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THE RELATIONSHIP BETWEEN STATE-LEVEL DYNAMICS, FIREARM
POLICIES, AND COUNTY-LEVEL HOMICIDES

by

Shawn M. Ratcliff

A DISSERTATION

Presented to the Faculty of

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THE RELATIONSHIP BETWEEN STATE-LEVEL DYNAMICS, FIREARM
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Shawn M. Ratcliff, PhD

University of Nebraska, 2020

Advisors: Regina E. Werum and Philip Schwadel

Abstract

This dissertation examines the causes and effects of four major firearm-related policies in the United States: Concealed Carry Weapons (CCW), Stand Your Ground (SYG), Child Access Prevention (CAP), and Universal Background Checks (UBC). Applying a social movement approach, the first research question addresses how a social movement organization (SMO) has employed resources to shape the adoption of (counter-)movement-related legislation. Using the gun rights movement as a case-in-point, I explore how campaign contributions – conceptualized as a professionalized SMO resource – have been employed by the National Rifle Association (NRA) to shape the adoption of CCW, SYG, CAP, and UBC laws at the state-level between 1990 and 2016. Employing event-history analyses and mediation models, I find campaign contributions are associated with social movement successes – in this case, policy adoption – albeit indirectly: NRA campaign contributions have no direct association with the adoption of any state-level firearm-related legislation. However, campaign contributions do effectively shape the percentage of Republican legislators in a given state’s legislature which, in turn, increases the adoption of gun rights laws (SYG) and decreases the adoption of gun control laws (CAP).

The second research question examines the extent to which state-level firearm-related policies affect local-level homicides above and beyond socio-criminological

correlates. Although the majority of homicides are conducted with a firearm and homicides vary greatly across counties, gun policy scholarship has often ignored socio-criminological insights and, in turn, may be making inaccurate inferences about the impact of gun policies on homicides, including firearm-related homicides. Analyses presented in this chapter employ hierarchical (i.e., counties nested in states) logistic and negative-binomial models to address substantive and methodological shortcomings in extant gun policy research. Focusing on recent homicide data (2014-2016), results indicate socio-criminological correlates, specifically at the county-level, robustly explain variation in the number of reported homicides, including those associated with firearms. In contrast, state-level gun policies do not seem to provide any additional explanation of county-level homicide variation above these correlates.

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Table of Contents

I.	Introduction	10
II.	Empirical Chapter 1: The Effect of State-Level and Policy Dynamics on Gun Policy Outcome	20
A.	Introduction.....	20
B.	SMO Professionalization.....	24
C.	Case Selection: The National Rifle Association (NRA)	27
D.	Social Movement Success	30
E.	Gun Rights Policies: Concealed Carry Weapons and Stand Your Ground	31
	<i>Concealed Carry Weapons (CCW) Laws</i>	<i>32</i>
	<i>Stand Your Ground (SYG) Laws</i>	<i>33</i>
F.	Gun Control Policies: Child Access Prevention and Universal Background Checks	34
	<i>Child Access Prevention (CAP) Laws.....</i>	<i>34</i>
	<i>Universal Background Checks (UBC) Laws.....</i>	<i>36</i>
G.	Social Movement Theory and Movement Success	37
	<i>Resource Mobilization Theory (RMT)</i>	<i>37</i>
	<i>Movement/Countermovement Dynamics</i>	<i>41</i>
	<i>Political Opportunity/Mediation Approaches.....</i>	<i>43</i>
H.	Chapter 1 Data and Methods	49
	<i>Dependent Variables.....</i>	<i>50</i>
	<i>Independent Variables</i>	<i>53</i>
I.	Chapter 1 Results	59
	<i>Descriptive Statistics.....</i>	<i>59</i>
	<i>Multi-Variable Results: Event History Analyses of Gun Rights and Gun Control Policies</i>	<i>63</i>
	<i>Summary of Results.....</i>	<i>87</i>
J.	Chapter 1 Discussion	89
	<i>Major Takeaways.....</i>	<i>89</i>
	<i>Limitations</i>	<i>99</i>
	<i>Conclusion</i>	<i>102</i>
III.	Empirical Chapter II: The Downstream Consequences of Firearm Policies for Homicides	104
A.	Introduction.....	104
B.	Relevant Literature.....	108
	<i>Homicide: Definition and Trends</i>	<i>108</i>
	<i>Structural Determinants of Homicide.....</i>	<i>109</i>
	<i>Gun Policies and Homicides.....</i>	<i>114</i>
C.	Chapter 2 Data and Methods	118
	<i>Dependent Variables: Types of Homicides.....</i>	<i>124</i>

<i>Focal Independent Variables: Firearm Regulations/Policies</i>	126
<i>Criminological Explanations: Social Disorganization</i>	126
<i>Correlates of Gun Policies: State-level Socio-Political Contexts</i>	130
<i>Analytic Method</i>	132
D. Results	134
<i>Descriptive Statistics</i>	137
<i>Null/Unconditional Models</i>	141
<i>Multi-Variable Models</i>	142
<i>Summary of Results</i>	168
E. Discussion	172
<i>Major Takeaways</i>	172
<i>Limitations</i>	185
F. Conclusion	186
IV. Discussion and Conclusion	189
<i>Indirectly Influential: Campaign Contributions as a “Return on Investment”</i>	189
<i>Estimating the Effects of Gun Policies: Limitations and Effectiveness</i>	191
<i>Major Takeaways and Implications</i>	195
Major Takeaways for Policymakers	195
Major Takeaways for Researchers.....	196
Major Takeaways for Activists.....	199
<i>Conclusion</i>	201
V. References	203
VI. Appendices	227

List of Tables

TABLE 2.1: DATA DESCRIPTION AND DESCRIPTIVE STATISTICS	61
TABLE 2.2: EFFECT OF GUN RIGHTS MOVEMENT RESOURCES AND POLITICAL OPPORTUNITIES ON CCW POLICY ADOPTION	65
TABLE 2.3: EFFECT OF GUN RIGHTS MOVEMENT RESOURCES AND POLITICAL OPPORTUNITIES ON SYG POLICY ADOPTION	67
TABLE 2.4: MEDIATION ANALYSIS OF NRA CAMPAIGN CONTRIBUTIONS AND REPUBLICAN LEGISLATORS ON GUN RIGHTS POLICY ADOPTION 1	74
TABLE 2.5: EFFECT OF GUN RIGHTS MOVEMENT RESOURCES AND POLITICAL OPPORTUNITIES ON CAP POLICY ADOPTION	78
TABLE 2.6: EFFECT OF GUN RIGHTS MOVEMENT RESOURCES AND POLITICAL OPPORTUNITIES ON UBC POLICY ADOPTION	80
TABLE 2.7: MEDIATION ANALYSIS OF NRA CAMPAIGN CONTRIBUTIONS AND REPUBLICAN LEGISLATORS ON GUN CONTROL POLICY ADOPTION 1	84
TABLE 2.8: SUMMARY OF RESULTS	86
TABLE 3.1: DESCRIPTION OF VARIABLES	121
TABLE 3.2: DESCRIPTIVE STATISTICS	135
TABLE 3.3A: NULL MODEL RESULTS OF MULTI-LEVEL LOGISTIC REGRESSIONS	140
TABLE 3.3B: NULL MODEL RESULTS OF MULTI-LEVEL NEGATIVE BINOMIAL REGRESSIONS	140
TABLE 3.4: TWO-LEVEL LOGISTIC AND NEGATIVE BINOMIAL REGRESSIONS RESULTS – EFFECT OF SOCIO-CRIMINOLOGICAL FACTORS AND GUN POLICIES ON OVERALL HOMICIDES	143
TABLE 3.5: TWO-LEVEL LOGISTIC AND NEGATIVE BINOMIAL REGRESSIONS RESULTS - CRIMINOLOGICAL FACTORS AND GUN POLICIES ON FIREARM HOMICIDES	150
TABLE 3.6: TWO-LEVEL LOGISTIC AND NEGATIVE BINOMIAL REGRESSIONS RESULTS - CRIMINOLOGICAL FACTORS AND GUN POLICIES ON HANDGUN HOMICIDES	156
TABLE 3.7: TWO-LEVEL LOGISTIC AND NEGATIVE BINOMIAL REGRESSIONS RESULTS - CRIMINOLOGICAL FACTORS AND GUN POLICIES ON LONG GUN HOMICIDES	163
TABLE 3.8: SUMMARY OF RESULTS	169
APPENDIX TABLE A.1: POOLED-TIME SERIES ANALYSIS RESULTS – EFFECT OF SMO RESOURCES, POLITICAL OPPORTUNITIES, AND CONTROLS ON LEGIALTIVE MAKE-UP	227
APPENDIX TABLE A.2: EFFECT OF RESOURCE MOBILIZATION AND POLITICAL OPPORTUNITIES ON CAP ADOPTION (1990-2002)	228
APPENDIX TABLE A.3: MULTI-LEVEL OLS RESULTS FOR HOMICIDE RATES	230
APPENDIX TABLE A.4: MULTI-LEVEL OLS RESULTS FOR NUMBER OF REPORTED HOMICIDES	232
APPENDIX TABLE A.5: RESULTS FROM TWO-LEVEL NEGATIVE-BINOMIAL REGRESSIONS ON HOMICIDES IN ALL COUNTIES (N=2,999)	234
APPENDIX TABLE A.6: RESULTS FROM NEGATIVE-BINOMIAL REGRESSION USING STATE CLUSTERED STANDARD ERRORS	237
APPENDIX TABLE A.7: RESULTS FROM ZERO-INFLATED NEGATIVE-BINOMIAL REGRESSION USING STATE CLUSTERED STANDARD ERRORS	239
APPENDIX TABLE A.8: RESULTS FROM TWO-LEVEL LOGISTIC AND NEGATIVE-BINOMIAL REGRESSIONS ON OVERALL HOMICIDES WITHOUT AGGREGATED COUNTY-LEVEL MEASURES	241
APPENDIX TABLE A.9: RESULTS FROM TWO-LEVEL LOGISTIC AND NEGATIVE-BINOMIAL REGRESSIONS ON FIREARM-RELATED HOMICIDES WITHOUT AGGREGATED COUNTY-LEVEL MEASURES	243

APPENDIX TABLE A.10: RESULTS FROM TWO-LEVEL LOGISTIC AND NEGATIVE-BINOMIAL REGRESSIONS ON HANDGUN-RELATED HOMICIDES WITHOUT AGGREGATED COUNTY-LEVEL MEASURES.....	245
APPENDIX TABLE A.11: RESULTS FROM TWO-LEVEL LOGISTIC AND NEGATIVE-BINOMIAL REGRESSIONS ON LONG GUN-RELATED HOMICIDES WITHOUT AGGREGATED COUNTY-LEVEL MEASURES.....	247
APPENDIX TABLE A.12: MEDIATION EFFECT OF NRA CAMPAIGN CONTRIBUTIONS ON FIREARM POLICY ADOPTION VIA REPUBLICAN GOVERNORSHIPS.....	249
APPENDIX TABLE A.13: RESULTS OF EVENT HISTORY ANALYSES USING REPUBLICAN MAJORITY MEASURE.....	250
APPENDIX TABLE A.14: MEDIATION RESULTS USING REPUBLICAN MAJORITY MEASURE.....	251

List of Figures

FIGURE 2.1: NRA CAMPAIGN CONTRIBUTIONS BY POLITICAL PARTY (1990-2016)	29
FIGURE 2.2: ADOPTION OF FOCAL FIREARM-LEGISLATION OVER TIME (1990-2016)	42
FIGURE 2.3: DIRECT-EFFECT, JOINT-EFFECT, AND INDIRECT-EFFECT POLITICAL OPPORTUNITY MODELS	45
FIGURE 2.4: INTERACTION BETWEEN NRA JOURNAL SUBSCRIPTIONS AND PERCENT REPUBLICAN LEGISLATORS ON SYG ADOPTION	70
FIGURE 2.5: INTERACTION BETWEEN NRA JOURNAL SUBSCRIPTIONS AND REPUBLICAN GOVERNORSHIPS ON SYG ADOPTION	70
FIGURE 2.6: INTERACTION BETWEEN NRA JOURNAL SUBSCRIPTIONS AND SYG POLICY DIFFUSION ON SYG ADOPTION	71
FIGURE 2.7: INTERACTION BETWEEN NRA CAMPAIGN CONTRIBUTIONS AND NRA JOURNAL SUBSCRIPTIONS ON SYG ADOPTION	71
FIGURE 2.8: INTERACTION BETWEEN NRA CAMPAIGN CONTRIBUTIONS AND NRA JOURNAL SUBSCRIPTIONS ON CAP ADOPTION.....	82
FIGURE 2.9: INTERACTION BETWEEN NRA JOURNAL SUBSCRIPTIONS AND PERCENT REPUBLICAN LEGISLATORS ON UBC ADOPTION	82
FIGURE 3. 1: HOMICIDES BY FIREARM TYPE (1976-2017)	108

List of Equations

EQ 3.1) TWO-LEVEL LOGISTIC REGRESSION EQUATION	133
EQ 3.2) TWO-LEVEL NEGATIVE BINOMIAL EQUATION WITH LOGISTIC PROBABILITY TERM (QI)	133

I. Introduction

Since the passage of the 1936 National Firearms Act, the United States has only implemented nine other firearm-related policies at the federal level.¹ Moreover, the sweeping adoption of state-level firearm-related preemption laws since the 1980s have prevented local jurisdictions (e.g., cities, counties), at varying degrees, from implementing policies and interventions related to firearm acquisition and other firearm-related dynamics (Vizzard 2014). Lacking federal action and the limited capacity for local-level intervention means that state legislatures and courts now represent the battleground for firearm-related legislation in the United States. However, research on the correlates of firearm policy adoption across the United States remains scant (but see Malone and Steidley 2019; Steidley 2018).

