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STATE POLICY RESPONSE TO SCHOOL SHOOTING TRAGEDIES

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This paper contributes to the literature on state policy change and gun policy. Through the use of aggregate grades of state gun policies, this paper overcomes the tendency in the literature to examine policy adoptions and neglect post-adoption policy change. The paper finds that, despite mass media coverage and open discussion about gun policies, school shootings such as the ones at Columbine High School and Virginia Tech do not lead to any real change in policy at the state level.

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INTRODUCTION

In spring 2007, a national tragedy occurred at Virginia Polytechnic University in Blacksburg, VA. The mass shooting and killing of 32 students and faculty propelled gun violence into national headlines and compelled policy makers to clarify their views on gun policy (Espo 2007). Scholars often call these types of tragedies ‘focusing events’ as they are likely to focus public attention on an issue and compel policy change. This research investigates whether this tragic school event is likely to result in large-scale changes in Virginia gun laws or in national gun laws. Or will entrenched interests moderate problem re-definition and limit significant change in gun policy?

It is currently unclear if gun policy change is best conceptualized using the theoretical approach of focusing events, or if other theories better explain change in this policy subsystem. Have previous episodes of mass shootings triggered state policy change, or have other related factors influenced gun policy change more strongly? The literature suggests that policies change in relation to political factors internal to each state but also in relation to the external activities of other proximate states (Berry and Berry 2007). This article adds to the literature on school violence and state policy change, and it also informs interested policy makers and school administrators of what effects school shootings have on gun policies. It begins with a review of the gun policy and state policy change literature, and then presents data on previous school shootings and resulting policy outcomes. The article concludes by summarizing the findings of the analysis and suggesting directions for future research.

CHANGES IN STATE POLICY

Research on state policy change focuses on ways to better understand how state lawmakers make choices and how those choices may influence policy across states (Walker 1969; Gray 1973). Some of the most influential work in this area focuses on policy change by modeling the adoption of new policies (Jones and Branton 2005). Berry and Berry (1991) famously investigated the adoption of state lotteries using Event History Analysis (EHA). They showed that a process of policy diffusion links states together such that some states are prone to adopt policies prior to other states, so-called “leaders,” whereas others wait until large numbers of neighbors adopt, so-called “laggards” or policy-learners. Interstate communication and professional networking promotes cross-state sharing of information about policy success and failure (Balla 2001).

Much of the state policy change research treats policy change as a dichotomous occurrence or an adoption (Berry and Berry 1990; Chamberlain and Haider-Markel 2005; Daley 2007; Godwin and Schroedel 2000; Hays 1996; Hoyman and Weinberg 2006; Shipan and Volden 2006; Wong and Shen 2002; Karch 2007). In such studies the state policy subsystem truly shifts from no policy, represented by a “zero,” to a brand new policy, represented by a “1.” This is an appropriate method for studying the introduction of new policy ideas or innovations because new policies often represent radical policy change. However, this approach fails to fully address the small and large changes that might occur to that policy once adopted (Boehmke 2007). This is a limitation to our understanding of policy change because so many policy domains are characterized by complexity, periodic revision, and even reversals (Holyoke et al.

2002; Lowry 2005; Karch 2007). While a state's choice to start a lottery may be relatively straightforward and finite, areas such as gun policy have complex and multi-faceted laws which demand suitable methodological approaches.

Indicative of this complexity, most state gun laws address the minimum age for gun ownership, the frequency of permitted gun purchases, purchasing wait times (DeFrances and Smith 1994), registration (Jacobs and Potter 1998), background checks (Jacobs and Potter 1995), private transfers, and regulations of where and when specific guns are permitted. Within each of these broad categories, numerous smaller decisions, compromises, and exceptions (Jacobs 1986) may be contained in the laws and regulations. In the end, state gun policy is the composite of dozens of decisions made by state legislators, the governor, appointed executive officials, and state bureaucrats. Gun policy change is likewise guided by alterations in many of these areas, such as lengthening or shortening the required wait times for purchases, redefining exactly who may purchase or sell hand guns, and varying how many guns may be purchased in a given period of time. Analysis of gun policy should be careful to take a broad approach that can account for these complexities.

