

# Awash in a Sea of Faith and Firearms: Rediscovering the Connection Between Religion and Gun Ownership in America

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*The United States is awash in a sea of both faith and firearms. Although sociologists and criminologists have been trying to understand the predictors of gun ownership in the United States since the 1970s, it has been over two decades since social scientists of religion have been part of this important conversation. Consequently, religion is nothing more than a control variable in most studies of gun ownership. Even then, scholars have rarely gone beyond a basic measure of religious affiliation in which Protestant = 1 (else = 0). This article therefore seeks to bring social scientists studying religion back into the conversation about gun ownership in America and to move the discussion forward incrementally. It does so in three ways. First, it employs a more sophisticated measure of religious affiliation than has been used to study gun ownership in the past. Second, it measures religiosity beyond simply religious affiliation. Third, it recognizes and seeks to specify some of the various ways in which the relationship between religion and gun ownership may be mediated by other religiously influenced sociopolitical orientations. Using data from the 2006–2014 General Social Survey, hierarchical binary logistic regression models show significant effects of evangelical Protestant affiliation, theological conservatism, and religious involvement on personal handgun ownership.*

**Keywords:** *firearms, religious affiliation, conservative theology, evangelical Protestants, gun ownership.*

## INTRODUCTION

Unique among the industrial democracies of the modern West, the United States is both “awash in a sea of faith” (Butler 1990) and awash in a sea of firearms. The Small Arms Survey (2011) has estimated that there are 270 million civilian owned firearms in the United States, including handguns, rifles, and shotguns. Although this amounts to nearly one firearm for every person in the country, these weapons are not evenly distributed through the population. A majority of the adult population does not personally own any guns or even have a gun in their household. The minority of Americans who do own guns frequently own more than one. A 2004 national firearms survey found that 48 percent of individual gun owners own four or more firearms, and 3 percent own more than 25 firearms. The average number of firearms owned among those who own any is 6.6. As many as two-thirds of guns, therefore, are owned by just 20 percent of gun owners (Hepburn et al. 2007).

Sociologists and criminologists have been trying to understand the predictors of gun ownership in the United States since the 1970s, but it has been over two decades since social scientists

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of religion have been part of this important conversation. Consequently, religion is nothing more than a control variable in most studies of gun ownership, and early insights into the way religion influences gun ownership have been forgotten over the years. This brief work seeks to help social scientists studying religion rediscover the issue of gun ownership in America and to move the discussion forward incrementally. Using hierarchical binary logistic regression modeling techniques on General Social Survey (GSS) data from 2006 to 2014, this article does so in three ways. First, it employs a more sophisticated measure of religious affiliation than has been used to study gun ownership in the past. Second, it measures religiosity beyond simply religious affiliation. Third, it recognizes and seeks to specify some of the various ways in which the relationship between religion and gun ownership is mediated by other religiously influenced sociopolitical orientations.

### LITERATURE REVIEW

The major demographic predictors of gun ownership are well established in the scholarly literature. Indeed, in his comprehensive survey of *Trends in American Gun Ownership*, Legault (2008:59) concludes that “modern information regarding legal gun ownership in the United States is relatively tedious in its agreement. Through a variety of samples, research designs, and methodologies, from simple to complex, there is a resounding consensus in scientific literature on the topic.” The statistically average gun owner is a married white man living in the rural South or West who is politically conservative, middle-aged, and middle class (Bordua and Lizotte 1979; Celinska 2007; Cook and Ludwig 1996; Dixon and Lizotte 1987; Ellison 1991a; Kleck 1997; Legault and Lizotte 2009; Little and Vogel 1992; Lizotte and Bordua 1980; Newton and Zimring 1969; O’Connor and Lizotte 1978; Smith and Smith 1995; Wright and Marston 1975; Wright, Rossi, and Daly 1983; Young, McDowall, and Loftin 1987).

#### Protestantism and Gun Ownership

Previous studies have also consistently found the statistically average gun owner to be Protestant. The positive relationship between Protestant religious affiliation and gun ownership is one of the best established, albeit least well-explained, findings in the literature on gun ownership in America. In most cases, a “Protestant” dummy variable (Protestant = 1, else = 0) is included as a control variable in statistical models predicting gun ownership, with other variables serving as the analytical focus such as the southern culture of violence (Dixon and Lizotte 1987; Ellison 1991a, 1991b; O’Connor and Lizotte 1978), individualism (Celinska 2007), confidence in government (Jiobu and Curry 2001), collective security (Kleck and Kovandzic 2009), and fear of crime (DeFronzo 1979). As I discuss below, some of these other variables are important to understand the relationship between religion and gun ownership, but this connection is generally unexamined in the existing literature.