Gun rights and gun control movements, as well as their respective actors, continue to lobby for firearm-related legislation (Cook and Goss 2014; Melzer 2009; Steidley and Colen 2017). While the gun rights movement has sustained its role in pushing gun rights-related policies since the 1990s, the gun control movement has not had consistent activity since the 1980s (Goss 2010). As states continue to represent the battleground for firearm-related legislation (Vizzard 2014), it is imperative that research examines how social movement organizations such as the National Rifle Association – the premier gun rights organization (Cook and Goss 2014) – have effectively employed their resources to shape (counter-)movement-related legislation.

¹ These 10 other policies include: the Federal Firearms Act (1938), the Omnibus Crime Control and Safe Streets Act (1968), the Firearm Owners Protection Act (1986), the Undetectable Firearms Act (1988), the Gun-Free School Zones Act (1990), the Brady Handgun Violence Prevention Act (1993), the Federal Assault Weapons Ban (1994-2004), the Law Enforcement Officers Safety Act (2004), and the Protection of Lawful Commerce in Arms Act (2005).

Beyond policy adoption, research on gun policies has various empirical shortcomings that limit the ability to make adequate, and accurate, conclusions about the effects of particular policies. To contextualize, many scholars and advocates contend gun policies affect the rates of gun violence in disparate ways: Some activists and scholars approach gun policies from a “gun rights” perspective. This approach contends that increased access to firearms by “law-abiding gun owners” will serve as a criminal deterrent and thus decrease crime (Lott and Mustard 1997; Lott and Whitley 1998; Kleck and Gertz 1998). Alternatively, others approach gun policies from a “gun control” perspective postulating that imposing gun safety measures (e.g., firearm storage laws) and decreasing access to firearms limits firearm usage and availability will, in turn, decrease crime (Gius 2016; Rosengart et al. 2005; Siegel et al. 2017).

Notwithstanding these schisms within gun policy scholarship, gun policy scholars have long ignored the localized nature of homicide (Messner 1983; Messner and Tardiff 1986), including well-established theoretical and empirical socio-criminological correlates (Shaw and McKay 1942; Messner 1983; Messner and Tardiff 1986). Additionally, the limited research on the geographically granular effects of gun policies remains flawed (Aneja, Donohue, and Zhang 2014; Wenger 2019a, 2019b). Specifically, geographically granular approaches have failed to adequately account for the data’s nested structure (e.g., counties nested in states) which increases the odds of Type I Error (Cheah 2009) and simultaneously failed to account for omitted level bias (Wenger 2019a, 2019b).

To address these major shortcomings in gun policy scholarship, this dissertation first examines the extent to which a prominent gun rights organization, the NRA, has

been effective in shaping the adoption of four focal state-level firearm-related policies between 1990 and 2016: Concealed Carry Weapons (CCW; gun rights), Stand Your Ground (SYG; gun rights), Child Access Prevention (CAP; gun control), and Universal Background Checks (UBC; gun control). After examining the causes of these policies, I then examine the extent to which these policies are correlated with homicide patterns in U.S. counties. Particularly, I examine the extent to which these state-level policies, in combination with county-level socio-criminological correlates, explain homicide rates. The goal of this second empirical chapter is to address a key substantive limitation of previous research while employing an analytic method more equipped to address the nested structure of the data— multi-level modelling (i.e., a methodological limitation of previous research).

Chapter 1: Social Movement Dynamics of Firearm-Related Legislation

The first empirical chapter (Chapter II) employs a social movement approach to examine how a central organization within the gun rights movement – the NRA – has employed its resources to affect the first-time adoption of four focal firearm-related policies. Previous research on the gun rights movement’s effect on CCW adoption found grassroots resources (i.e., NRA journal subscriptions) positively shapes the odds a state will adopt a CCW law (Steidley 2018). However, gun policy scholars have also contended the adoption of certain firearm policies are shaped by a “powerful gun lobby” and their campaign contributions to elected officials (Cook and Goss 2014). Extending Staggenborg’s (1988) “SMO professionalization” approach (Heideman 2017), this chapter considers how campaign contributions operate as a professionalized SMO resource that affects the adoption of firearm-related legislation in accordance with

ideological goals of the gun rights movement. Specifically, I use campaign contributions donated by the NRA to federal- and state-level political campaigns as a potential resource that shapes movement-related successes. Analyses simultaneously control for potential competing and confounding factors (Malone and Steidley 2019), including traditional grassroots movement resources (e.g., NRA journal subscriptions) (Steidley 2018).

Within this chapter, I focus on two major theoretical approaches aimed at explaining social movement successes: resource mobilization (McCarthy and Zald 1977) and political opportunity/political mediation theories (Amenta, Carruthers, and Zylan 1992; McVeigh 2016). Resource Mobilization (RM) scholars often focus on how access to resources grounded in social movement organizations (SMOs) (e.g., membership, organizational density) assist social movements in achieving successes, such as policy reform (Amenta, Caren, Chiarello, and Su 2010; Soule and Olzak 2004). However, research has predominantly focused on the effect of grassroots resources (Amenta et al. 2010) and, specifically for research on SMO professionalization, how SMOs become a professionalized SMO (i.e., the professionalization process) (Heideman 2017). However, social movement research has not extensively examined the effect of professionalized SMO resources on social movement successes, including policy adoption.

Few sociologists have conceptualized campaign contributions as an SMO resource, particularly a professionalized SMO resource (but see Bishin, Incantalupo, Hayes, and Smith 2020). Thus, I turn to research in political science to demonstrate why campaign contributions may impact policy outcomes – arguably the most visible form of social movement success (Soule and Olzak 2004). Research has shown political officials support and vote in line with the ideological missions of organizations from which they

receive campaign contributions (Austen-Smith 1987; Bouton et al. 2014; Figueiredo and Edwards 2007; Roscoe and Jenkins 2005). However, this research has focused mainly on federal-level voting patterns – a shortcoming as states represent the battleground for gun policies (Vizzard 2014).

Complementary to the organizationally-focused RM approach, empirical research based in political opportunity and political mediation approaches has identified how socio-political contexts influence social movement victories, especially policy-related successes (Amenta et al. 2010). Within the gun rights movement, political opportunities have been conceptualized as legislatures controlled by Republicans, or the presence of specific Republican elites (e.g., Governors) (Cook and Goss 2014; Melzer 2009).

Although political opportunity research has identified three different ways political opportunities can affect social movement successes (Giugni 2007), research on the gun rights movement has focused predominantly on how grassroots resources (i.e., NRA journal membership) intersect with, or are moderated by, movement-related political opportunities to shape policy adoption (Steidley 2018). Professionalized resources, however, may work with political opportunity structures differently compared to grassroots resources – an empirical question. Following this line of inquiry, I examine the conditions under which campaign contributions engage with political opportunities to assist, or stifle, the adoption of gun rights (i.e., movement-related legislation) and gun control (i.e., counter-movement related policies) policies. Specifically, I ask: *Under what conditions have states implemented gun rights and gun control policies? Specifically, how have professionalized SMO resources (campaign contributions) and social-political contexts affected the passage of gun policies between 1990 and 2016?*

To address this question, I construct a unique state-year dyadic dataset to explore the proposed research question. Specifically, this chapter examines the adoption of two major gun rights and two major gun control policies between 1990 and 2016: Concealed Carry Weapons (CCW; gun rights), Stand Your Ground (SYG; gun rights), Child Access Prevention (CAP; gun control), and Universal Background Checks (UBC; gun control). To examine the adoption of each policy, I employ a series of event-history analyses to determine the factors associated with when a state adopted each policy. Moreover, I conduct mediation/path analyses using an event-history analytic framework to examine the indirect effect of campaign contributions on policy adoption.

Findings indicate that percentage of state legislators that are Republican is associated with an increase in gun rights policy adoption and a decrease in gun control policy adoption. Even though analyses suggest that campaign contributions do not directly influence the adoption of the focal policies, results indicate this association between campaign contributions and policy adoption is mediated by Republican representation within a state's legislature – in line with the “return on investment” argument frequently made in Political Science (Snyder Jr. 1990). I close the chapter with a discussion of how these results confirm, and challenge, current research on campaign contributions and political outcomes (e.g., policy adoption), as well as a discussion about what these findings mean for the influence of economic investments in campaigns/political candidates and their effects on public policy passage in the United States.

Chapter 2: The Down-Stream Consequences of Firearm Policies for Homicides

In the second empirical chapter, I explore the consequences of the four policies for county-level homicide patterns. Extant research on the effects of firearm policies on crime trends, including homicides, has focused predominantly on state-level data and patterns, particularly associated with CCW laws (Gius 2016; Hepburn, Miller, Azrael, and Hemenway 2004; Lott and Mustard 1997; Ludwig and Cook 2003). However, these approaches fail to account for paradigmatic insights from socio-criminological theories of crime (Messner 1983; Bailey 1984; Messner and Tardiff 1986; Shaw and McKay 1942) and have been subject to methodological critiques (Ayres and Donohue 2003; RAND 2018a). Therefore, in this chapter I examine how four focal firearm-related regulations (CCW, SYG, CAP, and UBC) are related to county-level homicides trends— both generally and firearm-specific – *above and beyond* county-level correlates of homicide.

Social scientists have spent decades outlining the various correlates of homicide, as well as other crimes (Gastil 1971; Lee and Martinez 2002; Shaw and McKay 1942; Van Wilsem, Wittbrood, and De Graaf 2006). These approaches contend research on crime dynamics operates within localized geographic contexts (Messner 1983; Messner and Rosenfeld 1997) rather than more aggregate-levels (Wenger 2019a, 2019b). In particular, research finds sub-state level analyses are better equipped to assess structural theories of crime and homicide (Frelich, Adamczyk, Chermak, Boyd, and Parkin 2015; Messner 1983). However, criminological approaches often ignore the potential influence of state-level contexts (Wenger 2019a, 2019b), including the impact of gun policies. Since the majority of homicides are conducted with some type of firearm (Cooper and Smith 2011), this raises questions about how policies aimed at enhancing/limiting firearm access might explain variation in homicide patterns. Thus, firearm-related policies may

provide an additional explanation of homicides beyond these well-established correlates – an empirical question.

In contrast to criminological research, gun policy scholarship has provided insights into the potential effects of gun policies on homicides and other forms of violent crime. In a review of the literature between gun policies and violent crime, a meta-analysis conducted by RAND (2018) suggests CCW laws, a type of gun rights policy, are associated with higher levels of violent crime, including homicide. Particularly, extant gun policy research has two major substantive and methodological limitations. Substantively, gun policy research has failed to systematically account for known correlates of homicide related to socio-demographic factors (Messner and Rosenfeld 1997; Shaw and McKay 1942), particularly factors at lower levels of aggregation such as neighborhoods and counties. Methodologically, previous research examining more geographically granular effects of state policies has employed techniques that may not have been equipped to ascertain the true effect of state-level policies on localized outcomes (Aneja, Donohue, and Zhang 2014; Cheah 2009; Wenger 2019a, 2019b). To address these substantive and methodological shortcomings, I employ a multi-level modeling approach which allows the inclusion of substantive insights from socio-criminological research (Messner 1983; Wenger 2019a) and addresses the methodological limitations within gun policy research (Cheah 2009; Raudenbush and Bryk 2002; Wenger 2019a, 2019b).

