Roy, 2011). Although certainly not unique to firearms, means safety approaches that focus on guns have exhibited substantial potential as suicide prevention tools. For example, among firearm-owning households, suicide risk is lower when firearms are stored locked, unloaded, and separate from ammunition (Grossman et al., 2007). Firearm means safety strategies have effectively reduced suicides in numerous contexts outside of the US, including following the broad implementation of more stringent firearm legislation in Australia (Chapman, Alpers, Agho, & Jones, 2006) and New Zealand (Beautrais, Fergusson, & Horwood, 2006) and following the elimination of the practice of allowing Israel Defense Force soldiers to take their weapons home during leave (Lubin, Werbeloff, Halperin, Shmushkevitch, Weiser, & Knobler, 2010). Means safety measures have been found to be especially effective in contexts where the method is

highly lethal, widely available, and popular; given the lethality, open availability, and popularity of firearms in the US, they are an ideal candidate for targeted means safety measures to prevent suicide (Hawton, 2007). It has been estimated that if firearm means safety counseling reached all firearm-owning households containing an individual thinking about suicide, and the counseling had the effect of limiting the access of a fourth of these individuals to firearms, approximately 3,600 to 3,900 lives could be saved in one year (Barber & Miller, 2014a).

An important factor to consider regarding means safety measures is the possibility for an increase in suicides using another method if access to a particular method is restricted or limited. However, research has consistently demonstrated that suicidal individuals do not usually “substitute” one means of suicide for another if their use of a particular method is prevented (Diagle, 2005; Yip et al., 2012). Furthermore, if an individual seeks out and substitutes a different method of suicide, it is often less lethal than the initial method chosen (Diagle, 2005; Yip et al., 2012). These findings dispel the myth of “means substitution” and give credence to the development and implementation of firearm means safety interventions, demonstrating that they are a vital and efficacious method of preventing suicide.

The Impact of Geographic and Cultural Factors on Firearm Ownership

Despite their potentially enormous yield as a suicide prevention tool, firearm means safety measures are not systematically utilized. One possible explanation for their lack of reach could be that individual differences influence the willingness of some firearm owners to engage in such means safety practices. In particular, it may be worth considering whether geographic and cultural factors influence openness to firearm means

safety interventions, especially given the evidence that firearm ownership and gun culture in the US differ by region. Indeed, firearm ownership rates are higher in the South (36%) and Midwest (32%) than in the West (31%) and the Northeast (16%) (Parker, Horowitz, Igielnik, Oliphant, & Brown, 2017). Furthermore, individuals who live in rural areas are twice as likely as those in urban areas to own a firearm (Parker et al., 2017). A higher proportion of military and veteran personnel—who own firearms at higher rates than civilians and are more likely to store firearms unsecured (Anestis & Capron, 2016; Hepburn, Miller, Azrael, & Hemenway, 2007; Khazem et al., 2016)—reside in the Southern region of the US than in other areas (US Department of Defense, 2015; US Department of Veterans Affairs, 2014).

In addition to influencing the decision to own a firearm overall, regional factors are also likely associated with the types of firearms owned, which are commonly a function of the intended use of the firearm (e.g. owning a long gun for hunting or a handgun for protection). Individuals who reside in the Midwest most frequently own only long guns (Hepburn et al., 2007). Compared to the Northeast and West regions of the US, individuals residing in the South more commonly own any type of firearm, both handguns and long guns, and handguns only (Hepburn et al., 2007). Individuals residing in rural areas of the US most commonly own any type of firearm, both handguns and long guns, and long guns only; whereas individuals living in suburban and urban areas most commonly own handguns only (Hepburn et al., 2007).

The culture surrounding firearms, which varies by region, has the potential to influence perceptions regarding firearm ownership and gun control measures. Individuals who report that their parents kept a firearm in the home while growing up are more likely

to own any type of gun, both handguns and long guns, handguns only, and long guns only as adults compared to those who did not grow up with a gun in the home (Hepburn et al., 2007). Americans exposed to social gun culture, in which firearms are a prominent aspect of most social interactions, own guns at a rate 2.25 times higher than those not exposed to social gun culture (Kalesan, Villarreal, Keyes, & Galea, 2015). Additionally, Southern culture specifically is associated with both firearm ownership and opposition to gun control measures (Brennan, Lizotte, & McDowall, 1993; Ellison, 1991). American firearm owners more often endorse “feeling proud to be an American” and are more likely to agree with statements such as “honor and duty are my core values” than those who do not own firearms (Morin, 2014). Furthermore, White Americans who live in “honor cultures,” in which the cultivation and defense of a reputation of strength and toughness is emphasized, are more likely to die by firearm suicide than by another method, even when the accessibility of firearms is accounted for (Brown, Imura, & Osterman, 2014). In this sense, regional and cultural norms appear relevant to the decision to own a firearm as well as potential willingness to engage in firearm means safety practices such as safe storage (storing firearms unloaded, separate from ammunition, and in a secure, locked location) and allowing a trusted individual to store a firearm during a time of crisis.

The Impact of Political Beliefs on Firearm Ownership

Americans’ political ideology also varies by region and has the potential to impact the decision to own a firearm, store it safely, and partake in other firearm means safety practices. In their 2012 report regarding Americans’ knowledge about political parties, Pew Research Center provided guidance in describing political ideologies (Pew Research

Center, 2012). They defined “conservative” ideology as aligning with the Republican Party, having a preference for more traditional values and social policies, lower taxes, and a smaller and less involved government. In contrast, “liberal” political ideology is described as aligning with the Democratic Party, having a preference for more progressive values and social policies, higher taxes to fund governmental programs, and a larger and more involved government. Political beliefs described as “moderate” fall between the conservative and liberal ideologies.