In just a few cases, all based on data collected in the 1980s, religion itself has been the center of attention in explaining gun ownership. Using a survey of 850 adults in Mecklenburg County (North Carolina), Little and Vogel (1992) found that 68 percent of Protestants, 6 percent of Catholics, and 26 percent of “other religious groups” own handguns, an association that was statistically significant ( $p < .03$ ) after controlling for several demographic factors. They conclude that, for Protestants, gun ownership represents an affirmation of a traditional way of life (following Wright and Marston 1975) or socialization into a rural southern culture (Young 1989); however, Little and Vogel do not explain why this applies more to Protestants than to other religious groups.

Like Little and Vogel, Ellison (1991a) uses religion to help explain the strength of southern gun ownership. Analyzing GSS data from 1984, 1987, 1988, and 1989, Ellison finds the effect of Protestant religious affiliation on personal gun ownership is significant even controlling for

Table 1: Percentage personal handgun ownership (PHO)

All Respondents	14.7
All Protestant	17.8
RELTRAD categories	
Evangelical Protestant	20.0
Mainline Protestant	17.0
No religious affiliation	14.9
Black Protestant	13.5
Catholic	11.5
Jewish	10.1
Other religions	6.7

*Note:* General Social Survey 2006–2014 pooled multiple imputation data ( $N = 3,609$ ), weighted by WTSSNR. Cramer's  $V$  test for association between RELTRAD and PHO = .12,  $p < .001$ .

age, gender, income, education, and native southern and native rural residence. After introducing variables for attitudes toward defensive violence, racial prejudice, and political conservatism, the effect of Protestant affiliation goes down, but remains statistically significant. Adding hunting also reduces the effect of Protestant affiliation, but it again remains a statistically significant and positive predictor of gun ownership (Ellison 1991a:276).

Although they go beyond simply using religion as a control variable in their analyses, both Little and Vogel (1992) and Ellison (1991a) still employ the conventional operationalization of religion in studies of gun ownership: Protestant = 1, else = 0. As social scientists of religion rediscover the study of gun ownership, it will be important to go beyond the common practice of employing a dichotomous variable for whether the respondent is Protestant or not. A better assessment of the relationship between religion and gun ownership must begin with better measurement of religion. The present study does this by using Steensland et al.'s (2000) landmark categorization of denominational affiliations into religious traditions (a.k.a. RELTRAD).

The fruits of this approach are apparent in examining the basic distribution of personal handgun ownership (PHO) in the American population. Table 1 shows the higher rate of personal gun ownership among all Protestants (= 1) compared to the population as a whole (17.8 percent vs. 14.7 percent). But using Steensland et al.'s RELTRAD categories highlights significant differences between evangelical (20.0 percent PHO), mainline (17.0 percent), and black Protestants (13.5 percent) once those traditions are unpacked. Although even black Protestants have higher rates of PHO than Catholics (11.5 percent), Jews (10.1 percent), and religious others (6.7 percent), they own handguns at lower rates than those with no religious affiliation (14.9 percent).

### Religiosity and Gun Ownership

Better understanding the relationship between religion and gun ownership requires not only getting beyond the Protestant or not dichotomy, but also introducing additional measures of religiosity. Only Young (1989) has examined religion beyond the basic measure of affiliation. Using 1982, 1984, and 1985 GSS data, Young (1989) includes a basic dummy variable for Protestant (= 1, else = 0), but also includes a dummy variable for fundamentalism, operationalized by a belief that the Bible is the literal word of God (= 1, else = 0). Focusing only on white males in the sample, Young observes that the connection between Protestantism and gun ownership exists only for nonhunters. Among hunters, 81 percent of Protestants and 79 percent of others own guns. But in his final multivariate model, Young finds no significant effect of either Protestant identification or fundamentalism on gun ownership. In a later study using data from the 1988 GSS, Young and Thompson (1995) similarly find no relationship between membership in

fundamentalist denominations and gun ownership, but they did find that viewing God as punitive significantly predicted gun ownership for African-American respondents (but not for whites).

Hempel, Matthews, and Bartkowski (2012) offer a path forward from these early studies of Young (1989) and Young and Thompson (1995) by understanding theological conservatism (including fundamentalism) as more than denominational affiliation or a single variable for biblical literalism. Following Woodberry and Smith (1998:36), who argue that conservative Protestantism should be measured as a latent construct using several beliefs whenever possible, they model “theological conservatism as a latent construct reflected in personal convictions toward scripture (the authoritativeness of the Bible), sin (beliefs in human depravity and the existence of hell), and salvation (the need for a born-again experience to be saved)” (Hempel, Matthews, and Bartkowski 2012:523; see also Hempel and Bartkowski 2008). Examining the relationship between theological conservatism and generalized trust, Hempel, Matthews, and Bartkowski (2012:538) find “Protestant theological conservatism may act as a form of ‘risk reduction’ that limits how far radii of trust are extended to a world characterized by sin.” Insofar as gun ownership can also be conceived of as a risk reduction strategy (Kleck 1997; Kleck and Kovandzic 2009), a possible connection between theological conservatism and gun ownership should be explored empirically, above and beyond religious tradition.