When major shooting tragedies occur, such as at Virginia Tech in 2007 and at Columbine High School in the spring of 1999, theory suggests public perceptions may be prone to change. Following the work of Cobb and Elder (1983) and Baumgartner and Jones (1993), so-called focusing or triggering events offer the potential to greatly change public perceptions and ultimately public policy. It is argued that policies will remain unchanged or change only incrementally when the public's view of the policy, the policy image, is static and consistent over time. When a dominant policy image is altered, either in a seemingly random way (Kingdon 1995), such as following a natural disaster like Hurricane Katrina, or through concerted efforts on the part of organized interests, as when school choice advocates seek to re-cast the public education debate (Baumgartner and Jones 1993), policy monopolies may be broken and policy re-established along some new terms.

Gun-related events, not surprisingly, generate enormous national media coverage (Maguire et al. 2002), and the public's view of guns and gun violence is susceptible to change when presented with new information or an alternative framing of an issue (Haider-Markel and Joslyn 2001). Additionally, other research shows potential links between divergent media coverage of the Columbine shootings and the emergence of new problem definitions (Lawrence and Birkland 2004), ranging from individualistic concerns about a lack of personal morality to systemic explanations focusing on pop culture, poor parenting, and secularism.

Little research has linked changes in the perception of guns and opinions on current gun laws to policy change or explored whether gun-related focusing events involving schools lead to dramatic changes in state gun policy. One reason for this has been that certain researchers argue that the gun policy subsystem is best explained by "incrementalism" and the traditional models of iron triangles, symbolic policy making, and stalemate (Vizzard 1995). At the state level, change may be muted by divided government and the inability to pass bipartisan bills through contentious state legislatures.

By 2000, shortly after the Columbine shootings, many states passed changes in their gun laws to make it harder to purchase or misuse guns (Danitz and Nagy 2000). Even certain states with Republican governors, such as Pennsylvania and New Jersey, passed laws that require gun safety locks on certain types of weapons. These changes may have been the result of what researchers call the “moral panic” dimension or of overreaction of post-school shooting coverage (Burns and Crawford 1999; Lawrence and Mueller 2003; Lawrence and Birkland 2004). Haider-Markel (2001) even showed in controlled experiments that respondents blamed gun laws for the Columbine shootings, perhaps supporting the argument that the public does respond predictably to focusing events.

More recently, the pendulum has swung in the opposite direction, and Florida, for instance, has passed a “Stand Your Ground” law that greatly expands gun rights in that state (Jonsson 2006). Godwin and Schroedel (1998) apply Kingdon’s theory of policy windows to California’s gun policies, but the findings are mainly descriptive and limited to the single case of California. A comprehensive theory of gun policy change that draws on this diverse state policy change literature is missing. The questions that remain to be answered are: Do gun-related events produce significant change in policy? Or do other factors affect gun policies such that, rather than significant change, only cosmetic additions or subtractions to gun laws result from major shootings?

SCHOOL SHOOTINGS AND GUN POLICY CHANGE

Between the years of 1997 and 2007, there were at least 36 major school-related shootings in the United States, including the shooting at Virginia Tech.¹ Twenty-one states witnessed a school shooting, and it is estimated that at least 61 students, staff, and faculty lost their lives, while dozens more were critically injured. Pennsylvania had five school shootings during this time period: Nickel Mines (2006), Pittsburg (2006), Red Lion (2003), Williamsport (2001), and Edinboro (1998). Virginia, Louisiana, and California also had multiple school shootings, two each, during this time period.

These crimes produced local changes at the school and even district level, including “Zero Tolerance” policies, more security officials, metal detectors installations, and revamping of school crime practices (Skiba and Peterson 1999). A related but separate issue is whether these tragedies resulted in significant change in state gun laws and national gun policy in general. An important public policy concern is not whether minor, symbolic changes were made; rather, the question should be whether states responded to school shootings in a more comprehensive or systematic manner (Vizzard 1995). For instance, if a state responded to a school shooting by banning guns from the immediate neighborhood of the school, while at the same time making it easier for guns to be purchased, these changes might counterbalance each other and the security of students, schools, and the general public might remain unchanged. For this reason, it is valuable to measure outcomes in complex gun policy in general, not simply the adoption of any particular new law.