Americans with conservative political views are approximately twice as likely to own a firearm as those with liberal political views (Morin, 2014). Hepburn, Miller, Azrael, and Hemenway (2007) found that individuals with conservative political beliefs more frequently reported owning any type of firearm, both handguns and long guns, handguns only, and long guns only in comparison to their counterparts with moderate or liberal views. Furthermore, in a recent study of American suicide decedents in which political beliefs overall were broken into social and economic elements, it was found that decedents with conservative social and economic policy views owned firearms at higher rates than those with moderate or liberal views (Butterworth, Houtsma, Anestis, & Anestis, 2017). Additionally, firearms, the most commonly used method for suicide across all decedents in the sample, were used more frequently by decedents with conservative social policy views than those with moderate or liberal views; however, this finding did not hold true for economic policy views (Butterworth et al., 2017).

Conservative beliefs have also been historically associated with an opposition to gun control measures. In the 2016 presidential election, the percentage of registered voters who agreed with the statement “it is more important to control gun ownership than

protect gun rights” was 79% for those who supported the Democratic candidate and 9% for those who supported the Republican candidate (Pew Research Center, 2016). When asked about the relationship between firearm ownership and personal safety, 57% of Americans who identify as Democrats reported thinking that firearm ownership does more to put people’s safety at risk than to protect them from being the victims of crime, in contrast to 14% of Americans who identify as Republicans (Pew Research Center, 2016). In 2016, 82% of Democrats and 50% of Republicans were in favor of a federal database of firearm sales and 86% of Democrats and 78% of Republicans were in favor of background checks for individuals purchasing a firearm at a gun show (Pew Research Center, 2016). It is clear that political ideology influences perceptions regarding firearm ownership and gun control measures, which may affect individuals’ openness to firearm means safety measures, an important and potentially lifesaving measure in the event of a suicidal crisis.

The Current Study

The robust relationship between firearms and suicide is well-evidenced and the substantial potential benefit of firearm means safety measures to prevent suicide is clear. However, little is known regarding the factors which may impede firearm owners’ willingness to partake in these potentially life-saving practices. This project aims to develop a clearer understanding of the demographics and other characteristics of firearm owners and how these factors may inhibit openness to firearm means safety measures. Specifically, this study examines the relationship between American firearm owners’ political beliefs, region of residence, and their willingness to engage in the means safety

practices of storing their firearm more safely and allowing a trusted individual to hold their firearm during a time of crisis.

We hypothesize that firearm owners from regions and subregions with higher rates of firearm ownership (e.g., the South and Midwest, East and West South Central) will be less open to firearm means safety interventions than those living in regions and subregions with lower rates of firearm ownership (e.g., the West and Northeast, Pacific and New England). We also hypothesize that American firearm owners with conservative political beliefs will be less open to firearm means safety interventions than those with moderate or liberal beliefs. Importantly, we anticipate that these differences will persist after accounting for a range of potential demographic confounds. Findings consistent with our hypotheses would highlight that a particularly effective suicide prevention tool—firearm means safety—ultimately may be ineffective unless it is designed and delivered in a manner capable of overcoming these cultural barriers. This study aids in augmenting current knowledge regarding the factors that may inhibit firearm owners' openness to firearm means safety measures, allowing for more practical, culturally competent interventions to be developed and implemented.

CHAPTER II - METHOD

Participants

A total of 300 firearm owners were recruited via Amazon's Mechanical Turk (mTurk) program. Individuals were required to be adults residing in the US and to own at least one firearm to participate. To ensure careful, valid responses, we restricted the project to only participants who have completed at least 100 projects on mTurk and received at least an average 95% approval rating on all previously completed projects. Research has demonstrated that the quality of data from mTurk is consistent with data collected via other means (Shapiro, Chandler, & Mueller, 2013). Three quality control questions were also embedded into the protocol and failure to answer any of these questions correctly resulted in immediate expulsion from the study. These questions consisted of the following: “*Have you ever used a computer?*,” “*For this question, please select ‘5,’*” and “*For this question, please select ‘sometimes.’*”

Firearm owners in this sample were largely male (53.0%), White (82.3%), married (50.7%), and heterosexual (92%). Participants ranged in age from 20 to 69 ($M = 36.11$, $SD = 9.93$) and most commonly endorsed fiscally moderate (42.3%) and socially liberal (46.0%) political views. Most participants resided in the Midwest region (46.7%) and East North Central (26.3%), South Atlantic (16.0%), and West South Central (12.3%) subregions. The majority of participants in this sample reported living with others (75.7%) rather than alone. Table 1 provides complete demographic information. Table 2 shows mean levels of willingness to partake in means safety measures across variables and covariates of interest.

Table 1 *Sample Demographics*

		Sample (%) N = 300
Gender	Male	53.0
	Female	47.0
Race/Ethnicity	White	82.3
	Black	6.3
	Hispanic/Latino(a)	5.3
	Asian/Pacific Islander	3.7
	Other	2.3
Sexual Orientation	Heterosexual	92.0
	Gay/Lesbian	3.3
	Bisexual	4.7
Marital Status	Married	50.7
	Not married	49.3
Living Situation	Live with others	75.7
	Live alone	24.3
Economic Policy Views	Conservative	36.7
	Moderate	42.3
	Liberal	21.0
Social Policy Views	Conservative	22.0
	Moderate	32.0
	Liberal	46.0
Region	Midwest	46.7
	South	19.7
	Northeast	16.3
	West	16.0
Subregion	East North Central	26.3
	South Atlantic	16.0
	West South Central	12.3
	Middle Atlantic	10.0
	Pacific	9.7
	West North Central	8.0
	Mountain	6.3
	New England	6.3
East South Central	3.7	