It is also important to consider behaviors alongside affiliation (belonging) and beliefs as an important measure of personal religiosity that could be related to gun ownership, as they are for so many social and political beliefs and practices (Leege and Kellstedt 1993). Social scientists have found religious involvement, both attendance at religious services and other involvement in religious organizations, to influence any number of outcomes (e.g., Acevedo, Ellison, and Xu 2014; Beyerlein and Hipp 2006). As no one has directly examined the effect of religious involvement on gun ownership, we can only speculate on possible connections based on research on other outcomes. For example, Matthews, Johnson, and Jenks (2011) find religious involvement related to lower levels of fear of certain types of crime. They connect higher levels of religious involvement to lower levels of fear through the lower levels of misanthropy among those who are more religiously involved. To the extent that Americans are increasingly owning handguns for purposes of self-defense (as opposed or in addition to long guns for hunting and sport shooting), there may be a negative relationship between religious involvement and gun ownership. At the same time, we should also be mindful of the possibility that the effect of religious involvement varies by religious tradition. For example, in a more gun-friendly religious tradition like evangelical Protestantism, religious involvement could reinforce higher levels of gun ownership, while in a less gun-friendly religious tradition like black Protestantism, religious involvement could reinforce lower levels of gun ownership. This article examines both of these possibilities.

### **Factors Mediating Religion and Gun Ownership**

Finally, a more complex understanding of the relationship between religion and gun ownership will consider not only the direct effects of religion, but also the indirect effects. The existing literature highlights some predictors of gun ownership that are themselves predicted by religion. Among the factors that mediate the relationship between religion and gun ownership are lack of confidence in government, individualistic sociopolitical views, and punitive attitudes toward crime.

Jiobu and Curry (2001) examine the connection between lack of confidence in government and gun ownership. They use 1982–1996 GSS data to show that, net of many controls (including political liberalism/conservatism), those who lack confidence in the government are more likely to own guns. Among those who are less likely to have confidence in government and more likely to own guns in Jiobu and Curry’s study are Protestants (here, again, defined as = 1, else = 0), suggesting both direct and indirect effects of Protestant affiliation on gun ownership.

Ellison's (1991a) early attempt to explain southern gun ownership examines the influence of "rugged individualism," but, of course, he recognizes that this cultural individualism is not limited to the South. More recently, Celinska (2007) uses 1984–1998 GSS data to test whether those who are more individualistic are more likely to own guns compared to those who are more collectivist in their sociopolitical outlooks. She finds that both Protestant affiliation and individualism predict gun ownership in a multivariate logistic regression model with many controls, and that Protestant affiliation is a predictor of individualism (Celinska 2007:241). That is, Protestant affiliation has both a direct effect on gun ownership and an indirect effect through individualistic sociopolitical views.

The punitive nature of American culture in comparison to citizens of other Western democracies is frequently noted, as is the connection between religion and punitive attitudes (Unnever, Cullen, and Applegate 2005). Early on, Stinchcombe et al. (1980) observed a relationship between punitiveness toward criminals and gun ownership, a finding later supported by Young (1985). Young and Thompson's (1995) study of fundamentalism, punitiveness, and gun ownership builds on these earlier works and finds the relationship between these three phenomena complex. Nonetheless, each of these studies suggests the importance of considering the mediating role of punitiveness in understanding the connection between religion and gun ownership.

## Hypotheses

Based on this review of the sparse literature on religion and gun ownership in the United States, this study contributes to our understanding of the connection between faith and firearms by testing the following hypotheses. Net of other demographic factors known to predict gun ownership, such as age, gender, race, marital status, education, income, region, size of place, and hunting:

H1: Evangelical Protestant affiliation will be positively associated with PHO.

H2: Theological conservatism will be positively associated with PHO.

H3: Organizational religious involvement will be negatively associated with PHO.