I employ a series of multi-level logistic and negative-binomial models (i.e., counties nested in states) to explore the association between CCW, SYG, CAP, and UBC policies and the number of reported homicides. Across all four dependent variables

(overall homicide, firearm-related homicide, handgun-related homicide, and long-gun related homicide), county-level socio-criminological correlates are associated in theoretically expected ways and state-level contexts seem to minimally explain variation in homicides. Results indicate socio-criminological correlates of homicide, such as racial heterogeneity, geographic mobility, and economic insecurity, consistently predict the number of reported homicides, including those explicitly associated with certain firearms. Moreover, results show that firearm policies appear to have no association with homicide trends.

Overall Takeaways

This dissertation explores the causes and effects of firearm-related legislation. Synthesizing social movement scholarship and campaign contribution research in political science, I examine how campaign contributions from the NRA has shaped the adoption of state-level firearm-related legislation. Employing an SMO professionalization approach (Staggenborg 1988; Heideman 2017), I find campaign contributions, a resource available to some professionalized SMOs, uniquely shape policy adoption. Although there seems to be no evidence that campaign contributions directly influence the adoption of firearm-related legislation, campaign contributions seem are indirectly effective. Campaign contributions from the NRA are associated with a higher percentage of state-level Republican legislators which, in turn, is associated with an increased likelihood of gun rights policy adoption (SYG) and a decreased likelihood of gun control policy adoption (CAP). In line with insights from Political Science on the role of campaign contributions (Snyder Jr. 1990), funds contributed to political officials are conceptualized as an economic investment that manifests in support for policies and

initiatives in line with movement goals by the recipients (i.e., political officials), even at the state-level.

Extending these important insights about the causes of firearm policy adoption, I also examine how these state-level policies relate to homicide patterns. As previously discussed, criminological research has often ignored the role of gun policies even though firearms are present in the majority of homicides in the United States. On the other hand, gun policy scholars have failed to explicitly account for criminological insights when assessing the effect of these policies on homicides. As this dissertation demonstrates, the four focal firearm-related policies examined here – CCW, SYG, CAP, and UBC – seem to have no effect on county-level homicide rates. Specifically, findings indicate no association between these focal laws and overall homicides nor firearm-specific homicides. Given the widespread adoption of firearm-related preemption laws across the United States (Vizzard 2014), local-level jurisdictions are at the mercy of their state-level representatives to introduce and pass legislation that will address concerns and issues related to gun violence. However, these state policies may be ineffective within communities. Instead, long-standing socio-criminological theories robustly explain homicides (Messner 1983; Messner and Tardiff 1986; Shaw and McKay 1942). Put differently, gun policies may be aimed at limiting access to the cause of certain homicides – firearms – but do not address the underlying symptoms. Thus, activists and policymakers may be better suited to turn their attention towards supporting policies aimed at reducing inequities within communities as a way to reduce gun violence.

II. Empirical Chapter 1: The Effect of State-Level and Policy Dynamics on Gun Policy Outcome

A. Introduction

Social movements vary across the ideological spectrum, ranging from progressive to conservative. However, theoretical developments and the majority of empirical research has focused on dynamics associated with progressive movements (Amenta et al. 2010). In recent decades, scholars have started to explore how social movement theories can effectively be applied to conservative movements, such as the white supremacist movement (Blee 2002; McVeigh 2001), the school choice/homeschooling movement (Arum 2003; Boutcher, Kronberg, and Werum 2018), and the gun rights movement (Steidley 2018). Applying Staggenborg's (1988, 1989) concept of "SMO professionalization", I examine how the gun rights movement – as a case study – has utilized economic resources to acquire legislative successes in the United States. Specifically, I demonstrate the conditions under which the National Rifle Association (NRA) – the largest and central SMO within the gun rights movement (Cook and Goss 2014) – has employed campaign contributions to shape the adoption of specific firearm-related policies.

Within this chapter, I focus on two major theoretical approaches aimed at explaining social movement successes: resource mobilization (McCarthy and Zald 1977) and political opportunity/political mediation (McVeigh 1986; Amenta, Carruthers, and Zylan 1992). Resource mobilization (RM) scholars focus on how access to resources assist social movements, particularly social movement organizations (SMOs), in achieving desired outcomes. For example, these resources have been operationalized as the number

of organizations located within a given area (Morris 1986; Soule 2004), rates of organizational membership (Madestam, Shoag, Veuger, and Tanagizawa-Drott 2013; Steidley 2018), access to meeting spaces (Freeman 1999), and lobbying tactics (Staggenborg 1989, 1991). On one hand, extant sociological research has focused on grassroots resources and failed to consider how professionalized SMOs may employ alternative resources (e.g., campaign contributions) to affect social movement successes. On the other hand, political scientists have long explored the role of campaign contributions, and other economic resources, on the adoption of particular policies at the federal-level (Spies and Balcerzak 2016) and even federal officials' voting patterns on issue-specific policies (Bouton et al. 2014). Notwithstanding disagreement among scholars about the similarities and differences between SMOs and interest groups (Andrews and Edwards 2004; Burstein 1998), an SMO professionalization lens offers an opportunity to explore how SMOs tactfully employ resources within the polity (i.e., intra-institutional) to achieve desired outcomes, rather than traditional tactics that often operate outside of the formal political realm (i.e., extra-institutional).

Political opportunity and political mediation scholars theorize, and have empirically identified, how socio-political contexts may directly, or indirectly, shapes the odds a movement and their respective actors are successful in achieving desired outcomes (Amenta et al. 2010). Generally, political opportunity theory, including political mediation, contends social movements are not solely effective but their requisite political contexts (e.g., political make-up of the state legislature) influence the likelihood of movement-related successes. Labeling them “direct-effect,” “joint-effect,” and “indirect-effect” models, Giugni (2007, 2008) demonstrates how social movement resources and

the effect of socio-political contexts are movement-specific in how they catalyze social movement success. Given my focus on the gun rights movement, I explore how political contexts, such as the percent of legislators who are Republican legislators and Republican governorships (Cook and Goss 2014; Steidley 2018), directly shape gun rights movement successes, particularly policy-related achievements. Additionally, I explore how these contexts moderate (i.e., joint-effect) and/or operate as a mediator (i.e., indirect-effect) between SMO resources and legislative successes. Previous research on the gun rights movement (Steidley 2018) finds NRA grassroots resources (i.e., NRA journal subscriptions) are associated with the adoption of state-level Concealed Carry Weapons (CCW) laws. Additionally, Steidley finds political contexts both directly influence adoption, but also interact with NRA grassroots resources to shape the odds of CCW adoption. However, Steidley's work (2018) is, currently, the only study that explores how state-level NRA resources – specifically grassroots resources (i.e., NRA membership) – shape the adoption of pro-movement (i.e., gun rights) policies in the United States. I extend this approach by exploring how NRA campaign contributions – conceptualized as a professionalized SMO resource – are associated with the adoption of firearm-related policies.

Constructing a unique state-year dyadic dataset, I combine data from various organizational (e.g., the Prison Policy Initiative), non-profit (e.g., Center for Responsive Politics), and governmental sources (e.g., U.S. Decennial Census) to explore how campaign contributions are associated with the adoption of two major gun rights and two gun control policies between 1990 and 2016: Concealed Carry Weapons (CCW; Gun Rights) and Stand Your Ground (SYG; Gun Rights), Child Access Prevention (CAP; Gun

Control) and Universal Background Checks (UBC; Gun Control). For each of these policies, I conduct a series of event-history and mediation analyses to explore the conditions under which NRA campaign contributions and political contexts predict the *first-time adoption* of each focal policy.

Findings show that traditional political opportunity explanations (McAdam 1980) have merit, indicating that the adoption of gun-related legislation, or lack thereof, appears deeply rooted in partisan politics (Cook and Goss 2014; Malone and Steidley 2019). Moreover, results demonstrate that professionalized SMOs – in this case, the NRA – play an important role. Although there is no evidence to support campaign contributions directly shape policy adoption, professionalized SMO resources appear to work through the election of political officials (i.e., formal political channels) to achieve desired outcomes and policy-related successes (i.e., mediation) (Heidemann 2017; Langbein and Lotwis 1990; Staggenborg 1989;) – referred to by political scientists as a “return on investment” (Snyder Jr. 1990).

Based on these results, findings from this chapter make four major contributions to research in political sociology and social movements: (1) Grassroots resources, in this case NRA journal subscription rates, may be better equipped to directly impact social movement successes compared to professionalized resources; (2) campaign contributions are associated with social movement successes, indirectly so, and can effectively be considered a professionalized social movement resource; (3) professionalized movement resources effectively shape potential political opportunities and subsequent movement successes; and (4) the adoption of firearm policies vary dramatically across socio-political and demographic contexts. Although evidence presented here indicates

professionalized SMO resources may not be directly effective, they may instead be a “return on investment” by electing, in this case, pro-gun rights candidates to support ideologically-aligned legislation (and oppose gun control policies) (Snyder Jr, 1990). Given these findings, future research should examine not only the SMO professionalization process (Heideman 2017; Staggenborg 1988) but also how professionalized SMOs employ resources, and what types of resources, to garner other movement-related successes. I close this chapter with a discussion on how these results confirm, and challenge, current campaign contribution conversations and policies, as well as a discussion about what these findings mean for the influence of economic investments in campaigns/political candidates and their effects on public policy passage in the United States.

B. SMO Professionalization

Although earlier theories of collective action employed psychological explanations related to relative deprivation (Gurr 1970), scholars have shifted towards more structural explanations rooted in organizational and polity-related dynamics (Amenta et al. 2010; Useem 1998). Specifically, resource mobilization theory (RMT) focuses on how organizational resources, such as members (i.e., grassroots resources), are employed by SMOs to achieve desired outcomes. Resource mobilization scholars often analyze how specific social movement organizations (SMOs) and their various resources (e.g., members, revenue) affect desired outcomes (e.g., movement-related policy adoption). Moreover, social movement professionalization – the process some resource-rich organizations undergo that informs tactical decisions and polity access (Staggenborg 1988, 1989) – may lead to increased intra-, rather than extra-, institutional tactics and

inform the influence of social movements on political actors. For the purposes of this chapter, “intra-institutional” tactics refer to social movement tactics that movement actors (e.g., organizations) employ within formal political channels, such as lobbying and campaign contributions. Alternatively, “extra-institutional” tactics refer to tactics that are employed outside of formal political spaces, such as protests and letter-writing campaigns. For example, Heideman (2017) finds when non-governmental organizations (NGOs) undergo SMO professionalization they tend to engage in more intra-institutional tactics to promote peacebuilding during times of conflict.

As a case in point, this dissertation focuses on the NRA as a case study to explore how professionalized SMOs in the United States employ financial resources to influence movement-related policies. Using McCarthy and Zald’s (1977) definition of SMOs as organizations that seek to achieve goals as part of a larger movement, Melzer (2009) makes one of the first cases that the NRA engages with political power structures to achieve successes in line with the broader gun rights movement, similar to that of traditional SMOs (Amenta et al. 2009; McCarthy and Zald 1977; Tarrow 1998). Historically, the NRA engaged in protests and other extra-institutional measures to protect perceived 2nd amendment freedoms (Cook and Goss 2014; history of the NRA discussed in detail below). The NRA’s tactical decisions reflect those of other contemporary movements including, but not limited to, the Civil Rights (Hall 2007; McAdam 1980), Feminist (Cole, Zucker, and Ostrove 1998; Staggenborg 2001), and LGBTQ+ (Stone 2016) movements. Thus, it makes sense to consider the NRA to be an SMO.

However, deciding whether the NRA, and other interest group-type organizations, constitute SMOs remains contentious in social movement studies (Andrews and Edwards 2004; Burstein 1998).² Although in its contemporary form the NRA predominantly employs institutionalized legislative tactics (i.e., campaign contributions, lobbying) and supports certain gun-related legislation and politicians, it can only be effectively considered a “professionalized” organization since the 1980s/90s (Cook and Goss 2014; Melzer 2009).