Table 2 Mean Levels of Willingness to Partake in Means Safety Measures

		N	Store Safely for Self		Temporarily Remove for Self		Store Safely for Other		Temporarily Remove for Other	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Gender	Male	159	1.42	1.34	1.96	1.57	2.42	1.43	2.33	1.48
	Female	141	2.04	1.56	2.45	1.51	2.86	1.32	2.82	1.41
Marital Status	Married	152	1.64	1.49	2.24	1.56	2.60	1.38	2.68	1.44
	Not married	148	1.78	1.47	2.14	1.56	2.66	1.41	2.44	1.49
Living Situation	Live with others	227	1.68	1.44	2.24	1.53	2.65	1.34	2.65	1.43
	Live alone	73	1.79	1.59	2.01	1.64	2.56	1.55	2.30	1.54
Firearm for Protection	Yes	196	1.65	1.44	2.04	1.51	2.52	1.39	2.39	1.46
	No	104	1.83	1.54	2.46	1.62	2.84	1.37	2.88	1.42
Economic Policy Views	Conservative	110	1.57	1.52	2.07	1.65	2.29	1.55	2.50	1.48
	Moderate	127	1.82	1.41	2.18	1.48	2.79	1.21	2.55	1.44
	Liberal	63	1.73	1.55	2.40	1.57	2.89	1.36	2.70	1.52
Social Policy Views	Conservative	66	1.38	1.53	2.09	1.55	2.21	1.51	2.45	1.56
	Moderate	96	1.72	1.49	1.96	1.59	2.30	1.42	2.39	1.47
	Liberal	138	1.86	1.43	2.39	1.53	3.05	1.19	2.74	1.41
Region	Midwest	140	1.70	1.54	2.27	1.60	2.79	1.30	2.74	1.46
	South	59	1.80	1.58	2.36	1.44	2.44	1.55	2.64	1.34
	Northeast	49	2.12	1.35	2.08	1.62	2.90	1.28	2.59	1.47
	West	48	1.27	1.22	1.90	1.51	2.15	1.46	2.00	1.52
Subregion	East North Central	79	2.00	1.54	2.18	1.58	2.78	1.35	2.66	1.53

Table 2 (continued) *Mean Levels of Willingness to Partake in Means Safety Measures*

South Atlantic	48	1.67	1.55	2.31	1.46	2.33	1.56	2.65	1.31
West South Central	37	1.00	1.33	2.19	1.65	2.70	1.20	2.70	1.39
Middle Atlantic	30	2.07	1.34	2.20	1.63	2.83	1.32	2.63	1.43
Pacific	29	1.45	1.27	1.97	1.48	2.24	1.41	2.00	1.51
West North Central	24	1.79	1.53	2.71	1.60	2.92	1.35	3.04	1.37
Mountain	19	1.00	1.11	1.79	1.58	2.00	1.56	2.00	1.56
New England	19	2.21	1.40	1.89	1.63	3.00	1.25	2.53	1.58
East South Central	11	2.36	1.69	2.55	1.37	2.91	1.45	2.64	1.50

Note: higher mean levels indicate greater willingness.

Measures

Basic Demographics

Basic demographics including gender, age, race, sexual orientation, living situation, marital status, and employment status were assessed through a series of questions developed by the research team and posed at the beginning of the survey. Examples of questions assessing demographic characteristics include: “*what gender do you identify as?*” and “*what is your race/ethnicity?*”

Region of Residence

Region of residence was assessed by asking participants to list the city and state in which they currently live. Regional information will be coded for four US regions (Northeast, Midwest, South, West) and nine subregions (New England, Mid-Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific) using defined boundaries from the US Census Bureau (US Census Bureau, 2010). Subregions are included in addition to the main regions since clarity may be lost by using only four regions—for example, the South region includes the District of Columbia (DC), generally known to be much more liberal than other areas in the South region such as Georgia and Mississippi. The region variable ranges from 1 (*Northeast*) to 4 (*West*), while the subregion variable ranges from 1 (*New England*) to 9 (*Pacific*).

Political Beliefs

Political beliefs were assessed in two ways: using a question developed by the research team and using a subset of items regarding crime and safety from the Social, Political, and Economic Values Inventory (SPEVI; Auger, Devinney, & Louviere 2007).

Used in all primary analyses, the question developed by the research team assessed political beliefs by asking participants to describe their political views using liberal, conservative, and moderate descriptors in the domains of fiscal and social policy. A specific definition of these terms was not provided. This item is scored from 0 (*fiscally conservative/socially conservative*) to 6 (*fiscally liberal/socially liberal*). For use in statistical analyses, this item was split into two recoded items reflecting social and fiscal policy views separately. These items were scored from 1 (*conservative*) to 3 (*liberal*).

The Crime and Public Safety Issues portion of the SPEVI was examined to further assess facets of political ideology deemed relevant to firearm ownership and storage by the research team in exploratory analyses. This section of the larger overall SPEVI measure assessing a variety of social, economic, and political issues (e.g., civil and personal liberties, commercial rights, environmental sustainability, animal welfare) consists of eight items assessing participants' ranked importance of a range of issues related to crime and safety (e.g., protection from violent crime, freedom from harassment, right to private protection; self-defense). See Table 5 for all issues included in the Crime and Public Safety Issues section of the SPEVI. Participants were asked to rank issues from most to least important, such that items are scored from 1 (*most important*) to 8 (*least important*). The SPEVI is designed such that each item must be uniquely ranked (e.g., two separate issues cannot both be ranked as a 6). The SPEVI was used solely in an exploratory fashion in this study for two reasons. First, this measure was originally developed for use in large scale, multi-national demographic surveys and has not yet been tested in psychological studies—thus, its validity and reliability as a psychometric tool has not been established. Second, the ranking of specific issues included in the SPEVI

cannot be directly linked to conservative, moderate, or liberal political beliefs, thus, an exploratory examination of items likely most relevant to openness to means safety was conducted in an attempt to glean further information about the differences in worldviews of American firearm owners who are and are not open to firearm means safety measures.

Openness to Means Safety

To assess openness to firearm means safety measures, we posed a series of questions developed by the research team regarding participants' willingness 1) to store a firearm more securely to prevent their own suicide attempt or an attempt by a loved one and 2) to let a trusted individual temporarily store a firearm if the participant or a loved one became highly distressed. These items are scored from 0 (*not at all open*) to 4 (*extremely open*). Higher scores indicate greater levels of willingness to partake in these means safety practices.

Procedure

Participants accessed the study through a secure link posted on Amazon's mTurk website, which took them to the Qualtrics protocol, where they provided informed consent prior to participation. Participants were awarded \$6 for their participation, a rate commensurate with other Amazon mTurk studies and appropriate for the length of the survey. No personally identifiable information was collected, only a randomly generated, anonymous identification code used for compensation. All procedures were approved by the University of Southern Mississippi Institutional Review Board prior to the initiation of data collection.