Recognizing that (a) individuals who are more politically conservative, individualistic, and punitive, and who have lower levels of confidence in governmental institutions, are more likely to own guns (see bivariate correlations in Table 2), and (b) that evangelical Protestants and theological conservatives are more likely to be politically conservative, individualistic, and punitive, and less likely to have confidence in governmental institutions:

H4: The effect of evangelical Protestantism and theological conservatism on PHO will be mediated by several sociopolitical orientations.<sup>1</sup>

## DATA AND METHODS

Data for this study come from the GSS, administered by the University of Chicago's National Opinion Research Center (2015). The GSS is a stratified, multistage area-probability sample of clusters of households in the continental United States. To be able to test more complex models, I aggregate the surveys from 2006, 2008, 2010, 2012, and 2014 (release 2) into a single dataset. Although some questions of potential interest do not appear from 2006 forward (e.g., defensive attitudes) (Ellison 1991a, 1991b), these years were selected because they are recent and because

<sup>1</sup>Based on the existing literature, lack of generalized trust (i.e., misanthropy) was initially predicted to be a mediator between religion and personal gun ownership, but was dropped as a variable due to its lack of explanatory power in preliminary models.

Table 2: Descriptive and bivariate statistics

		Mean or %	SD	Correlation with DV
<i>Dependent variable</i>				
R personally owns handgun	1= yes	14.7%	—	—
<i>Religious affiliation</i>				
Evangelical Protestant	1= yes	23.9%	—	.083***
Mainline Protestant	1= yes	14.0%	—	.026
Black Protestant	1= yes	7.4%	—	-.010
Catholic	1= yes	26.9%	—	-.055***
Jewish	1= yes	2.4%	—	-.021
Other	1= yes	6.6%	—	-.060***
None	1= yes	18.8%	—	.002
<i>Religiosity</i>				
Theological conservatism	Index of: literal view of Bible (=1) + born again (=1) + encouraged others to believe in Jesus Christ (=1) ( $\alpha = .72$ )	1.11	1.14	.032
Religious involvement	Index of: attend religious services + attend activities at place of worship other than services ( $\alpha = .79$ )	5.49	4.64	-.024
<i>Demographic controls</i>				
Male	1= yes	46.5	—	.199***
Married	1= yes	55.3	—	.089***
White	1= yes	74.5	—	.097***
Age	18–89+ years	46.62	17.04	.128***
Education	0–20 years	13.49	3.13	.051**
Income	1= under \$1,000 to 25 = \$150,000+	17.43	5.55	.137***
Respondent hunts	1= yes	12.0%	—	.320***
<i>Geographic controls</i>				
Rural/small town native	1= residence <50,000 population at age 16 and at time of interview	14.8%	—	.087***
Rural/ST in-migrant	Not rural/ST at age 16 but currently rural/ST	3.2%	—	.020
Rural/ST out-migrant	Rural/ST at age 16 but not currently	36.2%	—	.049**
Southern native	1=lived in following state at age 16 and at time of interview: Delaware, Maryland, West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida, DC, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Oklahoma, Louisiana, Texas	27.3%	—	.100***

(Continued)

Table 2 (Continued)

		Mean or %	SD	Correlation with DV
Southern in-migrant	Not southern at age 16 but currently southern	10.4%	—	-.026
Southern out-migrant	Southern at age 16 but not currently	3.0%	—	.015
Great Plains/Mountain West native	1= Lived in following state at age 16 and at time of interview: Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, South Dakota, Montana, Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico	8.6%	—	.077***
GP/MW in-migrant	Not GP/MW at age 16 but currently GP/MW	3.9%	—	.036*
GP/MW out-migrant	GP/MW at age 16 but not currently	2.2%	—	-.005
<i>Mediating factors</i>				
Political conservatism	1= extremely liberal to 7 = extremely conservative	4.14	1.45	.106***
Individualism	Index of views on extent to which government (=1) versus individuals (=5) should help poor Americans + solve the country's problems + help paying medical bills + help improve blacks' standard of living ( $\alpha = .77$ )	12.12	3.85	.180***
Punitiveness	1=Favors death penalty for persons convicted of murder	63.3%	—	.173***
Confidence in government	Index of how much confidence in executive branch + Supreme Court + Congress (1=hardly any confidence at all, 2=only some confidence, 3=a great deal of confidence) ( $\alpha = .66$ )	5.67	1.56	-.118***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (two-tailed tests). General Social Survey 2006–2014, pooled multiple imputation data ( $N = 3,609$ ), weighted by WTSSNR. Pearson phi (mean square contingency) or point biserial correlation coefficients depending on level of measurement.

starting in 2006, the GSS was administered in both English and Spanish. Missing data for the independent variables in these analyses were replaced using the multiple imputation function in SPSS 22.<sup>2</sup>