In order to address both policy change and policy complexity, I chose to use a measure published annually by the Brady Campaign, a well-known anti-gun/gun control interest group.² The Brady Campaign has graded state gun laws in seven different categories for every year since

1997.³ An aggregated grade indicates how restrictive (A) or permissive (F) the state policy is towards guns.

State Grades in 2005

Grade	State
A	
A-	CA, CT, HI, IL, MD, NJ
B+	NY
B	
B-	NE, RI
C+	IA, WI
C	DE, NC
C-	KS, MN, OR, VA
D+	MI, MO, PA, SC, TN, WA
D	AR, AZ, CO, GA, IN, NV, ND, SD, WV
D-	ME, NH, OH, OK, TX, UT, VT
F+	AK, FL, ID
F	AL, KY, LA, MI, MS, MT, NM, WY

I used the numeric equivalent of the grade given to each state's gun laws from 1997 to 2005, the most recent available year, and compared year-to-year changes in the state's grade. The result was a measure of how much a given state policy has changed: changes measured were either zero (no change), a positive number (indicating a move toward more restrictive gun laws), or negative (indicating a move toward more permissive gun laws). For instance, a state that was graded a D in 1997 and then a C in 1998 made its laws relatively more restrictive, whereas a state whose grade was an A in 1999 and a C in 2000 made its laws relatively more permissive.

An obvious limitation of this approach could be the inherent bias of the grader. It may be that the pro-gun control stance of the Brady group results in a skewed grading scheme. In order to test this bias, I compared the Brady scores to scores calculated and published by Bruce and Wilcox (1998). This measure is not as prone to political bias since it is not calculated from data collected by advocacy organizations, but it does offer a different method of summation. The 1997 Brady grades were compared to the additive index created by Bruce and Wilcox (1998) for state laws in 1996. The index they use ranges from zero (indicating no restrictive laws) to 13 (indicating that a state has adopted all possible gun restrictions). I found a .80 correlation coefficient with the Brady grades, suggesting that the Brady grades and the Bruce and Wilcox index capture essentially the same information. The clear advantage of the Brady grades for this research is that they are available for more than just a cross section of time.

	Bruce and Wilcox 1998 Index score (0-13)	Brady Grade of State Gun Control Laws, 2005 (numeric equivalent; F=0 to A=4)
Alaska	NA	0.33
Alabama	8	0
Arkansas	5	1
Arizona	5	1
California	10	3.67
Colorado	6	1
Connecticut	13	3.67
Delaware	7	2
Florida	5	0.33
Georgia	4	1
Hawaii	NA	3.67
Iowa	10	2.33
Idaho	4	0.33
Illinois	13	3.67
Indiana	7	1
Kansas	8	1.67
Kentucky	4	0
Louisiana	6	0
Massachusetts	12	3.67
Maryland	11	3.67
Maine	5	0.67
Michigan	10	1.33
Minnesota	12	1.67
Missouri	9	1.33
Mississippi	5	0
Montana	5	0
North Carolina	8	2
North Dakota	5	1
Nebraska	10	2.67
New Hampshire	5	0.67
New Jersey	12	3.67
New Mexico	7	0
Nevada	6	1
New York	11	3.33
Ohio	7	0.67
Oklahoma	5	0.67
Oregon	4	1.67
Pennsylvania	6	1.33

Rhode Island	11	2.67
South Carolina	6	1.33
South Dakota	8	1
Tennessee	6	1.33
Texas	5	0.67
Utah	5	0.67
Virginia	6	1.67
Vermont	5	0.67
Washington	6	1.33
Wisconsin	5	2.33
West Virginia	5	1
Wyoming	4	0

From 1997 to 2005, gun laws became more permissive in 22 states, more restrictive in 11, and remained unchanged in 17. To be sure, “no change” in the ranking does not necessarily mean that there was no change in the laws. It could be the case that changes were so minor that they did not produce a grade change, or changes to make the policy more restrictive were offset by changes to make the law more permissive. It is also the case that, according to these grades, a state graded an F cannot become more permissive (nor can an A become more restrictive). These are simply limitations inherent to many grading or scaling schema.