Data Analytic Plan

Due to the paucity of previous research examining the variables of interest in this study, a small effect size was used to justify sample size. A power analysis conducted using the GPower computer program demonstrated that a sample size of 300 would be sufficient to yield a small effect size ($f^2 = .02$) with 0.8 power and an alpha level below 0.05 (Faul, Erdfelder, Lang, & Buchner, 2007).

Primary Analyses

Multivariate analyses of covariance (MANCOVA) were used to identify the relationship between political views, region of residence in the US, and openness to firearm means safety measures. Covariates—determined by examining univariate associations with the independent and dependent variables—included gender, marital status, living situation (e.g., alone or with others), and owning a firearm for protection at and/or away from home (e.g., rather than for hunting, as part of a collection, etc.). Due to the significant correlation between the dependent variables in these analyses—willingness to: 1) store a firearm more securely to prevent a suicide attempt by the participant, 2) store a firearm more securely to prevent a suicide attempt by a loved one or someone that lives with the participant, 3) let a trusted individual temporarily store firearm if the participant becomes highly distressed, and 4) let a trusted individual temporarily store a firearm if a loved one or someone the participant lives with becomes highly distressed—two separate MANCOVAs were run. The first MANCOVA included only the self-focused dependent variables (numbers 1 and 3 above) and the second included only the other-focused dependent variables (numbers 2 and 4 above). Independent variables in these analyses were political beliefs (social and economic policy

beliefs) and region of residence (region and subregion). Each MANCOVA was run first using the overall region variable, then with the subregion variable, resulting in four total MANCOVAs. Region and subregion variables were not entered in the same analyses due to their nested nature (e.g., the West region includes the Mountain and Pacific subregions). A Bonferroni correction was used in all MANCOVAs in an attempt to counteract the risk for error and spuriously significant findings. Using the Bonferroni correction, the significance level was .025 for planned contrasts and .0125 for pairwise comparisons. In each analysis, $p\eta^2$ was used as the index of effect size (small = 0.01, medium = 0.06, large = 0.14).

For social and economic policy views, planned contrasts using the liberal category as a reference group were the post hoc tests used to identify specific differences between groups. For region and subregion, since no concrete a priori hypotheses supported the selection of a regional reference group for planned contrasts, pairwise comparisons are examined in an exploratory fashion as a post hoc test to identify specific differences between regions. Planned contrasts and pairwise comparisons were utilized rather than discriminant analysis as they provide more in-depth information regarding the nature of the relationship between levels of the independent variables and the dependent variables and since they allow for complete regional comparisons, albeit in an exploratory fashion that must be considered preliminary in nature due to the high number of comparisons and associated risk of error.

Exploratory Analyses

To further assess political ideology and the potential influence of specific political issues on openness to means safety, Spearman correlations were used to examine the

association between openness to means safety and eight SPEVI items related to crime and public safety in an exploratory manner. Exploratory factor analysis (EFA) was initially considered as the manner of conducting these exploratory analyses; however, parallel analysis and Velicer's MAP test demonstrated that EFA was not appropriate given the high number of factors to extract in relation to the total number of variables. Spearman correlations between 0.10 and 0.29 are considered small, between 0.3 and 0.5 are considered moderate, and 0.5 or higher are considered large.

CHAPTER III - RESULTS

Primary Analyses

Overall, firearm owners in this sample endorsed relatively low levels of willingness to engage in means safety measures (Table 2). Firearm owners were generally more willing to engage in means safety for others rather than for themselves and were more willing to store firearms safely than temporarily remove them from the home.

Overall Region

Means Safety for Self. At the omnibus level, no significant differences in mean levels of willingness to store firearms more safely to prevent one's own suicide attempt or allow a trusted individual to temporarily store firearms if one becomes highly distressed were found for economic policy views (Wilk's $\Lambda = .996$, $F(4, 562) = .27$, $p = .895$, $p\eta^2 = .00$), social policy views (Wilk's $\Lambda = .980$, $F(4, 562) = 1.46$, $p = .214$, $p\eta^2 = .01$), or region (Wilk's $\Lambda = .958$, $F(6, 562) = 2.06$, $p = .057$, $p\eta^2 = .02$).¹ Between-subjects effects cannot be examined for these variables given the absence of significance at the omnibus level.

Means Safety for Others. At the omnibus level, significant differences in mean levels of willingness to store firearms more safely to prevent a suicide attempt by a loved one or allow a trusted individual to temporarily store firearms if a loved one becomes highly distressed were found for social policy views (Wilk's $\Lambda = .943$, $F(4, 564) = 4.22$, p

¹ Significant differences at the omnibus level were found for the covariates of gender (Wilk's $\Lambda = .937$, $F(2, 281) = 9.42$, $p < .001$, $p\eta^2 = .06$) and owning a firearm for protection at and away from home (rather than for another reason) (Wilk's $\Lambda = .976$, $F(2, 281) = 3.49$, $p = .032$, $p\eta^2 = .02$).

= .002, $p\eta^2 = .03$) and region (Wilk's $\Lambda = .951$, $F(6, 562) = 2.36$, $p = .029$, $p\eta^2 = .03$), but not for economic policy views (Wilk's $\Lambda = .992$, $F(4, 562) = .56$, $p = .691$, $p\eta^2 = .00$).²

Between-subjects effects indicated significant differences for willingness to store firearms more safely to prevent a loved one's suicide attempt based on social policy views ($F(2, 295) = 8.38$, $p < .001$, $p\eta^2 = .06$) and region ($F(3, 295) = 3.18$, $p = .025$, $p\eta^2 = .03$). Table 3 provides the results of all between-subjects effects for overall region for both self and other-focused means safety measures. It is important to note that between-subjects effects should only be examined for those variables with a significant omnibus test. Planned contrasts indicated that individuals who endorse liberal social policy views ($M = 3.04$, $SD = 1.52$) are more willing than those who endorse conservative views ($M = 2.20$, $SD = 1.19$) to store firearms more safely to prevent a loved one's suicide attempt. Since no a priori hypotheses supported planned contrasts for region, pairwise comparisons were examined in an exploratory fashion. These comparisons did not indicate any significant differences in willingness to store firearms more safely to prevent a loved one's suicide attempt.