Lobbying efforts and related “interest group” behaviors (Andrews and Edwards 2004) may be more common in professionalized SMOs that have garnered access to large-scale economic resources and increased their intra-polity reverence and support (Heideman 2017; Staggenborg 1988). Moreover, these organizations may play an important role when movements are in the doldrums and maintain engagement with political elites even during constrained periods (Faupel and Werum 2011; Rupp and Taylor 1987). To examine the effect of how a professionalized SMO within the gun rights movement (i.e., the NRA) utilizes their resources to achieve movement-related

² Scholars have debated how interest groups can be considered a part of social movements. Andrews and Edwards (2004) argue interest groups, especially those that employ institutionalized lobbying efforts, should be considered separate from traditional SMOs. Interest groups are often defined as voluntary organizations that attempt to influence the government from within the political system (Walker 1991). Alternatively, social movement organizations have long been conceptualized as organizations that identify with specific movement goals and seek to achieve movement-related outcomes through extra-institutional measures (McCarthy and Zald 1977). While Jenkins (1995) and others have argued SMOs uniquely operate outside the traditional political system, Burstein (1998) posits interest groups operate within the polity but also engage in similar extra-institutional actions as discussed by traditional RMT scholars. Andrews and Edwards (2004) contend interest groups are more institutionalized, or integrated in the political arena, by a level of “degree” (Andrews and Edwards 2004: 483), rather than trying to pinpoint particular actions (i.e., intra-institutional, extra-institutional) to define organizations as an SMO or an interest group. Put differently, SMOs traditionally have been conceptualized to exist, or engage in actions, outside of the political arena, albeit still interested in garnering politicians’ attention through extra-institutional actions (Gamson 1990). Alternatively, interest groups are integrated into the political arena (i.e., intra-institutional) to a certain extent that incorporates intra-institutional actions, such as lobbying and campaign contributions (Andrews and Edwards 2004).

successes, I ask: How has the NRA's access to, and utilization of, campaign contributions affected various movement-related state-level legislative successes? The NRA provides a unique organizational case because it has benefitted from resources related to organizational strength, such as finances and membership (Cook and Goss 2014; Melzer 2009; Steidley 2018), that may allow for more institutionalized actions compared to "traditional" SMOs (Staggenborg 1988, 1989).

C. Case Selection: The National Rifle Association (NRA)

Since its founding in 1871, the NRA has shifted their perspective on firearm-related legislation and rights (Charles 2018). In its earlier stages, the NRA operated predominantly as a marksmanship group that focused on providing military training, and training for other firearm owners, to responsibly own and use their firearms (Charles 2018). For example, the NRA supported seminal gun control laws in the 1930s, such as the National Firearm Act of 1934 – taxing the creation and sell of firearms in the United States – and the Gun Control Act of 1968 – which “[imposed] stricter licensing and regulation on the firearm industry, [established] new categories of firearm offenses, and [prohibited] the sale of firearms and ammunitions to felons and certain other prohibited persons” (Bureau of Alcohol, Tobacco, Firearms, and Explosives 2020). Yet, it was not until the late 1970s and onward the NRA would turn towards actively supporting gun rights policies and strengthening their lobbying and campaign contribution efforts.

In 1977, the NRA experienced internal protests and protestors that utilized parliamentary procedural processes during the annual NRA convention to oust then-President Maxwell Rich (Davidson 1993). Harlon Carter, who organized the coup and previously led the NRA's Institute for Legislative Action (NRA-ILA), the NRA's

lobbying branch, was elected as the new President after dissenters in the organization changed the organization's by-laws during the annual business meeting (Davidson 1993). Carter altered the trajectory of the NRA, transitioning away from marksmanship training and gun control support. Carter focused on strengthening the lobbying and political presence of the NRA, all in order to protect gun owners' perceived *2nd Amendment* rights.

While the NRA continued to support presidential and congressional candidates throughout the 1980s (Charles 2018), the organization did not see many legislative, or policy-related, successes until the late 1980s and mainly in the 1990s. In 1987, Florida passed the first "shall-issue" Concealed Carry Weapons policy, heavily backed by the NRA (Lattanzio 1987), followed by ten more states by 1995. Similarly, preemption laws became a focal state policy promoted by the NRA especially in the 1990s (Goss 2010). Preemption laws limit the ability for local governmental forces (e.g., counties, cities) to develop and implement firearm-related regulations and, essentially, leaves gun policy decisions to state actors (Vizzard 2014). Although it took approximately a decade to successfully shift platforms and re-structure the NRAs lobbying wing towards mainly intra-institutional tactics, this allowed the accumulation of massive resources which have allowed their integration into, and legitimacy within, the formal political process.

Today, the National Rifle Association (NRA) operates at all political levels (e.g., local, state, national) and presents a powerful and central organization within the gun rights movement. Overall, the NRA reported more than 5 million members in 2018 (NRA 2018 [<https://home.nra.org/about-the-nra/>])³, contributed more than \$1 million in

³ Although the NRA reports their membership annually through a bulletin, journalists and other watch-dog groups have criticized these numbers as inflated and inaccurate based on magazine subscription data (see Gilson's (2018) insightful report in *Mother Jones*).

campaign finances in state and federal elections during each election cycle since 2000, and spent upwards of \$20 million dollars on *external contributions* (e.g., communication costs, independent expenditures) in each election since 2012 (Center for Responsive Politics 2018).⁴

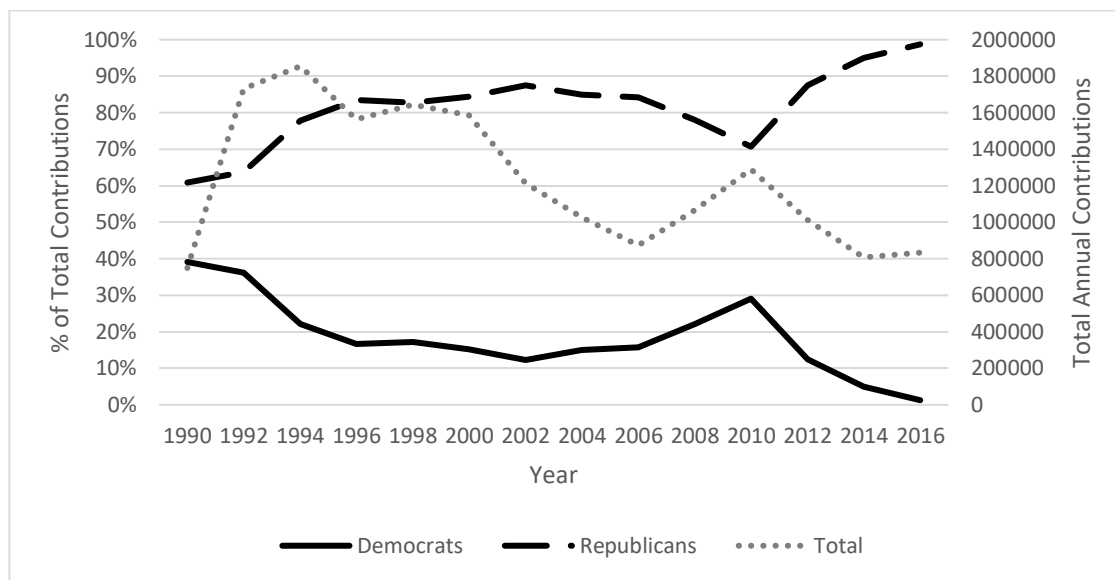


Figure 2.1: NRA Campaign Contributions by Political Party (1990-2016)

Source: Center for Responsive Politics

Since its shifts in ideology in 1977 and the growing political partisanship in the NRA’s distribution of campaign contributions over time (see Figure 2.1), the NRA has a clear interest in promoting policy changes and policy makers that support gun rights and perceived rights under the *2nd Amendment* (Cook and Goss 2014; Light 2017). Yet, we know surprisingly little about the extent to which the NRA’s campaign contributions have shaped firearm-related policy patterns. Interestingly, scant research has been

⁴ To contextualize, “campaign finances” refer to contributions that are directly paid to political officials’ campaigns; whereas “external contributions” refer to money spent on commercials or other indirect campaign dynamics to support the election of a particular candidate. Within the political science literature, campaign finances are viewed as a direct investment into a candidate and the actions by the political officials whose campaign receives these funds is referred to as a “return on investment” of the organization’s monetary donations (Snyder Jr. 1990). Thus, campaign finances (referred to as “campaign contributions” from this point forward) are the focus of this chapter.

conducted to understand how resources, broadly defined, within the gun rights movement and its respective organizations (e.g., the NRA) have affected political successes (but see Steidley (2018)).

D. Social Movement Success

The adoption of policies in the United States often undergoes three major stages: introduction, debate, and passage. Policy passage – the final stage in the policy adoption process – indicates a policy has been approved at all necessary, preceding stages and signed into law. While the adoption process varies across political contexts in the United States, state and federal policies enacted undergo multiple vetting and approval phases (Smith 1973). Therefore, policy implementation represents a unique and visible, arguably the most visible, outcome for social movements (Soule and Olzak 2004). Political scientists have developed various theories to understand how and why policies are passed which includes, but is not limited to, social movement and interest group dynamics (Sabatier 2007). Conversely, social movement scholars have taken attention to exploring how social movements and their respective organizations employ available resources (e.g., membership) to achieve movement-related successes, including the passage of movement-related social policies (Amenta, Carruthers, and Zylan 1992; Amenta et al. 2010). Typically, research in social movements views movements and their affiliated organizations as a driving force of social change, a premise grounded in theory and supported empirically (Amenta et al. 2010; McAdam, McCarthy, and Zald 1988),

especially in passing social policies related to movement goals (Duffy 2003; Olzak and Soule 2009).⁵

For this dissertation, I focus on four major firearm-related policies: Concealed Carry Weapons (CCW; Gun Rights), Stand Your Ground (SYG; Gun Rights), Child Access Prevention (CAP; Gun Control), and Universal Background Checks (UBC; Gun Control). Each of these policies represent a popular gun rights or gun control policy that the gun rights movement has either actively promoted or opposed. Given states have been the battleground for gun policies for the past 30 years (Vizzard 2014), I focus specifically on policy passage at the state-level. To help conceptualize these policies, I first turn to discuss each policy before turning to social movement and Political Science literatures to understand how, and why, particular resources and political contexts may shape their adoption.

E. Gun Rights Policies: Concealed Carry Weapons and Stand Your Ground

Gun rights policies are often framed by gun rights advocates as a way to reduce crime and violence by arming citizens to protect themselves (Carlson 2015; Melzer 2009), while simultaneously protecting individual rights to bear arms (Cook and Goss 2014). Alternatively, gun control advocates believe gun control policies are best designed to reduce crime and violence (Goss 2010; Spitzer 2011). Thus, I focus on four popular gun-related policies. First, I focus on two policies supported by gun rights activists (CCW, SYG) that protects perceived *2nd Amendment* freedoms by extending access to firearms (Steidley and Colen 2017). Moreover, the NRA provides economic support to

⁵ However, research has found movements and their related organizations may be more effective at earlier stages of the policy development process, specifically bills being introduced and debated within the respective legislative bodies (Soule and Olzak 2004).

candidates and legislators, often Republicans, who introduce, support, and vote to approve gun rights legislation (Cook and Goss 2014; Micklethwait and Woolridge 2005).

Concealed Carry Weapons (CCW) Laws

One example of gun rights legislation involves Concealed Carry Weapons (CCW) laws. CCW laws specify what criteria are used to attain a concealed handgun license in a state. CCW laws vary from a more subjective approach by law enforcement and gun regulators that allows discretion in licensing (i.e., “may-issue”) to a required licensing approach so long as the applicant meets necessary criteria (i.e., “shall-issue”).⁶ Not surprisingly, gun rights advocates and organizations consistently support “shall-issue” CCW laws in order to avoid the possibility of bias or repression from law enforcement and other regulatory forces (Cook and Goss 2014; Steidley 2018). Arguing “concealed carry permits should not be granted on a subjective basis,” the NRA (2010) has supported “shall-issue” CCW laws actively for several decades. Since the 1980s, “shall-issue” CCW laws have increased dramatically with a handful of scholars positing these successes are due to a powerful “gun lobby,” more specifically the NRA (Goss 2008; Spitzer 2011). While Steidley (2018) finds NRA grassroots resources (e.g., magazine subscriptions) are associated with the passage of state-level CCW laws, there have been no state-level analyses that explore how the economic investments by the NRA, or

⁶ Given my time period of interest (1990-2016), I focus on “shall-issue” CCW laws passed in states. However, states have started to transition away from shall-issue CCW laws and towards “Constitutional” Carry laws. Referred to as “Freedom to Carry” laws by some gun rights activists, this allows all individuals in a state to carry a concealed carry weapon on their person without meeting certain criteria similar to those implemented through CCW laws. As of 2017, 15 states have passed Constitutional Carry laws including: Vermont (1791), Montana (1991), Alaska (2003), Texas (2007), Arizona (2010), Wyoming (2011), Arkansas (2013), Kansas (2015), West Virginia (2016), Idaho (2016), Mississippi (2016), Missouri (2017), New Hampshire (2017), and North Dakota (2017).

professionalized resources (e.g., campaign contributions), have had any impact on the passage of CCW laws.