Status of Gun Law Following Major Shootings

	Number of states		
	Policy becoming more restrictive	Policy remaining unchanged	Policy becoming more permissive
Current year	13%	70%	17%
One year after	7%	70%	23%
Two years after	8%	78%	14%
Three years after	7%	81%	12%

THEORY AND EXPECTED POLICY CHANGE RELATIONSHIPS

Before examining the empirical findings on school shootings and policy change, it is important to address other factors related to policy change. There are two primary theories of state political change through which scholars coalesce and hypothesize several expected relationships for gun policy. These two theories are drawn from the broad field of state policy diffusion and also previous research into gun policy, specifically Bruce and Wilcox (1998). First, an *Internal*

Political Theory of state political change argues that factors internal to state politics have the strongest influence on change in state policy. From this perspective, factors such as the distribution of political power, the nature of the state's policy environment, and the internal events in a state maintain stability or produce change. As such, states operate independent of outside influences, either from the federal government or from other states. Ultimately, policy change occurs when internal factors change and stability is maintained when factors are relatively constant.

This is a particularly convincing theoretical construct in policy domains where federal officials have limited authority or traditions of federalism promote strong state control. Transportation policy, for instance, is dominated by federal spending on highway construction and federal regulation of interstate commerce, making it a poor fit for this theory. Gun policy, however, has been historically the domain of state and local officials, meaning federal control is much more limited, though of course not non-existent. While the introduction of the Brady Law has increased federal incursions into state gun policy, states still maintain dominance; therefore, we treat federal influence as a factor separate from this model of state policy change.

Second, in an *External Political Theory* or a *Policy Diffusion Theory*, states sit in policy communities and maintain stability or initiate change in relation to their neighbors (Berry and Berry 1990). These neighbors may be geographic neighbors with whom the state shares a border or a region. Neighbors also may be ideological neighbors with whom the state shares policy preferences, party affiliations, or a dominant political culture. In both cases, states regularly share information on policy innovations, best practices, and policy outcomes in either formal or informal networks. State policy makers use this information to mimic neighbors when policy successes are found or steer clear of potential policy pitfalls when failures are identified (DiMaggio and Powell 1983).

These two theories in practice are not mutually exclusive and are each likely to explain certain aspects of state policy change; therefore, they can be used to generate a series of testable hypotheses. The first and most obvious influence on policy is the nature of the policy environment. In the textbook notion of public policy, lawmakers seek to solve social problems and distribute public goods in a rational or logical fashion (Anderson 2003). Whether the policy domain is transportation, the environment, or education, policy makers first assess whether or not there is a problem. As Kingdon (1995) and others suggest, policy makers rely on a variety of statistics, trends, and reports on the social conditions of their policy domain. These conditions typically change only incrementally. For instance, traffic patterns, standardized test scores, and crime all typically improve or diminish slowly. A periodic review of social conditions, either through occasional committee hearings or staff briefings, will reinforce the nature of the problems policy makers confront and a set of accepted solutions. Once a policy choice is made, path dependency and increasing returns (Pierson 2000) help cement the direction of future policy and limit change. Social indicators suggest to policy makers the urgency of policy change.

Policy Environment Hypothesis: When social conditions change, policy will change in the direction of the social condition.

Such rational problem solving to quickly address social problems, however, is not the only approach state policy makers take in policy making. Partisan affiliations demand that

lawmakers adhere to a common notion of good and bad policy. In states dominated by a single party, it is reasonable to expect that policies will resemble the party's platform, whether or not that platform aligns with current social conditions. Party affiliation works in several ways to influence policy. The party of elected officials matters as they seek to satisfy the demands of their partisan supporters. Party dominance also will influence the appointment of non-elected policy makers who shape policy choices and policy implementation.

Party Hypothesis: Republican-dominated states will shift policy in a conservative direction.

Party, of course, is not the only internal political dynamic operating at the state level. In a pluralistic democracy, interest groups or coalitions of interest groups shape policy through a variety of avenues of influence (Sabatier and Jenkins-Smith 1999; Orr 2006). Interest groups may support candidates financially (Constant 2006), provide lawmakers with critical policy information through briefings or testimony, or shape public opinion through the media. Interest groups may also seek policy change through "venue shifting" or "venue shopping" by seeking out more favorable or responsive audiences within government (Pralle 2006; Wood 2006a; Schattschneider 1960). In many cases, interest groups pull or push with equal force from opposing directions, resulting in little change in policy (Givel 2006; Sabatier and Jenkins-Smith 1999). In other cases, a single dominant interest group may influence policy makers to introduce favorable bills, change legislation, or avoid contentious issues. In the case of gun policy, research has examined the influence of pro- and anti-gun control groups at the national level and showed that pro-gun control groups are marginally more effective in generating legislative support (Langbein and Lotwis 1990). This runs counter to a general sense that the National Rifle Association is much more influential than pro-gun control groups, but may be due to the relocation of debates about gun issues to the state level following the passage of the Brady Bill in the early 1990s. Furthermore, the National Rifle Association's success at the national level may be somewhat unobservable since it often works to prevent the passage of gun control bills and further limits on gun ownership, rather than the introduction of its own new laws.