Between-subjects effects indicated significant differences for willingness to allow a trusted individual to temporarily store firearms if a loved one became highly distressed based on region ($F(3, 295) = 2.76$, $p = .042$, $p\eta^2 = .03$). Pairwise comparisons indicated a significant difference in willingness to allow a trusted individual to temporarily store firearms if a loved one became highly distressed between the Midwest and West regions,

² Significant differences at the omnibus level were found for several covariates: gender (Wilk's $\Lambda = .963$, $F(2, 281) = 5.33$, $p = .005$, $p\eta^2 = .04$), age (Wilk's $\Lambda = .962$, $F(2, 281) = 5.55$, $p = .004$, $p\eta^2 = .04$), and owning a firearm for protection (Wilk's $\Lambda = .960$, $F(2, 281) = 5.84$, $p = .003$, $p\eta^2 = .04$).

such that individuals residing in the Midwest ($M = 2.74$, $SD = 1.46$) are more willing than those in the West ($M = 2.00$, $SD = 1.52$).

Table 3 *Between-Subjects Effects for Overall Region*

	Store Safely for Self			Temporarily Remove for Self			Store Safely for Other			Temporarily Remove for Other		
	<i>F</i>	<i>p</i>	$p\eta^2$	<i>F</i>	<i>p</i>	$p\eta^2$	<i>F</i>	<i>p</i>	$p\eta^2$	<i>F</i>	<i>p</i>	$p\eta^2$
Gender	18.20	.000	.06	7.68	.006	.03	8.34	.004	.03	8.08	.005	.03
Marital Status	.01	.928	.00	.01	.929	.00	.03	.867	.00	.91	.342	.00
Age	5.84	.016	.02	1.50	.222	.01	10.97	.001	.04	4.46	.036	.02
Living Situation	1.79	.182	.01	.54	.462	.00	.07	.793	.00	.78	.379	.00
Firearm for Protection	1.78	.183	.01	6.99	.009	.02	5.49	.020	.02	11.30	.001	.04
Economic Policy	.25	.783	.00	.13	.879	.00	.69	.501	.01	.03	.970	.00
Social Policy	.98	.378	.01	1.91	.151	.01	8.38	.000	.06	1.58	.209	.01
Region	2.50	.060	.03	.78	.504	.01	3.18	.025	.03	2.76	.042	.03

Note: Between-subjects effects should only be examined for those variables with significant omnibus results.

Subregion

Means Safety for Self. At the omnibus level, significant differences in mean levels of willingness to store firearms more safely to prevent one's own suicide attempt or allow a trusted individual to temporarily store firearms if one becomes highly distressed were found for subregion (Wilk's $\Lambda = .890$, $F(16, 552) = 2.07$, $p = .008$, $p\eta^2 = .06$), but not for economic policy views (Wilk's $\Lambda = .996$, $F(4, 552) = .29$, $p = .888$, $p\eta^2 = .00$) or social policy views (Wilk's $\Lambda = .997$, $F(4, 552) = 1.64$, $p = .163$, $p\eta^2 = .01$).³

Between-subjects effects indicated significant differences for willingness to store firearms more safely to prevent one's own suicide attempt based on subregion ($F(2, 295) = 43.67$, $p = .006$, $p\eta^2 = .07$). Table 4 provides the results of all between-subjects effects for subregions for both self and other-focused means safety measures. Pairwise comparisons indicated a significant difference in willingness to store firearms more safely to prevent one's own suicide attempt between the East North Central⁴ and West South Central⁵ subregions, such that individuals residing in the East North Central subregion ($M = 2.00$, $SD = 1.54$) are more willing than those in the West South Central subregion ($M = 1.00$, $SD = 1.33$).

Means Safety for Others. At the omnibus level, significant differences in mean levels of willingness to store firearms more safely to prevent a suicide attempt by a loved one or allow a trusted individual to temporarily store firearms if a loved one becomes highly distressed were found for social policy views (Wilk's $\Lambda = .940$, $F(4, 552) = 4.31$, p

³ Significant differences at the omnibus level were found for the covariates of gender (Wilk's $\Lambda = .935$, $F(2, 276) = 9.67$, $p < .001$, $p\eta^2 = .07$) and owning a firearm for protection (Wilk's $\Lambda = .977$, $F(2, 276) = 3.31$, $p = .038$, $p\eta^2 = .02$).

⁴ The East North Central subregion is comprised of Wisconsin, Michigan, Illinois, Indiana, and Ohio.

⁵ The West South Central subregion is comprised of Oklahoma, Arkansas, Texas, and Louisiana.

= .002, $p\eta^2 = .03$), but not for economic policy views (Wilk's $\Lambda = .991$, $F(4, 552) = .61$, $p = .654$, $p\eta^2 = .00$) or subregion (Wilk's $\Lambda = .934$, $F(16, 552) = 1.19$, $p = .268$, $p\eta^2 = .03$).⁶

Between-subjects effects indicated significant differences for willingness to store firearms more safely to prevent a loved one's suicide attempt based on social policy views ($F(2, 295) = 28.60$, $p < .001$, $p\eta^2 = .06$). Planned contrasts indicated that individuals who endorse liberal social policy views ($M = 2.92$, $SD = 1.19$) are more willing than those who endorse conservative views ($M = 2.20$, $SD = 1.52$).

⁶ Significant differences at the omnibus level were found for several covariates: gender (Wilk's $\Lambda = .964$, $F(2, 276) = 5.21$, $p = .006$, $p\eta^2 = .04$), age (Wilk's $\Lambda = .964$, $F(2, 276) = 5.22$, $p = .006$, $p\eta^2 = .04$), and owning a firearm for protection (Wilk's $\Lambda = .961$, $F(2, 276) = 5.57$, $p = .004$, $p\eta^2 = .04$).