Stand Your Ground (SYG) Laws

Since the 18th century, the United States has wrestled with the implementation of earlier policies commonly referred to as “Castle Doctrines.” Castle Doctrines were designed to allow individuals to use lethal force within their homes, to defend themselves only when the victim had retreated back to their “castle,” referring to their residence, and still feared for their life. Starting in the 2000s, states began adopting SYG policies and, beginning with Florida in 2005,⁷ states expanded the “castle” to encompass public spaces and allow for a person to use lethal force, including in public spaces, if they *perceived* their life was at risk (Light 2017). In recent years, Stand Your Ground (SYG) laws have received popular attention following the killing of Trayvon Martin by George Zimmermann in 2012 and the subsequent ruling citing SYG as the justification for a not-guilty verdict (*Florida v. Zimmerman* 2013). Although NRA lobbyists have supported the passage of SYG laws (Jordan 2012) and the NRA has supported these efforts in their publications (Yamane, Ivory, and Yamane 2019), no research has explored how the NRA has effectively promoted and informed the passage of SYG laws at the state level.

⁷ Florida is often cited as the first state to implement a Stand-Your-Ground (SYG) policy. However, Utah actually implemented an SYG law in 1995 and was recently updated it to reflect contemporary SYG laws in 2018 (Davidson 2018). Given the 10-year lag between Utah and Florida and the exponential growth in SYG policies post-2005, I contend Florida marks the beginning of SYG policy adoption in the United States despite the anomalous adoption of Utah’s SYG law in 1995.

F. Gun Control Policies: Child Access Prevention and Universal Background Checks

Although the NRA is a gun rights movement organization, it not only focuses on promoting gun rights legislation but also seeks to stifle gun control legislation (Spitzer 2011). While gun control activists often see gun control policies as a way to reduce gun violence, gun rights supporters, including the NRA, have spoken out against particular policies. Often, gun rights advocates argue gun control laws, such as CAP and UBC laws, violate the rights of “law-abiding” gun owners and lead to increases in crimes (Steidley and Colen 2017). Thus, I focus on two focal gun control policies in this dissertation.

Child Access Prevention (CAP) Laws

Owning firearms not only means that individuals can carry and use said firearm, but also that these items are stored when not in use. To date, only limited firearm storage requirements exist, with extensive variation in regulations between states. State-level Child Access Prevention (CAP) laws serve as an example of such storage requirements. They require gun owners to store their firearms under certain conditions and stipulate that the gun owner is held criminally liable should a child of a certain age gain access to the firearm and discharge the weapon.⁸ Specifically, these policies “encourage the safe storage of firearms by imposing liability on adults who allow children to have unsupervised access to guns” (Giffords Law Center 2019). While these policies seek to

⁸ Child Access Prevention (CAP) laws often have three different age-thresholds for holding gun owners criminally liable if an adolescent (of that age or younger) discharges a firearm: 14, 16, and 18. According to the State Firearm Laws Database, the states that have passed these types of policies have mainly passed those focused on the 14-year old threshold (or younger). For the purposes of this dissertation, I focus on general “Child Access Prevention” laws, but there is a critical need for research to examine when, how, and under what conditions states adopt varying levels of these policies.

promote safe storage of firearms, the child's age for which the person can be held accountable varies from state-to-state. Put differently, some policies state if a child age 17 or younger gains access to a firearm and discharges the weapon then the gun owner may be held accountable. Conversely, other state-level policies lower the age threshold to be 14 or younger.

While the policies are framed as a protection of children by gun control activists and supporters (Moms Demand Action 2019; Everytown for Gun Safety 2019), the NRA and gun rights activists argue these CAP policies are “unnecessary, ineffective, and endanger law-abiding gun owners” (Mortensen 2017) – often referred to as “The CAP Law Myth.” (NRA-ILA 2016). While some research has found the introduction of CAP policies decreases the number of adolescent gun-related deaths (RAND 2019), the National Rifle Association's Institute for Legislative Action (NRA-ILA 2020) argues adolescent firearm-deaths have been declining since the 1970s and this trend is not caused, or associated, with the adoption of CAP laws. The NRA sees CAP policies as an infringement on the rights of gun owners and presents unnecessary burden and a violation of a person's *2nd Amendment* freedom (NRA-ILA 2016). While some research has explored the impact of these policies (see RAND Corporation (2019) for a meta-analysis), no research has explored whether the NRA has been effective in stifling the passage of Child Access Prevention Laws in the United States.⁹

⁹ Important to note, here I broadly conceptualize Child Access Prevention (CAP) policies following similar research (DeSimone, Markowitz, and Xu 2013; Hepburn et al. 2006). However, policies defined as CAP policies vary extensively and have varying degrees of severity and enforcement (Gifford's Law Center 2019). There remains a critical need for gun policy research to examine the diversity of CAP laws and their effects rather than conceptualizing them as a broader gun policy.

Universal Background Checks (UBC) Laws

Although the Brady Act of 1993 mandates federally licensed firearms dealers to conduct background checks, there is no similar federal law for private sales. Therefore, implementing broader background checks remains the responsibility of individual states, especially for private sales and non-licensed transfers of firearms (for example see Colo. Rev. Stat. § 24-33.5-424(2)). For example, UBC laws require background checks on all people buying any firearms. In contrast, background check laws vary by types of guns requiring background checks (e.g., rifles, handguns). In line with the NRA's ideological position, the NRA vehemently opposes the expansion of background checks beyond those implemented by federal law under the premise they are an unnecessary burden and violate *2nd Amendment* freedoms (NRA-ILA 2020). Interestingly, research has found that firearm owners, including NRA members, predominantly support UBC policies (Barry et al. 2013) – a contentious point given the oppositional stance of the NRA. Seeing as UBC laws operate as a form of gun control that is often opposed by the NRA, I ask: *To what extent have the NRA's efforts in the political arena affected the passage of background check legislation in the United States between 1990 and 2016?*

Having discussed and conceptualized the four focal policies for this chapter, I turn to discuss the two major theoretical paradigms employed to understand how social movement organizations and political contexts shape subsequent movement successes – in this case policy passage. Specifically, I focus on resource mobilization theory (RMT) and political opportunity/mediation approaches to explain how movements effectively shape the adoption of movement (and counter-movement) policies.

G. Social Movement Theory and Movement Success

Resource Mobilization Theory (RMT)

Early social movement scholarship conceptualized social movement organizations (SMOs) as a unique entity within social movements that deserve attention (Zald and Ash 1966). Organizations often access resources that help support the types of activities SMOs can access and engage in, varying across extra- (e.g., protests) and intra-institutional (e.g., lobbying) axes (Crossley 2002; Olzak and Ryo 2007). These resources can manifest in multiple ways, including, but not limited to: churches during the civil rights movement (McAdam 1980), networks across movements and organizing efforts (Evans 1980; McAdam 1980), and even lobbying to support social movement efforts (Ferree et al. 2004; Staggenborg 1991). Although McCarthy and Zald (1977) posited that individuals and organizations do not necessarily have to align with movement values, SMOs are often dedicated to movement goals (Tarrow 1998) and help maintain movements during the ebb and flow of resources and shifting political climates (Faupel and Werum 2011; Staggenborg 1988).

Originally, resource mobilization approaches postulated that activists (rank-and-file, as well as leaders) and SMOs provide sources of support to broader social movements (e.g., money, labor), regardless of their “commitment to the values that underlie the specific movement” (McCarthy and Zald 1977: 1216). Contemporarily, research has started to explore whether there is a clear difference between “interest groups” and “social movement organizations”, with some scholars arguing for their similarity (Burstein 1998) and others their uniqueness (Andrews and Edwards 2008). Although these disciplinary debates continue, resource mobilization theory provides a

useful framework to examine the effect of SMO resources, broadly defined, on social movement successes.

Building on early resource mobilization literature, scholars have also developed a “movement infrastructure” approach to understand how SMOs affect movement successes. While researching the Mississippi Civil Rights Movement, Andrews (2001, 2004) developed the movement infrastructure model which posits “organizational structure, resources, and leadership...account for the impact of social movements on policy implementation” (2001:71). These factors reflect earlier resource mobilization work by considering how organizational factors, such as access to resources, inform the ability (see Cress and Snow (1996)) of a movement to reach desired outcomes (Rupp and Taylor 1993; Tarrow 2006).

Resources, such as organizational membership, help organizations and movements gain legitimacy in the political sphere (Robnett 1996) and, in turn, are subsequently allocated more power, or influence, in the political process (Gamson 1990). Various approaches to resource mobilization research focus on organizational resources as an influential factor that helps enact policy change across different stages of the political process (Andrews 2004; Gamson 1990; McCarthy and Zald 1977). Also, SMOs may engage in more intra-institutional efforts to achieve movement outcomes depending on the amount of resources at their disposal. Staggenborg (1988) refers to this process as “SMO professionalization.” This is particularly important given my focus on the NRA since its access to vast economic resources leads to an increased likelihood of employing intra-institutional actions.

Specifically, campaign contributions represent a unique type of SMO resource. These contributions are financial contributions made to political officials or campaigns by organizations, firms, or individuals (i.e., campaign finances), often with a particular issue or ideological position that indicates support for a particular candidate or their initiatives (Austen-Smith 1995; Claessens, Feijen, and Laeven 2008). Campaign contributions often come from issue-driven organizations, such as the NRA, and are considered an investment for support of a group's goals and initiatives (i.e., "a return on investment") (Snyder Jr. 1990). Thus, I consider campaign contributions as a key SMO resource that requires further theoretical and empirical consideration within the social movement literature. Although social movement scholars have systematically ignored the role of campaign contributions as a professionalized resource, political scientists have long explored the correlates and effects of campaign contributions on various political processes – predominantly at the federal-level – including some specific to firearm-related legislation.

Focusing mainly on individual representatives' receipt of contributions and their subsequent voting patterns (Austen-Smith 1987; Figueiredo and Edwards 2007), the findings are often mixed (Wawro 2001). For example, one study found that campaign contributions from issue-specific groups shaped approximately one-third of votes on various legislation (Roscoe and Jenkins 2005). Related research has found that campaign contributions may increase, decrease, or have a null effect on the odds an elected official will support certain policies (Conley and McCabe 2012; Lessig 2011; Milyo, Primo, and Groseclose 2000). However, extant research has focused largely on federal-level elected representatives' (i.e., United States Congress) voting patterns and election outcomes. The

extent to which these patterns reflect the dynamics shaping firearm-related policy passage remains an open empirical question, given that states have presented the central battleground for firearm-related legislation since the 1980s (Vizzard 2014).

Gun policy scholars have argued the implementation of gun-related policies have been shaped by a “powerful gun lobby” and the subsequent economic resources contributed to supportive political elites by gun rights organizations (Cook and Goss 2014). As discussed by Cook and Goss (2014) and Spitzer (2011), the NRA’s money comes from the vast membership and movement supporters from which they receive financial donations, as well as the gun industry, advertising, and services they sell (e.g., insurance). While members vary in their economic standing (Melzer 2009), members donate to the NRA to help financially support candidates dedicated to protecting perceived *2nd Amendment* freedoms (Spitzer 2011). For example, the NRA contributed more than \$1 million to various political campaigns and more than \$55 million on other outside spending used to mainly support gun rights legislators and candidates (Spies and Balcerzak 2018), predominantly Republicans (Melzer 2009; see Figure 2.1). Importantly, researchers have found the NRA’s economic contributions shaped federally elected officials’ voting patterns on both gun rights and gun control policies (Bouton et al. 2014; Kahane 1999; Langbein and Lotwis 1990). Given these findings, research supports the effectiveness of campaign contributions on various gun-related voting patterns at the federal-level, therefore shaping the policy adoption process. However, there have been minimal successes in federal-level gun regulations passed since the 1930s and the battleground for the passage of gun-related policies has shifted to

state-level legislatures (Vizzard 2014). Thus, there is a critical need to examine how these resources affect the adoption of firearm-related legislation within state-level contexts.

Based on the theoretical expectations associated with resource mobilization theory, SMO professionalization, and political science literatures on campaign contributions, I propose the following hypotheses:

H1a: States that are reported to receive *more* NRA campaign contributions will be *more* likely to adopt a Concealed Carry Weapons (CCW) law.