Interest Group Hypothesis: As an interest group becomes more influential, policy will change to resemble their wishes.

In policy arenas where interest groups battle to negotiated truces, political parties are in rough parity, and social conditions are essentially unchanged, scholars suggest little policy change is likely to occur (Kingdon 1995). Baumgartner and Jones (1993) famously describe such a situation as a policy monopoly. During periods of little change, one often observes the establishment of so-called "Iron Triangles" or "Issue Networks" that sanction certain policy solutions and reinforce the status quo through positive policy feedback loops (Hecklo 1977). Bureaucratized governmental institutions, arguably a product of powerful Iron Triangles, also may provide a mediating effect on change and promote incrementalism (Robinson 2004). In the area of crime policy, in which gun policy often sits, bureaucrats play a particularly strong role in policy making, often dominating the agendas of congressional hearings (Miller 2004).

When social conditions shift greatly or counter mobilization results in a significant transformation in the dominant image of the policy (Baumgartner and Jones 1993), the potential for change or "punctuation" arises (Breunig and Koski 2006). Focusing events, triggering devices, and tipping points also may serve to greatly change the dominant policy image (Wood 2006b; Cobb and Elder 1983). These events may occur randomly through natural disasters, such

as Hurricane Katrina, or through unanticipated human events such as a hijacking or bombing. In either case, the enormity of the event fundamentally changes how the public and policy makers consider the policy domain. After a focusing event, the potential exists for the policy monopoly to be overturned.

Focusing Event Hypothesis: Policy will change after focusing events align with the nature of the event.

The preceding hypothesis describes essentially internal or intra-state dynamics. Another possibility exists that change occurs externally or in an inter-state manner. The literature on policy diffusion suggests that states may learn from each other, and policy change may be the result of the interactions of state leaders (Hall 1993; Hays 1996; Balla 2001). There is no consensus on the nature of state diffusion, but diffusion may occur nationally, regionally, or just through a small network of neighboring states. Recent scholarship (Shipan and Volden 2006) has even suggested that diffusion may occur up from the local level to state policy. In all of these cases, the literature suggests that state policy makers are cognizant of the work of other states, and this has an influence on state policy and policy change.

Neighbor Diffusion Hypothesis: Any given state's policy change will be influenced by the relative change in neighboring states.

OPERATIONALIZING A MODEL OF GUN POLICY CHANGE

The dependent variable used in this model was described earlier. State grades for 1997 through 2005 were compared for each state. This yields eight years of change data, since there is no grade with which to compare 1997. The remarkable aspect of state gun policy, though, is the lack of measurable change. Most state grades remain the same or change only occasionally. An analogous problem is addressed by King and Zen (2001) in their discussion of "rare events" and international relations (King, 2001 #719). The result is that the change variable takes the value of zero for most observations, thereby violating a basic assumption of an Ordinary Least Squares (OLS) model and also making the data an imperfect fit with Event History Analysis. For this reason, two additional dependent variables were created to capture whether the state grade was simply increasing (versus remaining the same or decreasing) or decreasing (versus remaining the same or increasing). These two dichotomous outcomes can be modeled as using a standard Logit analysis to help overcome the limitations of the continuous change variable. The resulting coefficients are presented as odds-ratios.

A further complication of this type of cross-sectional data that varies over time is the interdependence of observations temporally and spatially. For instance, if observations are taken for the same state in multiple years, it is reasonable to assume that there are unobserved state effects. It is therefore necessary to control for time-effects and state-specific effects using a time-series model (using year intervals) with random-effects (grouped by state) in Stata.⁴ This approach should address many of the problems posed by cross-sectional time-series data.