<sup>2</sup>Specifically, the multiple imputation procedure generated 10 imputed datasets using Markov chain Monte Carlo (MCMC) estimates based on all the independent and dependent variables in the full model (Acocck 2005; Johnson and Young 2011; Penn 2007). SPSS 22 reports as output the parameter estimates for the original data, each of the 10 individual imputations,

## Dependent Variable

As the literature review above makes clear, the GSS has been used extensively to model gun ownership rates from a variety of perspectives. Although the presence of a firearm in the respondent's *household* is a frequently used dependent variable in studies of gun ownership, the individual-level predictors employed in this study make *personal* gun ownership a more appropriate explanandum.<sup>3</sup> Moreover, as Young (1989) observes, the way religion relates to gun ownership for purposes of hunting is different from other motivations for gun ownership like self-defense. Therefore, understanding the effect of religion on gun ownership suggests a focus on ownership of those guns used least for hunting, namely, *handguns*.

Following Ellison (1991a), PHO is operationalized as those who responded "yes" to the question "Do you happen to have in your home (IF HOUSE: or garage) any guns or revolvers?" and "pistol" to the question "Is it a pistol, shotgun, rifle, or what?" and "yes" to the question "Do any of these guns personally belong to you?" As shown in Tables 1 and 2, 14.7 percent of the GSS respondents report personally owning a gun and having a handgun in their home.<sup>4</sup>

## Independent Variables: Religion

Religious tradition is operationalized using Steensland et al.'s (2000) RELTRAD coding to divide respondents into seven categories: evangelical Protestant, mainline Protestant, black Protestant, Catholic, Jewish, other religions, and no religious affiliation. This study uses dummy variables for six religious traditions with evangelical Protestant being the reference category.

Following Hempel, Matthews, and Bartkowski (2012), an index variable is constructed to measure theological conservatism using three measures: the respondent's view of the Bible (recoded as a binary variable where literal interpretation of the Bible = 1), whether the respondent had ever had a born-again experience (yes = 1), and whether the respondent had ever encouraged someone to believe in Jesus Christ (yes = 1). These three items result in an acceptably reliable index (Cronbach's alpha = .72).<sup>5</sup>

Finally, religious involvement is measured as a linear combination of the respondents' scores for frequency of attendance at religious services and taking part in activities and organizations at a place of worship other than religious services (Cronbach's alpha = .79).

as well as an overall estimate, standard error, and significance level based on an average of the imputations. All statistics reported here are from these "pooled" data.

<sup>3</sup>Because it samples households rather than individuals, for household-level variables, the GSS is self-weighting; however, because the number of individuals in a household varies, the probability of selection differs based on household size and this must be corrected by weighting the sample. Also, from 2004 forward, the GSS uses a two-stage subsampling design for nonresponse, so responses from those converted from nonresponse need to be weighted to represent all nonrespondents. Finally, a weight needs to be applied to adjust for differential response rates across areas. In these analyses, I apply the GSS weight WTSSNR, which adjusts for all three of these response biases while essentially maintaining the original sample size (National Opinion Research Center 2015, Appendix A: Sample Design and Weighting).

<sup>4</sup>There is a clear tradeoff in this choice. I recognize, with Ellison (1991a), that this is not a direct measure of personal handgun ownership because respondents could simply live in households with handguns but only own long guns themselves. On the other hand, that rural, male hunting culture can be overly represented with a broader explanandum is suggested by supplementary analyses (not shown) in which the full model shown in Table 3 is run using dependent variable *respondent owns any gun*. This produces largely similar results, but noticeable increases in the odds ratios for respondent hunts (10.15 compared to 4.87 for respondent owns handgun), is a rural native (2.51 vs. 1.81), and is male (3.46 vs. 2.27). I stop short of employing the approach of Hill, Howell, and Driver (1985:545), though, in defining "protective handgun ownership" as those who personally own a handgun but do not hunt.

<sup>5</sup>Unfortunately, the GSS question on perceptions of hell that Hempel, Matthews, and Bartkowski (2012) include in their index is only available in the 2008 GSS and so is not included in this study.

## Mediating Variables

Four key variables mediating the relationship between religion and PHO are political conservatism, individualistic sociopolitical views, punitiveness, and confidence in government. Political conservatism is measured using the following question: "We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal (point 1) to extremely conservative (point 7). Where would you place yourself on this scale?"

Individualism is measured, following Celinska (2007), as an unobserved latent construct based on four questions about the respondent's view of the proper role of the government. The first question is phrased: "Some people think that the government in Washington should do everything possible to improve the standard of living of all poor Americans; they are at point 1 on this card. Other people think that it is not the government's responsibility, and that each person should take care of himself; they are at point 5. Where would you place yourself on this scale?" The other three questions ask about whether the government is doing too little or too much, the government role in healthcare, and the government role in helping blacks. Adding the responses to these four questions together results in an acceptably reliable index (Cronbach's alpha = .77).