H1b: States that are reported to receive *more* NRA campaign contributions will be *more* likely to adopt a Stand Your Ground (SYG) policy.

Movement/Countermovement Dynamics

Movement narratives and efforts are also shaped by the countermovement dynamics through which the (focal) movement responds by employing various SMO resources (Boutcher, Kronberg, and Werum 2018; Meyer and Staggenborg 1996; Steidley and Colen 2017). However, the presence of a gun control movement has been sparse and, arguably, ineffective in achieving successes over the past 30 years (Goss 2010; see Figure 2.2). Notwithstanding the seeming absence of a powerful gun control movement, the gun rights movement, and particularly the NRA, has employed resources to oppose multiple policies aimed towards constraining and limiting access to firearms (Davidson 1998; Langbein and Lotwis 1990). The passage of gun rights laws compared to that of gun control laws (see Figure 2.2) indicates gun rights laws (CCW, SYG) experienced increased passage since the 1990s; whereas gun control laws (CAP, UBC) saw fewer successes across U.S. states.

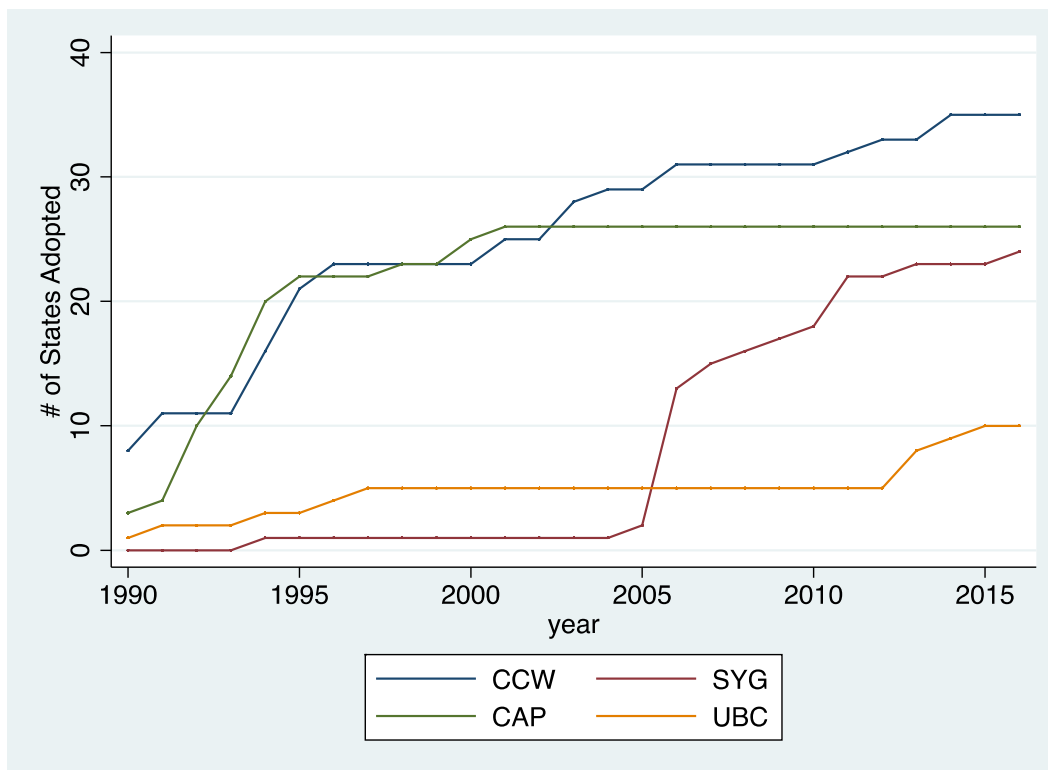


Figure 2.2: Adoption of Focal Firearm-Legislation Over Time (1990-2016)
 Data Source: State Firearm Laws Database
 Note: CCW=Concealed Carry Weapons; SYG=Stand Your Ground; CAP=Child Access Prevention; UBC=Universal Background Check

Surprisingly, little work has examined how SMO resources shape countermovement legal successes (Burstein 1991; Luker 1984). Notwithstanding this dearth of literature, a countermovement approach to RMT would postulate movements, especially those with vast resources and access to political elites, can employ their resources to oppose, and arguably halt, the adoption of countermovement policies and initiatives. To that end, I propose the following hypotheses:

H1c: States that are reported to receive *more* NRA campaign contributions will be *less* likely to adopt a Child Access Prevention (CAP) policy.

H1d: States that are reported to receive *more* NRA campaign contributions will be *less* likely to adopt a Universal Background Check (UBC) policy.

Political Opportunity/Mediation Approaches

Scholars have also stressed the important role opportunities in political and cultural spheres play in shaping social movement outcomes (Borland 2004; McCammon et al. 2001; McAdam 1982; McAdam, Zald, and McCarthy 1996; Tarrow 1998).

However, the application of political mediation/political opportunity approaches has varied, at times specific to the movement context (Giugni 2007; Meyer and Minkoff 2004). Below I provide an overview of the various pathways through which political contexts, or opportunities, can shape movement-related successes.

Tarrow (1998:19-20) posits that political opportunities are “dimensions of the political struggle that encourage people to engage in contentious politics.” Put differently, political settings help foster engagement and assist in achieving movement successes, especially when they are supportive and sympathetic of movement goals (Meyer and Minkoff 2004; Steidley 2018). Rooted in these contentious political dynamics during the Civil Rights Movement era, McAdam’s (1980) political process model explores how political elites and particular socio-historical processes shaped movement successes. However, scholars have critiqued common ways of operationalizing political opportunities, contending political opportunities are too broad and require refinement in order to adequately capture causal mechanisms of political and social change (Meyer and Minkoff 2004). Notwithstanding these critiques, empirical research has operationalized political opportunities as: the political make-up of state executive and legislative branches (Scheuerman, Faupel, Parris, and Werum 2020; Steidley 2018), support of a movement through government allies (Faupel and Werum 2011), the decline of major political parties (Tarrow 1998), changes with, or presence of, split elites (Bloom 1987;

Winders 1999; Scheuerman et al. 2020), and changing public opinion related to movement dynamics (Burstein 1998). Collectively, political opportunities have been found to affect multiple stages of social movement development (Jenkins 1995), mobilization efforts (Soule 2004), and achievement of various outcomes throughout the political process (McCammon et al. 2001; Soule and Olzak 2004).¹⁰

Within the gun rights movement, scholars have found sympathetic political elites, such as Governors and state legislative representatives, are important dynamics for gun rights-related successes (Cook and Goss 2014; Malone and Steidley 2019; Steidley 2018). Particularly, Republican, or more conservative-leaning ideological windows of opportunity, within state-level political contexts have been operationalized as political opportunities (Melzer 2009; Cook and Goss 2014). For example, Steidley (2018) and Malone and Steidley (2019) find states with more Republican representatives and Republican governors increase the adoption of state-level CCW laws in the United States. Combining broader theoretical expectations and previous research on the gun rights movement, I propose the following hypotheses:

¹⁰ Expanding beyond traditional political opportunity approaches, cultural opportunities represent shifts in social aspects (e.g., gender relations) that may in turn influence political decision-makers to vote in line with, or against, movement-related policies (McCammon et al. 2001). Similar to political opportunities, cultural opportunities refer to, “societal circumstances that increase or decrease the potential that a social movement will be able to gain societal support for its cause” (Borland 2004: 329). Researchers have operationalized cultural opportunities in many ways, including, but not limited to public opinion and media frames (Gamson and Meyer 1996), women’s educational and employment attainment (McCammon et al. 2001), and public opinion towards particular movement goals (Kane 2003) and social groups (Boutcher, Kronberg, and Werum 2018). Cultural opportunities have been similarly applied to various movement development and success stages, indicating its influential nature within the social movement literature (Boutcher, Kronberg, and Werum 2018). Overall, research indicates political and cultural opportunities, especially environments with movement allies in elite positions (e.g., Congress, state legislatures) and supportive societal forces (e.g., pro-issue public opinion), facilitate social movement successes (McAdam, McCarthy and Zald 1996).

H2a: States with *more* Republican legislators or a Republican Governor will be *more* likely to adopt a CCW policy.

H2b: States with *more* Republican legislators or a Republican Governor will be *more* likely to adopt a SYG policy.

H2c: States with *more* Republican legislators or a Republican Governor will be *less* likely to adopt a CAP policy.

H2d: States with *more* Republican legislators or a Republican Governor will be *less* likely to adopt a UBC policy.

Related political mediation models suggest SMOs and their abilities to succeed (or fail) work in tandem with socio-political contexts rather than independently (Amenta, Caren, and Olasky 2005; Giugni 2007; Soule and Olzak 2004). As Amenta, Carruthers, and Zylan (1992) postulate, SMO dynamics (or similar social movement efforts) and movement successes (or failures) are *moderated* by political opportunities. In this approach, movements engage with political opportunity structures which, in turn, increase the likelihood, for example, certain movement-related policies will be adopted (Amenta, Carruthers, and Zylan 1992).

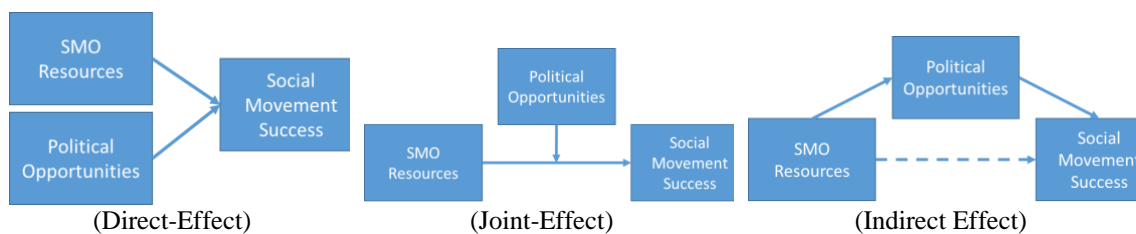


Figure 2.3: Direct-Effect, Joint-Effect, and Indirect-Effect Political Opportunity Models

As documented by Cress and Snow (2000) and others, movement efforts to enact policy change are most effective when there are political allies that hold substantial power (e.g., Senators, Presidents) to support movement efforts. Discussed as “direct-”

and “joint-” effect approaches to political mediation, Giugni (2007) finds these theoretical approaches – traditional political opportunity (direct-effect) and traditional political mediation (joint-effect) – are complementary and movement-specific. To help visualize these traditional approaches, Figure 2.3 shows how a direct-effect model approaches social movement successes, whereas the joint-effect model explores how political opportunities enhance SMO efforts in achieving desired outcomes.

Joint-effect approaches postulate political opportunities assist social movements, including SMOs, and their successes (and failures) (Giugni 2007). Previous research on the gun rights movement has employed a joint-effect approach to explore how sympathetic political contexts (e.g., Republican legislators, Republican Governors) interact with SMO resources to shape the odds of policy adoption. As Steidley (2018) finds, states with more NRA members *and* a higher percentage of Republican legislators or the presence of Republican Governors are more likely to adopt a CCW policy. Given Steidley’s (2018) focus on grassroots resources (i.e., membership), I explore whether this association works similarly, or differently, for professionalized resources. Thus, I propose the following hypotheses:

H3a: States with *more* NRA campaign contributions will have a *stronger* effect on CCW policy adoption when there are cultural/political opportunities present.

H3b: States with *more* NRA campaign contributions will have a *stronger* effect on SYG policy adoption when there are cultural/political opportunities present.

H3c: States with *more* NRA campaign contributions will have a *weaker* effect on CAP policy adoption when there are cultural/political opportunities present.

H3d: States with *more* NRA campaign contributions will have a *weaker* effect on UBC policy adoption when there are cultural/political opportunities present.

Beyond direct- and joint-effect approaches, Giugni (2007) and others (Biggs and Andrews 2015; Giugni 2008; Giugni and Yamasaki 2009; Huang and Sun 2019) have proposed, and tested, the *indirect-effect* hypothesis. Essentially, the indirect-effect approach posits movements employ resources to directly shape the socio-political landscape (e.g., election of political representatives) and, thus, create political opportunities that then increase the odds of success (Amenta et al. 2010; Giugni 2008). The majority of the indirect-effect literature within social movement studies has focused on public opinion as the mediating factor (Giugni 2007; Burstein 1998; Krehbiel 1991; Lohmann 1993). Yet research on campaign contributions provides insight into why we might expect professionalized SMO resources to shape the political context (e.g., state legislative make-up) which, in turn, shapes the adoption of (counter-)movement policies and initiatives.