Table 4 *Between-Subjects Effects for Subregions*

	Store Safely for Self			Temporarily Remove for Self			Store Safely for Other			Temporarily Remove for Other		
	<i>F</i>	<i>p</i>	$\rho\eta^2$	<i>F</i>	<i>p</i>	$\rho\eta^2$	<i>F</i>	<i>p</i>	$\rho\eta^2$	<i>F</i>	<i>p</i>	$\rho\eta^2$
Gender	18.71	.000	.06	7.96	.000	.03	8.18	.005	.03	7.89	.005	.03
Marital Status	.06	.802	.00	.01	.917	.00	.11	.746	.00	.87	.352	.00
Age	4.59	.033	.02	1.26	.263	.01	10.31	.001	.04	4.27	.040	.02
Living Situation	1.12	.291	.00	.49	.484	.00	.08	.777	.00	.71	.400	.00
Firearm for Protection	2.01	.157	.01	6.60	.011	.02	5.61	.019	.02	10.65	.001	.04
Economic Policy	.32	.728	.00	.14	.868	.00	.81	.447	.01	.01	.993	.00
Social Policy	.96	.383	.01	2.33	.099	.02	8.58	.000	.06	1.72	.180	.01
Subregion	2.77	.006	.07	.74	.660	.02	1.60	.124	.04	1.15	.330	.03

Note: Between-subjects effects should only be examined for those variables with significant omnibus results.

Exploratory Analyses

Significant correlations were found between a number of SPEVI crime and safety issues and openness to means safety variables. Significant correlations were mainly small, with only one moderate correlation and no large correlations. Positive correlations between SPEVI items and openness to means safety variables indicate that as the ranked importance of a SPEVI item increases, willingness to engage in means safety also increases. Negative correlations indicate that as the ranked importance of a SPEVI item decreases, willingness to engage in means safety increases. The SPEVI crime and safety issues *freedom from harassment* ($r_s = .161$) and *right to private protection; self-defense* ($r_s = -.124$) were significantly correlated with willingness to store firearms more safely to prevent one's own suicide attempt. The positive correlation indicates that as individuals rank *freedom from harassment* as more highly important relative to other SPEVI crime and safety issues, their willingness to store firearms safely increases. The negative correlation indicates that as individuals rank *right to private protection; self-defense* as less highly important, their willingness to store firearms safely increases. Willingness to allow a trusted individual to temporarily store firearms if one becomes highly distressed was significantly correlated with the SPEVI issues of *protection from terrorism at home* ($r_s = -.126$), *child pornography and sexual exploitation* ($r_s = .160$), *human slavery and people smuggling* ($r_s = .175$), and *right to private protection; self-defense* ($r_s = -.148$). The SPEVI issues of *safety of personal property* ($r_s = -.136$), *child pornography and sexual exploitation* ($r_s = .238$), *human slavery and people smuggling* ($r_s = .157$), and *right to private protection; self-defense* ($r_s = -.123$) evinced significant correlations with willingness to store firearms more safely to prevent a suicide attempt by a loved one.

Willingness to allow a trusted individual to temporarily store firearms if a loved one becomes highly distressed was significantly correlated with the SPEVI issues of *safety of personal property* ($r_s = -.175$), *child pornography and sexual exploitation* ($r_s = .387$), and *human slavery and people smuggling* ($r_s = .122$). It is important to note that on the SPEVI, participants do not rate how strongly they care about issues. Instead, the importance of each issue is ranked relative to other issues. Spearman correlation coefficients for openness to means safety and all SPEVI crime and safety items can be found in Table 5.

Table 5 Spearman Correlation Coefficients for Exploratory SPEVI Crime & Safety Analyses

SPEVI Crime & Safety Items	Store Safely for Self	Temporarily Remove for Self	Store Safely for Other	Temporarily Remove for Other
	r_s	r_s	r_s	r_s
Safety of personal property	-.030	-.073	-.136*	-.175**
Protection from violent crime	-.071	.054	-.035	.008
Freedom from harassment	.161**	.106	.006	.016
Protection from terrorism at home	-.043	-.126*	-.038	-.056
Child pornography and sexual exploitation	.098	.160**	.238**	.387**
Human slavery and people smuggling	.075	.175**	.157**	.122*
Protection from bribery and corruption	-.036	-.062	-.023	-.001
Right to private protection; self-defense	-.124*	-.148*	-.123*	.071

Note: * $p < 0.05$; ** $p < 0.01$. Positive correlations indicate that as the ranked importance of a SPEVI item increases, willingness to engage in means safety increases. Negative correlations indicate that as the ranked importance of a SPEVI item decreases, willingness to engage in means safety increases. Spearman correlations between 0.10 and 0.29 are considered small, between 0.3 and 0.5 are considered moderate, and 0.5 or higher are considered large.

CHAPTER IV – DISCUSSION

The association between firearms and suicide has been thoroughly studied and the significant potential benefits of firearm means safety in preventing suicide is evident. However, a gap in the knowledge of researchers and clinicians alike exists regarding factors which may hinder the willingness of American firearm owners to engage in means safety practices. This study sought to clarify the relationship between firearm owners' political beliefs, region of residence, and their openness to engage in the means safety practices of storing firearms more safely and allowing a trusted individual to temporarily hold firearms during a time of crisis. We expected that American firearm owners residing in regions with higher rates of firearm ownership would be less open to firearm means safety than those residing in areas with lower rates of firearm ownership. We also anticipated that firearm owners endorsing conservative political beliefs would be less open to firearm means safety than those endorsing moderate or liberal political beliefs.

Overall, economic policy views were not significantly associated with openness to firearm means safety measures. Social policy views were significantly associated with openness to firearm means safety; however, this finding was only significant for means safety measures for others, not for self. Regional variables were significantly associated with openness to some firearm means safety measures, although not across all analyses nor in a manner indicative of a clear difference between regions. No hypotheses were made about the associations between covariates included in our analyses and means safety outcomes; however, we included the results of these associations as footnotes in the Results section and in Tables 3 and 4. Notably, significant differences in mean levels

of openness to means safety measures across all four outcome variables were found based on gender, such that male firearm owners were less open to means safety than were female firearm owners. Given that men more commonly own firearms and die by suicide using firearms than women (CDC, 2016; Parker et al., 2017), lacking willingness to engage in means safety may present a profound obstacle to suicide prevention, particularly in men.