Punitiveness is measured, following Young and Thompson (1995) and Unnever, Cullen, and Applegate (2005), by the respondents' attitude toward the death penalty. The GSS asks: "Do you favor or oppose the death penalty for persons convicted of murder?" A dichotomous measure is employed here with favor = 1, else = 0.

Confidence in government is measured, following Jobu and Curry (2001), as the sum of three questions about the respondent's confidence in (1) the executive branch of government, (2) the Supreme Court, and (3) Congress. For each item, response categories are 1 = Hardly any confidence at all, 2 = Only some confidence, and 3 = A great deal of confidence. The index constructed from these three items is marginally acceptable (Cronbach's alpha = .66), but given its successful use in previous studies, I include it in these models.

## Demographic Control Variables

Based on past research on correlates of gun ownership, this study includes a number of demographic and geographic control variables, including: gender, marital status, race, age, education, income, size and region of residence, and whether the respondent hunts. Coding, descriptive statistics, and bivariate correlations with PHO for these control variables are given in Table 2.

## Analytic Strategy

My analytic strategy is to begin by documenting the relationships between PHO and evangelical Protestant affiliation, theological conservatism, and religious involvement, and then to see whether those relationships persist after additional control and mediating variables are added to the equation. Because the dependent variable in this study is dichotomous (PHO = 1, else = 0), I specify binary logistic regression models. The parameter estimates for a logistic regression model indicate the rate of change in the log-odds of the dependent variable for a one-unit change in the independent variable. Because this is difficult to interpret, the logistic regression coefficients are exponentiated to produce an odds ratio. This is interpretable as the increase in the odds of the outcome of interest for each one-unit change in the explanatory variable. Odds ratios > 1 indicate a positive relationship between the independent and dependent variables, while odds ratios < 1 indicate a negative relationship.

Table 3: Odds ratios for hierarchical binary logistic regression of personal handgun ownership on selected independent variables

	I	II	III	IV
<i>Religious affiliation</i>				
Mainline Protestant	.75	.58**	.59**	.65*
Black Protestant	.51**	.86	.89	1.19
Catholic	.48***	.72	.73	.86
Jewish	.36*	.44	.48	.53
Other religion	.27***	.39**	.42**	.43*
No religion	.58**	.76	.83	.95
<i>Religiosity</i>				
Theological conservatism	1.01	1.15*	1.15*	1.15*
Religious involvement	.96**	.93***	.93***	.94***
<i>Demographic controls</i>				
Male		2.44***	2.41***	2.27***
Married		.92	.91	.90
White		1.34	1.28	1.03
Age		1.03***	1.03***	1.03***
Education		1.04	1.04	1.05*
Income		1.10***	1.10***	1.09***
R hunts		5.48***	5.34***	4.87***
<i>Geographic controls</i>				
Rural native		1.76***	1.78***	1.81***
Rural in-migrant		1.44	1.45	1.34
Rural out-migrant		1.52***	1.51**	1.49**
Southern native		2.38***	2.32***	2.31***
Southern in-migrant		1.38	1.37	1.43
Southern out-migrant		.95	.97	.96
GP/MW native		2.39***	2.35***	2.28***
GP/MW in-migrant		3.39***	3.25***	3.21***
GP/MW out-migrant		.87	.88	.84
<i>Mediating variables</i>				
Political conservatism			1.12**	1.02
Individualism				1.05**
Punitiveness				2.26***
Confidence in government				.87***
Constant	-1.09***	-6.81***	-7.21***	-7.80***
Nagelkerke $R^2$	.03	.26	.29	.32

Notes: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$  (two-tailed tests). General Social Survey pooled multiple imputation data for 2006–2014 ( $N = 3,609$ ), weighted by WTSSNR. Constant reported is unstandardized logistic regression coefficient ( $b$ ). Nagelkerke  $R^2$  reported is computed average across 10 imputed datasets.

### RESULTS

Table 3 reports the results of the hierarchical binary logistic regressions predicting PHO. The baseline Model I includes only the measures of religious affiliation and religiosity. It shows that, relative to evangelical Protestants, members of every religious tradition except mainline Protestants have lower odds of PHO. Religious involvement is negatively related to PHO, but theological conservatism is not.