In particular, organizations contribute money and time to political campaigns in line with their ideological values (Langbein and Lotwis 1990; McCarthy and Zald 1977; Staggenborg 1989) in hopes of electing candidates who support their efforts (Bouton et al. 2014). As previous research has shown, the percentage of legislative seats occupied by Republican legislators consistently and robustly predicts the adoption of various conservative policies (Gahman 2015; Jiobu and Curry 2001; Mencken and Froese 2019), especially those related to gun rights and firearm access (Malone and Steidley 2019; Steidley 2018). As identified by Malone and Steidley (2019), state-level political make-up (i.e., percent Republican legislators) effectively predicts the adoption of stronger

CCW laws across states, particularly more Republican-leaning legislatures. This dynamic is unsurprising given that state-level legislatures are central to a state's policy process (Calvo and Sagarzazu 2011; Jewell and Whicker 1994), and the NRA has funneled campaign contributions heavily towards Republican legislative campaigns, resulting in multiple legislative victories (Francia et al. 2005; Center for Responsive Politics 2019).

These campaign contributions are used by political officials' campaigns to buy television ads and fund other efforts to inform the public about a candidate, their values, and policies/initiatives they plan to support (Milyo, Primo, and Groseclose 2000). As research has shown in elected officials' voting patterns, the amount of money a politician receives from particular organizations not only increases their odds of election (Alexander 2005; Giles and Pritchard 1985; Snyder Jr. 1990), but contributions have been found to shape candidate voting along the economic contributors' ideological lines (Herndon 1982; McKay 2008). For example, research on federal officials' voting patterns on gun policies indicates individuals who received more NRA campaign contributions voted in favor of gun rights and in opposition of gun control initiatives (Langbein and Lotwis 1990; Kahane 1999; Roscoe and Jenkins 2005). To summarize, campaign contributions shape the election and voting patterns of candidates which subsequently shapes voting patterns on policies and initiatives in line with the contributing organization's goals, in this case the support of gun rights policies. Thus, I propose the following hypotheses:

H4a: States with *more* NRA campaign contributions will be associated with the election of more Republican legislators and Governors which *will positively* affect CCW adoption.

H4b: States with *more* NRA campaign contributions will be associated with the election of more Republican legislators and Governors which *will positively* affect SYG adoption.

H4c: States with *more* NRA campaign contributions will be associated with the election of more Republican legislators and Governors which *will negatively* affect CAP adoption.

H4d: States with *more* NRA campaign contributions will be associated with the election of more Republican legislators and Governors which *will negatively* affect UBC adoption.

H. Chapter 1 Data and Methods

This chapter examines when states first adopted particular gun-related policies and how social movements shaped the passage of these policies between 1990 and 2016. States comprise the unit of analysis because most gun policy regulation occurs at the state level (Vizzard 2014). For example, various types of firearm pre-emption laws currently exist in 44 states (Giffords Law Center 2019). These pre-emption laws, predominantly passed in the late 1980s and early 1990s (Rapoport 2018), prohibit or limit local-level governments (e.g., counties, cities) from passing regulations or ordinances surrounding gun ownership and violence. In turn, these laws leave state-level representatives responsible for introducing, debating, and passing all gun-related policies and regulations. Moreover, Vizzard (2014) argues that even beyond preemption laws, states have represented the battleground for gun policies due to lacking federal protections and reforms since the early 1900s.

To examine the determinants of gun-related state laws, this chapter employs state-level data from various data sources including, but not limited to: the *State Firearms Laws Database*, *Alliance for Audited Media*,¹¹ the *U.S. Census Bureau*, and the *Correlates of State Policy* dataset. Since states can implement and rescind particular policies over multiple legislative cycles, I focus solely on the first time a state passed a law – conceptualized and operationalized as a form of social movement success or, in the case of gun control adoption, a social movement failure (Soule and Olzak 2004; Steidley 2018). Moreover, I examine how the National Rifle Association’s resources (i.e., campaign contributions) specifically predicts the adoption of firearm policies between 1990 and 2016.

To help provide insight into how I explore these dynamics, I provide an overview of my dependent, independent, and control variables employed, as well as the analytic methods used. Table 2.1 provides an overview of all variables employed in the subsequent analyses, including their descriptive statistics.

Dependent Variables

For the purpose of this dissertation, I focus on two popular gun rights policies (CCW and SYG) and two popular gun control policies (CAP, UBC). All four dependent variables have enough variation over time to statistically assess the role the NRA has had on firearm policy adoption, or the lack thereof.¹² Figure 2.2 provides a visual

¹¹ I would like to thank Trent Steidley for making his NRA membership data publicly available through his website. The data are derived from Steidley (2019).

¹² Gun control laws are ubiquitously less likely to be passed compared to gun rights laws (see Figure 2.2). Over the time period of interest (1990-2016), 26 states adopted a CAP policy and 9 states adopted a UBC policy. In contrast, 24 states adopted a SYG policy and 29 states adopted a CCW policy. Thus, there is more temporal variation in the adoption of gun rights laws compared to gun control laws, a limitation returned to in a later section.

representation of how many states have passed each of the focal policies since 1990.¹³ Each of the outlined policies come from the *State Firearm Laws Database*, which notes the year a state adopted certain firearm-related policies. First, I focus on the following two forms of gun rights legislation: Concealed Carry Weapons Laws (CCW) and Stand-Your-Ground Laws (SYG).

To reiterate, CCW laws often take two major forms: “may-issue” and “shall-issue.” “Shall-issue” CCW laws are argued to remove subjectivity in the licensing process and are the focus for this chapter. For this reason, I only focus on when a state first passed a shall-issue CCW law (“CCW law” from this point forward). Given my focus on state-level dynamics, a state is coded “0” if there is no CCW law passed in a given year and “1” if a CCW law is passed in a particular year.¹⁴

The second gun rights policy is Stand Your Ground (SYG) laws, which expand previous “Castle Doctrines” (Light 2017). Similar to CCW laws, I focus on when a state passed an SYG law for the first time in a given year. A state is coded “0” if there is no SYG law passed in a given year and “1” if an SYG law is passed in a particular year.

¹³ Since I focus on first passage, after a state passes a particular policy it is coded as missing from that point forward given the analytic method (discussed below). However, the number of states that with Concealed Carry Weapons Laws has declined as states have started to extend CCW laws towards “Constitutional Carry.” CCW laws are passed as either “may-issue” or “shall-issue” policies – for which I focus only on “shall-issue” states – which require the oversight of a governing body (usually local or state police) to approve and provide licenses to carry a concealed weapon in a state. However, in recent years states have started to pass Constitutional Carry, or “Freedom to Carry,” policies that do not require anyone in the state to go through an application or licensing process. The NRA has backed a number of these Constitutional Carry bills in states such as Kentucky (NRA-ILA 2019) and South Dakota (NRA-ILA 2019). See Footnote 1 for more insight into how many states have passed these policies and in what years.

¹⁴ In line with event-history analyses, after an observation receives a “1”, or adopts the policy, the state is then dropped or, in technical terms, “dies” (Singer and Willett 2003). This is true for all other dependent variables in this chapter and is discussed in more detail below.

Second, I focus on two major gun control policies to explore how the NRA operates as a movement, but similarly engages in countermovement initiatives to stifle gun control legislation due to fears of governmental oversight and suppression of Constitutional freedoms. Specifically, I focus on Child Access Prevention (CAP) and Universal Background Checks on Handguns (UBC) laws.

CAP laws extend, or introduce, storage and/or age restrictions that hold the firearm owner accountable if a child accesses and/or unlawfully discharges the firearm.¹⁵ Given research on CAP laws is limited in scope, I focus on whether or not a state has passed a CAP policy, broadly defined (see Anderson, Sabia, and Tenkin (2018) for an overview). Data were obtained from the *State Firearm Laws Database* and other peer-reviewed research (Anderson, Sabia, and Tenkin 2018; DeSimone, Markowitz, and Xu 2013) to determine when each state passed any form of CAP policy. States are coded “0” if there is no CAP law passed in a given year and “1” if a CAP law is passed in a particular year.

Finally, the second gun control law refers to UBC laws. UBC laws extend background checks on firearm sales beyond those set forth by the Brady Act of 1993.

¹⁵ Importantly, there are multiple variants of this policy across the United States. There are two major types of CAP laws: Negligent Storage and Reckless Endangerment (Anderson, Sabia, and Tenkin 2018). Negligent Storage CAP laws are designed to hold firearm owners accountable and place penalties on those who do not store them as defined by state law. Reckless Endangerment CAP laws operate similarly but are designed to hold firearm owners accountable if an adolescent below a certain age (varies by state) accesses and discharges the firearm. Overall, both are designed to hold firearm owners accountable for when firearms are unlawfully discharged due to negligence on behalf of the owner. However, state-level differences exist regarding the age qualifications for when a firearm owner can be criminally held liable for a minor unlawfully discharging a firearm (e.g., 14 or under, 16 or under, 18 or under). Sensitivity, or robustness checks, cannot be conducted on subsets of these policies as the number of policies in the time period is too few and does not meet the standard levels for an discrete-time event history analysis (Singer and Willett 2003).

Following the coding scheme of all other policies, a state is coded “0” if there is no UBC law passed in a given year and “1” if a UBC law is passed in a particular year.

Independent Variables

Resource Mobilization: Professionalized and Grassroots Resources

For the purpose of this chapter, I employ two measures of NRA resources: a professionalized resource (i.e., campaign contributions) and a grassroots resource (i.e., magazine subscriptions). First, I employ a measure of *NRA Campaign Contributions* using data from the *Center for Responsive Politics*. This measure is designed to represent the NRA’s economic resources – a professionalized SMO resource – beyond traditional grassroots measures. The *Center for Responsive Politics* is “the nation's premier research group tracking money in U.S. politics and its effect on elections and public policy” (Center for Responsive Politics 2019). Data for all contributions to politicians running for elected office within a state are reported, regardless of whether or not they succeed.¹⁶ Specifically, the *Center for Responsive Politics* breaks down these contributions by donors, state, and year, allowing for an annual, state-level measure of campaign contributions. One shortcoming of this data source is that it only reports those who run for federal office (e.g., Senate, House of Representatives) and gubernatorial races, not those running for most state- or local-level offices. I return to this limitation later. Total

¹⁶ Not all states report their campaign contributions. Five states were missing data on campaign contributions: Delaware (1990-2016), Hawaii (1990-2016), Massachusetts (2016), New Jersey (1990-2016), and Vermont (1990-2016). Given Massachusetts is only missing 1 year of data, I extrapolate the amount of campaign contributions for that single state-year observation. However, the other 4 states were missing all years of data and are dropped from the analyses. By dropping these 4 states (DE, HI, NJ, VT), 108 observations are lost, lending a total sample size of 27 years x 46 states or n=1,242.

campaign contributions are summed by each state and year, which includes all campaign contributions reported in a state in a given electoral cycle (2 years).

To account for NRA grassroots resources (Steidley 2018), I employ a measure of *NRA Journal Subscriptions* (per 100,000 residents) based on Steidley (2019). Made publicly available, Steidley (2019) published magazine subscription data for the three major NRA magazines (*America's First Freedom*, *American Hunter*, and *The American Rifleman*) from 1998 to 2016 at the state-level. These data were originally used by Steidley (2018) to explore how the NRA effectively influenced the passage of CCW laws. To construct the measure, the total count of NRA journal subscriptions is divided by the state-level population (per 100,000 residents) to construct the number of *NRA Journal subscribers* per 100,000 people. Steidley's (2018) data is only available after 1998, therefore I extrapolate the 8 missing years (1990-1997) of NRA journal subscription data.¹⁷

Political Opportunity Structure

A number of different variables may represent potential political opportunities, each of which are specific to the gun rights movement. Below I provide an overview of potential political opportunities that are associated with gun-related legislation passage and how they are operationalized in the subsequent analyses.

Given the previous literature and theoretical underpinnings of political opportunity structure, I construct a measure of a state legislature's *percent Republican legislators* combining data from Klarner's (2013) *State Legislative Election Returns*

¹⁷ Although NRA grassroots resources are not the focus of this dissertation, including the measure as a potential SMO resources allows a comparison of how grassroots and professionalized resources are similarly or uniquely effective.

dataset (1990-2011), the *National Conference of State Legislature's Partisan Composition* data (2012-2016) (NCSL 2019) and *Nebraska Blue Books* (1990-2016).¹⁸ Ranging from 0 to 100, a value closer to 100 represents a higher percentage of Republican legislators within the legislature whereas a value closer to 0 represents a more Democratic legislature.¹⁹

Similarly, I construct a measure regarding the Governor's political affiliation within the designated time period. Employing data from Klarner's *Governor's Dataset* (1990-2011) and the *National Lieutenant Governors Association* gubernatorial election results (2012-2016) (NLGA 2019), I construct a binary measure for whether a state has a Democrat/Independent (0) or Republican (1) as Governor in any given year.