Our findings somewhat supported our hypotheses regarding region of residence. These analyses were largely exploratory, and thus findings should be considered preliminary in nature. Regional variables were not consistently significantly associated with willingness to engage in means safety across means safety variables, nor did they paint a consistent picture of differences in openness to means safety across regions. Significant differences were found between the West and Midwest regions for allowing a trusted individual to temporarily store firearms if a loved one became highly distressed and between the East North Central and West South Central subregions for storing firearms more safely to prevent one's own suicide attempt. However, these were the only significant differences observed and these differences were found for only one of the means safety variables in each instance. Additionally, the regional variables used in this project may be limited in their ability to accurately reflect the nuance of the areas in which individuals reside—these regions and subregions include an amalgam of rural and urban areas, and in some cases, include both typically conservative and liberal areas. Given that individuals who live in rural areas are twice as likely as those in urban areas to own a firearm (Parker et al., 2017), assessing region of residence via a measure of region type (e.g., rural, urban, suburban) may prove more informative than assessing somewhat

arbitrarily delineated regions overall. Furthermore, individuals may more strongly identify with smaller and more local areas and neighborhoods not easily captured by larger, broader regions. Because of this, any sense of geographically-based identity among our participants may not have been fully captured in our variables. Our findings suggest that regional differences exist in the openness to engage in firearm means safety strategies, but further research is needed to more confidently and clearly identify these differences and discuss their impact on the development and dissemination of means safety interventions. Future research on the association between region and openness to firearm means safety should assess region in more broad (by Census Bureau-designated regions or by state) and in more specific, granular (assessing rurality and particular neighborhoods) manners to more fully and accurately capture potential regional differences.

Our findings partially supported our hypotheses in the domain of social policy views—individuals with conservative views were less open to firearm means safety than those with liberal views, but only in terms of means safety for others. Although this finding may not seem surprising, especially given the demonstrated differences between liberals and conservatives in the domain of firearms, it is important in that it provides explicit evidence for this distinction in the realm of firearm means safety specifically and serves as a jumping off point for the increased understanding of reluctance on the part of firearm owners with conservative beliefs, allowing for the development of interventions capable of respectfully recognizing differences and eliciting participation.

A benefit of this study was the ability to examine political beliefs in the domains of fiscal and social policy. Our results indicate that social policy views are more relevant

to the willingness to engage in firearm means safety measures than are economic policy views, an important aspect to understand for future research attempting to conceptualize the interaction between aspects of firearm owners' worldview and their openness to participate in means safety. This finding is potentially explained by the difference between fiscal and social political beliefs and the underlying worldview that these distinct categories may tap into. Although these specific issues were not assessed in this study, it is possible that individuals may feel more strongly or staunchly liberal or conservative in terms of social issues (e.g., healthcare, abortion, and immigration) than economic issues (e.g., government spending and budget, jobs, taxation). Additionally, social issues may simply be more inherently relevant to the topic of firearms and firearm safety. Social issues may more strongly relate to individuals' worldviews overall than economic issues do, thus potentially explaining their increased relevance to openness to engage in firearm means safety. In this sample, only 13.6% of those who endorsed socially conservative views endorsed fiscally liberal views, with most (65.2%) also endorsing conservative fiscal views. In contrast, 21.0% of those who endorsed liberal social views endorsed conservative fiscal views, with 45.7% endorsing moderate and 33.3% endorsing liberal fiscal views. Individuals who endorsed fiscally conservative views were relatively evenly distributed with respect to social views (39.1% conservative; 34.6% moderate; 26.4% liberal), whereas fiscally liberal individuals were by far most likely to endorse liberal social views as well (14.3% conservative; 12.7% moderate; 73.0% liberal). In this sense, socially conservative individuals tended to be conservative fiscally as well, whereas fiscally conservative individuals less readily identified as conservative socially. This may indicate, at least with conservative individuals, that social policy views speak more to the

individual's overall worldview and, as such, may be more relevant to firearm-related issues.

Exploratory analyses examining the correlations between SPEVI crime and safety issues and openness to means safety demonstrated some significant associations. As no a priori hypotheses for these correlations were posited, our findings are preliminary in nature. The SPEVI issue of *right to private protection; self-defense* was significantly correlated with three of four openness to means safety outcomes—specifically, all means safety variables except willingness to allow a trusted individual to temporarily store firearms if a loved one becomes highly distressed. These significant negative correlations indicated that as *right to private protection; self-defense* was ranked as less important relative to other SPEVI crime and public safety issues, willingness to engage in means safety increased. Interestingly, three of four openness to means safety variables (excluding willingness to store firearms more safely to prevent one's own suicide attempt) were significantly positively correlated with the SPEVI issues of *pornography and sexual exploitation* and *human slavery and people smuggling*, indicating that increased importance of this issue relative to other SPEVI items was related to increased willingness to engage in means safety. Willingness to store firearms more safely to prevent a suicide attempt by a loved one and willingness to allow a trusted individual to temporarily store firearms if a loved one becomes highly distressed were both significantly negatively correlated with the SPEVI item *safety of personal property*, meaning that ranking this item as less important relative to other SPEVI items was associated with increased openness to means safety. A limitation of the SPEVI is the clarity of issues presented to participants to rank. Issues in the Crime & Public Safety

section of the SPEVI appeared exactly as written in Table 5 with no further information to aid participants in their understanding of the meaning of the items. This lack of detailed information may have impacted results such that participants unsure of the meaning of issues may have ranked these issues arbitrarily. An additional limitation of the SPEVI is the ranking of issues. Ranking the importance of issues relative to each other does not how capture information about how strongly a participant cares about a particular issue and may obscure meaningful differences in the relative importance of different issues. It is possible that issues related to Crime & Public Safety were generally unimportant to some participants; however, they still ranked them—potentially arbitrarily. Participants may also feel much more strongly about a particular set of issues but, due to the equal weighting of each ranking, true disparities between issues ranked higher and lower are not evident. It is also important to note that although significant correlations were present, these associations were generally small. Exploratory factor analysis (EFA) may have been a more powerful analysis to detect significant associations; however, parallel analysis and Velicer's MAP test demonstrated that EFA was not appropriate given the high number of factors to extract in relation to the total number of variables. Thus, although these results are preliminary in nature and are somewhat limited in their statistical sophistication and rigor, our findings suggest that future research examining the relationship between openness to means safety and specific issues or facets of political ideology may be beneficial to further elucidate how differences in firearm owners' worldviews may influence their willingness to engage in means safety.