The remaining independent variables capture important dimensions of the hypothetical relationships described above. To capture *focusing events*, a variable was coded "1" if a major shooting had occurred in the state in the last two years and "0" if no shooting had occurred. To capture *interest group activity*, a variable that measures the total amount of political donations

(in dollars) from anti-gun control groups (per capita) was included.⁵ The total political donations from pro-gun control groups were sufficiently small or zero for so many observations that they were excluded. To capture *social conditions*, the violent crime rate (in its log form) from the previous year was taken from annual Federal Bureau of Investigation data. While there are several compelling ways to operationalize state diffusion, for simplicity I chose to measure *neighbor diffusion* as the average change in grade for each state's contiguous neighbors. This variable should capture whether a state's neighbors became more permissive, more restrictive, or remained roughly the same. To capture *political effects*, two variables were included. One variable, collected from publicly available information from the National Conference of State Legislatures, measures whether the governor and state legislature was controlled by Republicans (NCSL 2006). If Republicans were dominant, one would expect state gun policy to become more permissive. Another variable frequently used in state policy research measures the ideology of the government. The higher this variable the more liberal the state ideology is, and the lower the more conservative. These two variables in fact have a low correlation.

Several iterations of these models are presented in Figure 4. First, Model 1 uses the continuous version of the change variable, whereas Models 2 and 3 use the two dichotomous outcomes. An interaction variable was included to demonstrate the interaction between focusing events and interest group activity. Of course, additional theoretically valid variables could have been included in the analysis but were dropped due to statistical concerns. I decided to omit a measure of state political ideology due to concerns about its close relationship to Republican dominance and government ideology. I also left out the percentage of the state living in urban areas, which could be related to changes in gun laws, but is also likely captured to some extent by the change in the violent crime rate. Those results can be seen in Model 1b, 2b and 3b.

Multivariate Models of Gun Policy Change

	Model 1a: Change in Law (standard errors)	Model 1b: Change in Law With interaction (standard errors)	Model 2a: Law Becoming More Permissive (standard errors)	Model 2b: Law Becoming More Permissive With interaction (standard errors)	Model 3a: Law Becoming More Restrictive (standard errors)	Model 3b: Law Becoming More Restrictive With interaction (standard errors)
Government Ideology	.00 (.00)	.00 (.00)	.01 (.01)	.01 (.01)	.04** (.01)	.04** (.02)
Republican Dominance (dichotomous)	-.00 (.02)	-.00 (.03)	.21 (.34)	.21 (.34)	-.51 (.50)	-.49 (.50)
Lagged Violent Crime Rate (log)	-.05 (.03)	-.05 (.03)	-.29** (.32)	-.28 (.32)	-.89 (.49)	-.88* (.53)
Major Shooting (lagged) (dichotomous)	.04 (.03)	.15 (.15)	-.33 (.46)	-1.06 (1.97)	-.03 (.58)	3.92 (3.02)
Anti-Gun Control Donations Per Capita (log)	.01** (.00)	.01** (.00)	-.05 (.06)	-.06 (.06)	.36** (.18)	.43* (.20)
Interaction Anti-Gun Donations X Major Shooting	---	-.01 (.02)	---	.09 (.23)	---	-.48 (.37)
Average Neighbor Change	.03 (.02)	.03 (.03)	-.93*** (.33)	-.97*** (.33)	.26 (.54)	.25 (.52)
Constant	.13 (.20)	.11 (.20)	-1.77 (.78)	-1.71 (.79)	-3.28 (3.34)	-7.55 (31.96)
N	350	350	350	350	350	350

Coefficients in Models 2a and 2b and 3a and 3b are presented as odds ratios. Significance of coefficients shows as:
* <.10 **<.05 ***<.01

RESULTS

Overall, the models are not strongly convincing in terms of how much variation they explain. However, though not all statistically significant, the coefficients do provide substantial support for some of the key hypotheses, and others provide evidence to raise questions about some widely held beliefs.