Model II provides the direct test of the first three hypotheses. H1 is only partially supported. Only relative to mainline Protestants (odds ratio .58,  $p < .01$ ) and other religions (.39,  $p < .01$ ) do evangelical Protestants have higher odds of PHO, net of the demographic and geographic controls. That the negative effects of black Protestant, Catholic, Jewish, and no religious affiliations on PHO seen in Model I have disappeared with the introduction of these controls suggests that members of these traditions are less commonly found in those geographic areas in which gun culture is stronger (rural, southern, Great Plains and Mountain West) and are less likely to hunt.

H2 and H3 are supported more unequivocally. As seen in Model II, theological conservatism is positively related to PHO (1.15,  $p < .05$ ) and religious involvement is negatively related to PHO (.93,  $p < .001$ ), as predicted. The strength of the religious involvement effect relative to theological conservatism is particularly impressive, but also recalls the question of whether the effect of religious involvement differs by religious tradition. Supplementary analyses (not shown) using RELTRAD\*INVOLVEMENT interaction terms found no significant differences across traditions. Moreover, running these same models predicting PHO only for evangelical Protestants yields a statistically significant and negative coefficient for religious involvement. This suggests that religious involvement does, in fact, have a negative effect on gun ownership across religious traditions. The results in Model II that support H1 (partially) and H2 and H3 (more fully) persist in Models III and IV.

Models III and IV test H4: that the effect of evangelical Protestantism and theological conservatism on PHO will be mediated by several sociopolitical orientations. The results shown support this hypothesis only partially and weakly. Support for H4 can be seen in the increase in the odds ratios for the religious tradition variables from Model II to Model III to Model IV (e.g., from .58 to .59 to .65 for mainline Protestants) and the decline in the statistical significance of the coefficients for mainline Protestant and other religion (from  $p < .01$  to  $p < .05$ ). That said, although the difference between these religious traditions and evangelical Protestantism is, in fact, weakened by including these mediating factors, the odds ratios and significance levels for theological conservatism remain unchanged at 1.15,  $p < .05$ . H4 therefore is not supported.

## DISCUSSION

The common finding in previous studies that Protestant religious affiliation is a significant predictor of gun ownership, over and above demography and geography, is heavily nuanced in these models. Not only are evangelical Protestants no more likely to personally own handguns than Catholics, Jews, and religious “nones,” *ceteris paribus*, but there are also differences between the three Protestant traditions. While there is no significant difference in the likelihood of PHO between evangelical and black Protestants, mainline Protestants have lower odds of PHO than evangelicals. Disaggregating religious affiliation therefore reveals some significant insights that should be carried forward and deepened in future studies.

This study also complicates the relationship between religion and gun ownership by bringing measures of religious belief and behavior into the equation, alongside religious affiliation. Unlike Young (1989) and Young and Thompson (1995), who find no significant effect of fundamentalism on gun ownership, here the index of theological conservatism constructed following Hempel, Matthews, and Bartkowski (2012) is statistically significant and positive. Rather than seeing fundamentalism as indicated by a literal view of the Bible and evangelism as the willingness to encourage others to believe in Jesus Christ, this construct highlights the commonality between these two religious views. Given limitations in the questions available in the GSS for the years 2006–2014, my measure of theological conservatism does not perfectly replicate Hempel, Matthews, and Bartkowski (2012), but these findings nonetheless suggest the value of including more and better measures of religious beliefs in studies of gun ownership going forward. For example, Model IV in Table 3 shows a statistically and socially significant effect of punitiveness

on PHO, as measured by support for the death penalty (2.26,  $p < .001$ ). But this measure of punitiveness does not strongly mediate the religion variables in this model, suggesting the importance of Young and Thompson's (1995) distinction between civil punitiveness (beliefs about punishing crime) and religious punitiveness (beliefs about punishing sin). Similarly, in their study of religiously inspired punitive ideologies, Unnever, Cullen, and Applegate (2005) distinguish between rigid and moralistic religious beliefs and the more often neglected religious beliefs about forgiveness, compassion, and grace. These beliefs could well predict gun ownership just as they do punitiveness.

The same is true for measures of religious behavior. The relationship between religious involvement and PHO is not only consistent across all four models in Table 3, but the strength of the relationship is even greater than for theological conservatism or religious affiliation. This was somewhat surprising since previous studies of gun ownership did not include measures of religious behavior. It certainly does highlight the need to include such measures in future studies and to further explore the specific mechanisms connecting religious involvement and gun ownership across religious traditions. Unnever, Cullen, and Applegate (2005), for example, also find that religious activity is negatively related to support for capital punishment, controlling for several other religion variables. Future studies should also consider the possibility that it is not only religious involvement that reduces gun ownership, but that gun ownership could reduce religious involvement if gun owners feel less comfortable being involved in such organized activities.