Limitations

Several limitations in this project must be noted. First, the data used are cross-sectional and self-report. However, our hypotheses did not necessitate a longitudinal design and several checks were put in place to help assure the accuracy and validity of the self-report mTurk data collected. Second, the sample used may not be entirely representative of American firearm owners overall. Participants were not screened and selected for certain representative demographics other than those critical to our hypotheses (adult American firearm owners) and although certain characteristics of our sample were fairly representative (the nearly equal split between male and female participants, for example), other aspects were more indicative of the group of individuals who chose to participate in our study (46.7% of our sample reported residing in the Midwest, for example) rather than the US overall. Additionally, participants were incentivized financially to participate in our study, a factor which may have introduced selection bias and could also impair the generalizability of our findings. A third important limitation to note is that a definition of political beliefs was not provided to participants, meaning that we relied on their knowledge of and assumptions about the terms “conservative,” “moderate,” and “liberal,” rather than clearly identifying a definition to ensure standardization across responses. However, studies of Americans’ perceptions about political beliefs have shown that individuals typically have a similar conception about the characteristics of and differences between these categories (Pew Research Center, 2012). Furthermore, the omission of a definition of different groups of political beliefs could be beneficial to our study design. Providing a rigid definition of beliefs and asking participants to choose an option may result in the feeling of forced choice, even

when participants do not necessarily agree with the definition for their views provided. Without a specific definition, participants choose the descriptor of their fiscal and social policy views that feels most accurate to them, and although this creates a limitation in that we do not have insight into the characteristics that influence their election of a descriptor, it also allows for freer and potentially more accurate responding. Fourth, as discussed previously, participants were more willing to partake in means safety measures in the event of another's suicide attempt compared to their own suicide attempt. One possible explanation for this finding is the simple notion that many individuals do not feel like they would ever attempt suicide and may have thus responded with a low level of willingness, since they see the likelihood of making a suicide attempt very low and thus, means safety measures unnecessary. In future studies, this could potentially be counteracted by adding a note to the self-focused means safety items that reads: "regardless of whether you have been suicidal in the past, imagine a moment in which you are feeling suicidal in the future." Fifth, the measures used in this study are somewhat limited in their reliability and validity as they have either been developed by the research team (to assess for political views and demographics) or have not been previously tested in psychological studies (the SPEVI, used in exploratory analyses examining beliefs about specific issues related to crime and safety), thus their psychometric properties are not fully known. Last, an important limitation in this study regarding the data analyses and risk for error must be noted. Although four MANCOVAs is not an inordinate number of primary analyses, the numerous pairwise comparisons for regional variables within the MANCOVAs do increase the risk for error and spuriously significant findings. We attempted to counteract this as much as possible by using a

Bonferroni correction in the MANCOVAs and by framing our exploratory analyses as preliminary in nature, but the possibility for error, especially for regional pairwise comparisons, must still be highlighted as a limitation. It is important to note that Bonferroni corrections are quite conservative post-hoc tests. Given the number of comparisons in our analyses, the Bonferroni corrections used may have severely limited the possibility of discovering both spuriously significant findings and true significant results. However, we felt that a more conservative approach was appropriate given the preliminary and exploratory nature of our analyses, opting to avoid any false positives despite the risk that doing so may have suppressed the ability to find actual significant findings.

Conclusion

Despite these limitations, this study provides an important incremental benefit to the understanding of factors which influence gun owners' willingness to engage in firearm means safety practices, measures shown to be effective in preventing suicide and especially relevant given that firearms account for approximately half of all suicides annually in the US. As Bryan, Stone, and Rudd (2011) note, requests made by clinicians to temporarily remove or otherwise limit access to firearms may be met with substantial resistance by individuals with strong social or political beliefs related to firearms, or by individuals who belong to certain communities or cultural groups, such as law enforcement, military, or those who reside in rural areas. Our results, while preliminary, provide further context for the development and implementation of efficacious clinical and public health means safety measures capable of overcoming potential geographical and sociopolitical barriers to adherence by demonstrating that social policy views and

region of residence are relevant to individuals' willingness to participate in firearm means safety. Further research is needed in this domain, as knowledge of the potential obstacles to engagement in firearm means safety—whether due to demographic, regional, worldview, or other factors—is essential to the culturally competent framing required for acceptance of and commitment to implement these potentially live saving measures. Collaborations among suicide prevention organizations, researchers, gun shops, and firearm organizations demonstrate that culturally competent interactions are possible and highlight the need for means safety messaging and interventions created in partnership with firearm owners (Barber, Frank, & Demicco, 2017; Brassard, 2016). Additionally, motivational interviewing frameworks for means safety counseling have shown a great deal of promise, especially for individuals who may be ambivalent about or resistant to changing their firearm storage practices (Britton, Bryan, & Valenstein, 2016). Such approaches recognize and work with the perspective of the interviewee and may prove invaluable in efforts to elicit behavior change among firearm owners. Our findings contribute to an improved understanding of openness to means safety strategies based on specific demographic and sociopolitical factors, important elements to take into account when implementing means safety messaging or interventions through partnerships with the firearm-owning community, utilizing motivational interviewing frameworks, or via another approach.

APPENDIX A – IRB Approval Letter



INSTITUTIONAL REVIEW BOARD
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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 17011101
PROJECT TITLE: Worldviews and home safety ideas among American gun owners
PROJECT TYPE: New Project
RESEARCHER(S): Michael Anestis and Joye Anestis
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 01/23/2017 to 01/22/2018
Lawrence A. Hosman, Ph.D.
Institutional Review Board

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