First, as has been noted earlier, one can observe that states infrequently change their gun laws after a school shooting, and the statistical relationships between school shootings and policy change are complicated and difficult to interpret. Based on Model 1a and 1b, as hypothesized, shootings are negatively related to state gun laws becoming more permissive, though not in a significant manner at the .10 significance level. When we look to Model 2a, the relationship is hard to interpret, because it suggests shootings are also negatively related to laws becoming more restrictive; in other words, when a state experiences a shooting, it will become easier to purchase or own a gun. By looking at individual cases more closely, further clarification can be found. For instance, Pennsylvania, the state with the most shootings during this time period, saw its law become more restrictive, a grade increase from a D to a D+ the year after the Edinboro shooting in 1998. Pennsylvania, though, was clearly an exception. Only 13 percent of states changed their laws to become more restrictive during the year that a shooting occurred. That percentage is somewhat smaller a year later (7 percent became more restrictive) and two years later (8 percent became more restrictive). In fact, more states saw their gun laws shift in the opposite direction, becoming more permissive, in the year after a school shooting. After the shooting at Virginia's Armstrong High School in 1999, the state's policy became more permissive and went from a C to a C- the following year. Similarly, Michigan, following the shooting at Buell Elementary School in 2000, saw its law change from a C- to a D+. Overall, most state laws do not change after a school shooting, and few change in the anticipated direction.

One reason for this unusual finding may be that because shooting-related focusing events receive so much national attention, state-level policy factors are overwhelmed by nation-wide policy factors (Wood 2006b). This certainly was the case after the shootings at Columbine and Virginia Tech, when media coverage was not contained within the state boundaries of Colorado or Virginia. If state officials across the country or a region are influenced by school shootings far from their state, then one might expect to observe national changes following the most dramatic school shootings. Previous research suggests that certain policy subsystems operate in diffusion networks that are not geographic (Balla 2001); therefore the transmission of policy information, such as gun-related crises, may transcend state or even regional boundaries.

Another possible explanation is the potential that focusing events generate counter-mobilization efforts to blunt change. An organization such as the National Rifle Association might anticipate efforts to change laws in a state in the wake of a major shooting and redouble its efforts through its state affiliates. Illustrative of this, while total donations before and after the shootings in Arizona, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Oregon, and Tennessee are approximately the same, total donations are somewhat higher in the years after a major shooting in California, Colorado, Minnesota, New Mexico, New York, Pennsylvania, Texas, and Virginia. The coefficients for the interaction effects support this theory to some extent. If we compare Models 2a and 2b, we can see the sign on the coefficient for shootings changes from negative to positive when we add the interaction. Controlling for this interaction, states with a major shooting now are more likely to see their gun laws become more restrictive, the outcome one would expect.

In terms of the *neighbor diffusion* hypothesis, there are also interesting findings. While the coefficient is not significant for Models 2a and 2b, Model 1a and 1b show that as neighboring states become more restrictive, states are less likely to become more restrictive. This evidence is

not overwhelming and does not suggest that each state adjusts precisely in-line with neighbors, but the evidence is suggestive of state policy diffusion. For instance, based on bi-variate analysis, 13 percent of states whose neighbors were becoming more restrictive also became more restrictive. This is illustrated with the state of New York, where its four neighbors (Pennsylvania, New Jersey, Connecticut, and Massachusetts) all experienced grade increases while the New York law changed from a C to a B+. Conversely, Colorado saw its grade fall from a D in 1997 to an F in 2005, while five of its six neighbors (Utah, Nebraska, Kansas, Oklahoma, and New Mexico) made their laws more permissive. Finally, South Carolina saw no change in its law, nor did its two neighbors Georgia and North Carolina. No causalities can be claimed in any of these cases, since it is unclear whether New York, for instance, influenced its neighbors or vice versa; however, this does suggest state gun policy is influenced by interstate policy communities.

The results for the *social conditions* hypothesis are somewhat unclear. The coefficient is positive in both Models 1 and 2. This may be due to the fact that crime data is slow to be reported and the effect is overwhelmed by other factors.

Finally, the political ideology of the state does not conform perfectly to expectations, but there are significant results that show more ideologically liberal states are more likely to become more restrictive. I expected that if Republicans controlled both the legislature and the governorship, gun policies would become more permissive. The data support this hypothesis: when state government is controlled by Republicans, laws appear more likely to become permissive and less likely to become restrictive, though the statistical results do not permit the null hypothesis to be rejected. Interestingly, based on data drawn from the Council of State Governments, 78 percent of the time during divided government there was no change in state gun policy (NCSL 2006). Even during periods of Republican control, there is also no change a large percentage of the time. Eighty percent of the time when Republicans control both the legislature and governorship, there was no change in gun policy, and only 4 percent of the time do gun laws become more restrictive. Conversely, when Democrats are in control, 71 percent of the time there is no change, but 11 percent of the time gun policies become more restrictive.