Although this work is primarily addressed to social scientists who might study the relationship between religion and gun ownership, the statistical models also highlight some results of interest to those studying gun ownership more generally. I began by noting that previous studies have consistently found the statistically average gun owner to be a married white man living in the rural South or West who is politically conservative, middle-aged, and middle class. Model IV in Table 3 reinforces some of these findings, but nuances others. Men are more than twice as likely to personally own handguns as women (2.27,  $p < .001$ ), and the odds ratios for age (1.03,  $p < .001$ ), education (1.05,  $p < .05$ ), and income (1.09,  $p < .001$ ) are all significant and positive. By contrast, being married or white is not a statistically significant predictor of PHO in any of the three models. Supplementary analyses of these same data (not reported here) reveal a similar result for personal ownership of any type of gun, but a significant, positive effect of being married and white on *household* gun ownership. This suggests the value of examining personal in addition to household gun ownership.

In terms of geography, following Ellison (1991b), I nuance the geographic controls in this study by looking not at those currently residing in rural areas, the South, or the Great Plains and Mountain West, but also at natives of, in-migrants to, and out-migrants from these three geographic locations. As expected from previous studies, natives of rural areas (1.81,  $p < .001$ ), the South (2.31,  $p < .001$ ), and the Great Plains/Mountain West (2.28,  $p < .001$ ) all have significantly higher odds of owning guns. Only rural out-migrants, however, carry their gun culture with them (1.49,  $p < .001$ ). Southern and Great Plains/Mountain West out-migrants do not. Perhaps, the most interesting finding among these geographic controls, and one that warrants further investigation, is that the single biggest predictor of gun ownership is Great Plains/Mountain West *in-migrants* (3.21,  $p < .001$ ). In terms of contemporary gun culture, it may be the Western frontier and not the South which is leading the way.

Political conservatism is often but not always found to predict gun ownership. The mediating variable blocks introduced in Models III and IV in Table 3 help to explain why. Introduced on its own in Model III, political conservatism is a significant predictor of gun ownership (1.12,  $p < .01$ ), but once specific sociopolitical attitudes are introduced in Model IV, the odds ratio is reduced in size and statistical significance. As expected from the existing literature, individualism (1.05,  $p < .01$ ) and punitiveness (2.26,  $p < .001$ ) are positively associated, and confidence in government (.87,  $p < .001$ ) is negatively associated, with PHO. Although the

explanatory power of Model IV is only slightly higher than Model III (Nagelkerke *R*-Square = .321 vs. .291), the greater specificity of the effect of political conservatism on PHO in Model IV is instructive.

Of course, like the possible reciprocal effect of religious involvement on gun ownership, we should be mindful of this possibility for political conservatism as well. As early as 1980, Stinchcombe and his colleagues speculated that it was not only sociopolitical attitudes that led to higher rates of gun ownership, but that owning a gun affects your sociopolitical attitudes. Those who are more politically conservative or punitive may be more likely to become gun owners, *or* those who are gun owners may be more likely to become politically conservative or develop punitive attitudes. This is a sort of attitudinal analog to the old psychological insight that the “finger pulls the trigger, but the trigger may also be pulling the finger” (Berkowitz and LePage 1967).

### CONCLUSION

This analysis contributes to the literature documenting that America’s gun arsenal, like so many other phenomena, is not randomly distributed through religious, social, and geographic space. As befits a single article, it takes some incremental steps toward better understanding religion and gun ownership. It also highlights some important avenues for future research and reflection, as just discussed.

Implicit in the discussion above are some limits that should be acknowledged and addressed in future studies, such as endogeneity with respect to religious involvement and sociopolitical attitudes, in addition to the usual general concerns about causal ordering in a cross-sectional study. Furthermore, there are some possible predictors of gun ownership that are not included in these models. These include racism (Young 1985), the measurement of which is difficult to capture in recent waves of the GSS, and generalized trust, which was not found to be significant in preliminary analyses.

Also, that the dependent variable employed here, PHO, is not measured precisely in the GSS is clearly suboptimal. In addition to better measures of ownership, there may also be important ways of extending research on religion and guns to individuals’ qualitative relationships to the guns they do own. The latest wave of the Baylor Religion Survey, for example, includes variables measuring individuals’ attachment to guns. Early analyses show that individuals with judgmental images of God are more attached to their guns, while a higher level of attachment to religion is associated with a lower level of attachment to guns (Froese and Mencken 2014). This is a very promising direction for the field.

Although this work has some clear limitations, I hope that it encourages social scientists who study religion to rejoin the ongoing discussion of the relationship between religion and guns, and inspires some to think more broadly as well as probe more deeply than I can here into the longstanding, strong, and enduring connections between faith and firearms in the United States—and perhaps elsewhere in the world.

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