CONCLUSION

School shootings are an extreme case of school violence and produce enormous public attention. During periods of heightened attention to a specific policy domain, it is tempting to apply a simplistic notion of policy change. We might naively expect public attention to be perfectly correlated with change and anticipate that public policy makers respond immediately to dramatic events. A more nuanced review of recent events and the literature on policy change suggests that other factors may help absorb, neutralize, or moderate great shifts in policy. As a recent *Washington Post* headline (“Reid Warns Against a Rush on Gun Control”) suggests, even a Congress controlled by Democrats is hesitant to act quickly or at all (Espo 2007). In the case of gun policy, the evidence above shows that major shootings, a horrific example of a focusing event, has not been clearly linked with policy change.

One explanation for this lack of change has been the contention made by some that, despite the tragic quality of recent shootings, they remain isolated events and run contrary to other trends that shows schools and most states are becoming safer (Burns and Crawford 1999;

Lawrence and Mueller 2003). After a short period of heated media coverage and public unrest, policy makers may recognize that gun violence in general has not changed and policies need not be adjusted. In fact, according to data from the Bureau of Justice Statistics, there was no difference in the rate of violent crime, nor in the annual rate of change in violent crime, between states that had a school shooting and those that did not. The violent crime rate was increasing only 3 percent on average for states that had a school shooting and was in double digits for only California (1998), Oregon (1999), and Colorado (1999). To be sure, anti-gun control interest groups would likely be eager and willing to share these positive statistics with policy makers, but this does not change the empirical disconnect between the shock of a school shooting and other less alarming trends related to violent crime.

Stronger predictors of change are the activities of neighbors and influence of interest groups, both internal and external explanations of change. This suggests that the gun policy subsystem is part a state-specific domain, dominated by the activities of political actors in each state, but also that policy makers are explicitly or implicitly aware of their neighbors.

For those who disagree with this benign assessment and desire a fast solution to the perceived weaknesses in a state's gun policy after an event like the Virginia Tech shooting, the evidence from this article may be disappointing. These findings suggest that local officials might ultimately be the most effective policy makers in responding to school shootings. The lack of change at the state level in response to school shooting suggests that state policy makers may see individual tragedies as disconnected with larger issues of gun ownership. It may also suggest that school administrators, parent associations, and other stakeholders adjust their expectations for policy change. These local stakeholders may now see the security of their students and schools as increasingly the responsibility of each school on their own.

In general, these results contribute to a better understanding of the nature of state policy change and interstate policy diffusion. Previous research in this area has focused primarily on policy adoptions and not fully addressed subsequent policy change. The intent of this paper was to expand the literature on state policy change and inform educational practice by examining gun policy in a more complex fashion. Unfortunately, many questions remain and more advanced methods may be needed to answer these questions. A more sophisticated multivariate model could tease out the precise relationships between these factors. Future research will explore this approach and continue to inform the field of public policy research and those interested in state gun policy.

ENDNOTES

¹ While it is difficult to neatly differentiate gun-related tragedies, this essay focuses on shootings that occurred on or near school property, involved students, and resulted in multiple fatalities or critical injuries.

² All data used for this analysis were drawn from public sources and are available for verification and replication purposes.

³ The Brady Foundation (See: <http://www.stategunlaws.org/>) grades states from F to A on these elements of their gun policy: Juvenile Possession Law, Juvenile Sale/Transfer Law, Child Access Prevention Law, Gun Safety Locks and Safer Design Standards, Allow Cities to Regulate Guns (Non-Preempt), Secondary "Private" Sales Background Checks, and Carrying Concealed Weapons Law (Detailed Grade Information 2005).

⁴ The xtreg and xtlogit terms were used in Stata 10. A state variable was included as a random-effect.

⁵ We collected data from the National Institute on Money in State Politics Web site (See <http://www.followthemoney.org>). The National Rifle Association was the leading anti-gun control donor in most states. We divided this by the state population in 2004 to address the variation in state size.

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