Beyond state-level political make-up, scholars have consistently found that diffusion effects play a role. Specifically, as more neighboring states pass similar policies, the odds of adoption within a state increases (Renzulli and Roscigno 2005; Soule and Olzak 2004; Strang and Meyer 1993). Moreover, diffusion of social policies and social movement resources often work collectively to increase the likelihood of a

¹⁸ Since Nebraska is a unicameral state, the *percent Republican legislators* is constructed by coding the number of Republican representatives in a given year and dividing them by the total number of seats occupied based on reports from the *Nebraska Blue Books*. Although conceptually the same, Nebraska does not have a Senate and House of Representatives; therefore, compared to other states there are fewer seats in the lawmaking body.

¹⁹ Sensitivity analyses were conducted using a party dominance measure. If a state reported that 51% or more of their state representatives are registered Republicans were coded as "1" and less than 51% was coded as "0". Results are available in Appendix Tables A.13 do not substantively change the results. The mediation results (Appendix A.14) do not meet the traditional levels of significance ($p > .05$) and do not statistically confirm the mediation results presented below. There are two potential explanations: 1) 51% (the threshold used in these analyses) may not capture a true dominance of the Republican party in a given state or 2) it does not capture the variation in Republican representation which may be an important piece in gun policy adoption (Malone and Steidley 2019). However, there continues to be significant evidence NRA campaign contributions are positively associated with Republican representation (as seen in Appendix Table A.14).

state adopting a particular policy (Fernández and Lutter 2013; Steidley 2018). Following this research, I construct a *diffusion* measure for each specific policy (CCW, SYG, CAP, UBC). This measure calculates the total number of neighboring states that have adopted each respective policy in a given year and divides it by the total number of neighboring states. Transformed into a percentage (multiplied by 100), a value closer to 0 means fewer neighboring states have adopted a certain policy and a value closer to 100 means more neighboring states have adopted this policy.

Controls

To avoid potential spuriousness and inaccurate inference, I employ a number of state-level socio-demographic and political indicators frequently associated with gun-related policies (Malone and Steidley 2019). First, I control for the *Hunting Licenses* approved in a state in a given year. This measure comes from the *U.S. Fish and Wildlife Service* and is constructed by dividing the total number of hunting licenses by the population size (per 100,000 residents). Models also include two control measures to gauge racial and ethnic dynamics often associated with firearm ownership and conservative social policies (Carlson 2015; Malone and Steidley 2019), specifically the *percent Black* and *percent foreign-born*,²⁰ plus a measure of gender demographics (*percent Female* per state). Additionally, I include a measure of a state's constituency that report having a high school degree or higher (*percent High School graduates*) as well

²⁰ Prior to 2007, data on the foreign-born population was asked in the decennial census rather than the American Community Survey (ACS). Therefore, data for the percent foreign-born in a state is retrieved from Historical Census tables for both 1990 (<https://www.census.gov/population/www/documentation/twps0029/tab01.html>) and 2000 (<https://www.census.gov/prod/2003pubs/c2kbr-34.pdf>). However, the decennial Census removed the foreign-born question in 2010 and the ACS began asking the question in 2007. To employ the best measures of foreign-born populations within states, I collect data from the ACS for all data from 2007 to 2016. To supplement the missing data points (1991-1999, 2001-2006), I interpolate between the 1990 and 2000 Censuses and between the 2000 Census and 2007 ACS.

as the *median age*. All of these variables come from the Decennial U.S. Census (1990, 2000, 2010) and, if not available in the Census, the American Community Survey (2010). The *percent Evangelical* is included given religious dynamics of firearm ownership (Yamane 2017) and are retrieved from the National Council of Churches' decennial *Churches and Church Membership in the United States* (1990, 2000, 2010). Following similar state-level research (Boutcher, Kronberg, and Werum 2018; Soule and Olzak 2004), I interpolate between time points (1991-1999, 2001-2009) and extrapolate these measures after 2010 (2011-2016).²¹

Because crime rates might inform the perceived importance or relative nature of gun-related policies (Brewer and Heitzeg 2008; Steidley 2019), I also control for the *violent crime rate*, retrieved from the FBI's Uniform Crime Report (FBI 2019) which provides a count of all violent crimes per 100,000 residents. Additionally, research has found conservative policies, including firearm-related policies (Malone and Steidley 2019), are shaped by rates of incarceration (Oliver 2008; Teles 2012). Therefore, I include the incarceration rate for states as calculated by the *Prison Policy Initiative* (<https://www.prisonpolicy.org/data/>). I also control for regional dynamics, particularly for whether or not a state is located in the *Southern Census Region*.²² Finally, to control for

²¹ Interpolations were conducted using a linear interpolation method using the decennial years as the bounds. Year was used as the variable for which the interpolation was modeled (i.e., interpolations are based on a 1-unit increase).

²² In analyses not reported here, I included a measure of mass shootings, because mass shootings have been posited to represent an event that represents a political /cultural opportunity for firearm-related mobilization (Rogowski and Tucker 2019; Steidley 2018). Since definitions of mass shootings are debated (Smart 2018), I used both continuous and binary measures, with data, derived from Mother Jones' *US Mass Shooting Database*, 1989-2019. Due to the "rare events" characteristic of mass shootings reported, insufficient variation existed at the state-level to adequately assess the role that mass shootings play in policy adoption. Future research needs to explore the potential link between mass shooting events and policy implementation.

other state-level political dynamics, I introduce a measure of *citizen ideology* from the Correlates of State Policy dataset which measures the political partisanship (Democrat to Republican) of the average citizen in a state in a given year.

Analytic Strategy

To examine the proposed hypotheses, I employ discrete-time event-history models (Singer and Willett 2003). The data for this study are uniquely tied to states (observation) and years (time) and an observation “dies,” or is dropped from the analysis, once it passes a policy; thus, the data are observed discretely rather than continuously (Allison 2014). As such, the number of observations (see Table 2.1) varies for each specific gun-related policy: CCW (n=545), SYG (n=991), CAP (n=688), and UBC (n=1,075). Policy implementation often occurs at either the start of a year (January 1st) or at the start of a fiscal year (July 1st). However, debate about adoption and the passage of the policy often occur in the previous year’s legislative session. Thus, there are issues related to temporality. To help address these issues, all independent and control variables are lagged by 1 year (t-1).

For each of the focal gun-related policies (CCW, SYG, CAP, UBC), I also conduct a series of path analyses using MPlus 7.0 (Muthén and Muthén 2011). Because the dependent variable is a (rare) binary outcome and the mediator is continuous, MPlus provides results for the direct and indirect effects, and accounts for the scaling differences of the mediating and dependent variables (Muthén and Muthén 2011). Following best practices, I use a Monte Carlo method to address potential bias in the standard error

calculation.²³ Although some scholars contend bootstrapping is the best method when performing mediation (Cheung and Lau 2008; Hayes 2009), Preacher and Selig (2012) find the Monte Carlo method is better equipped to deal with dependent variables that are rare in their occurrence (in my case, policy passage). Since the number of observations varies for each policy, I estimate and report the mediation findings individually for each policy.

I. Chapter 1 Results

Descriptive Statistics

Table 2.1 reports the descriptive statistics of all variables used in the subsequent analyses. Although not reported in Table 2.1 (but see Figure 2.2), 35 states adopted a CCW law by 2016, 24 states had adopted an SYG law, 26 states had adopted a CAP law, and 10 states had adopted a UBC law. As for the resource mobilization measures, the NRA reports contributing, on average, \$22,913 to political campaigns within a given state, and is reported to have approximately 54,721 journal subscribers in the average state.²⁴ On average, states are reported to have 48% of their state-level legislature made up of Republicans, and 53% of states had a Republican governor between 1990 and 2016. As for the diffusion of gun policies, states are reported to have an average of 31.77% of surrounding states that have passed a CCW policy, 10.74% of bordering states with a

²³ Analyses using a bootstrapping method for standard errors were conducted. However, the models would not converge due to lacking variation in the dependent variable. Since event-history analyses drop observations after they adopt a policy (i.e., a value of “1”), this limits the number of observations with “1” to at most a single temporal point for each state.

²⁴ NRA Campaign Contribution and Membership statistics are reported here prior to any transformations, including divided by the total population (i.e., per capita) and logging to account for heteroscedasticity. This is to help provide a meaningful statistic.

SYG law, 32.4% of bordering states with a CAP policy, and 7.12% of surrounding states with a UBC policy.

Table 2.1: Data Description and Descriptive Statistics

Variable	Description	Source	M/P	SD	N
<i>Dependent Variables</i>					
	Whether or not a state has passed a CCW Law	State Firearm Laws Database, NexisUni			
CCW Adoption	Whether or not a state has passed an SYG Law	State Firearm Laws Database, NexisUni	0.042		545
SYG Adoption	Whether or not a state has passed a CAP Law	State Firearm Laws Database, NexisUni	0.021		991
CAP Adoption	Whether or not a state has passed a UBC Law	State Firearm Laws Database, NexisUni	0.034		688
UBC Adoption			0.007		1075
<i>Resource Mobilization</i>					
NRA Campaign Contributions ^{1,3}	Total amount of money that has been contributed to politicians running for federal office	Center for Responsive Politics	9.520	2.085	1,242
NRA Journal Subscriptions ¹	Total number of people in a state that are subscribed to three major NRA magazines	Steidley (2019)	1131.094	627.563	1,350
<i>Political Opportunities</i>					
% Republican Legislators	Percent of seats in a state legislature that are held by Republicans	Klarner (2013), National Conference of State Legislatures, Nebraska Blue Books	48.065	16.289	1,350
Republican Governor	Whether or not a state has a Republican Governor	Klarner (2013), National Governor's Association	0.529		1,350
Diffusion (CCW)	Percentage of surrounding states that have passed CCW laws	Author Calculations	31.768	32.622	1,350
Diffusion (SYG)	Percentage of surrounding states that have passed an SYG Law	Author Calculations	10.739	20.860	1,350
Diffusion (CAP)	Percentage of surrounding states that have passed a CAP Law	Author Calculations	32.426	30.034	1,350
Diffusion (UBC)	Percentage of surrounding states that have passed a UBC Law	Author Calculations	7.117	15.071	1,350
<i>Controls</i>					
Hunting Licenses ³	Total number of hunting licenses in a state	U.S. Fish and Wildlife Service	20089.130	12691.670	1,350

Table 2.1: Data Description and Descriptive Statistics

Variable	Description	Source	M/P	SD	N
% Urban ⁴	Percent of people who reside in an urban area of a state	Decennial Census (1990, 2000, 2010)	71.933	14.651	1,350
% Poverty ⁴	Percent of a state population that fall below the federal poverty threshold	Decennial Census (1990, 2000, 2010)	13.551	3.570	1,350
% Black ⁴	Percentage of total state population that are Black	Decennial Census (1990, 2000, 2010)	10.103	9.506	1,350
% Foreign-Born ⁴	Percentage of total state population that are Foreign Born	Decennial Census (1990, 2000), American Community Survey (2010)	7.204	5.708	1,350
% Female ⁴	Percentage of total state population that are Female	Decennial Census (1990, 2000, 2010)	50.794	0.797	1,350
% Evangelical ⁴	Percentage of total state population that are Evangelical Christians	Churches and Church Membership in the United States (1990, 2000, 2010)	15.704	11.388	1,350
% High School Graduates ⁴	Percentage of the state population that holds a high school degree or higher	Decennial Census (1990, 2000), American Community Survey (2010)	83.400	5.865	1,350
Median Age ⁴	Median age of resident in a state	Decennial Census (1990, 2000, 2010)	35.374	5.471	1,350
Violent Crime Rate	Rate of violent crimes in a state per 100,000 people	FBI Uniform Crime Report	438.074	216.811	1,350
Incarceration Rate	Rate of incarceration in a state per 100,000 people	Prison Policy Initiative	367.889	151.509	1,350
Citizen Ideology	Average political ideology of state resident	Correlates of State Policy	50.414	15.874	1,350
South	Whether or not a state is located in the Census's "South" region	Author Calculations	0.320		1,350

Note: CCW=Concealed Carry Weapons, SYG=Stand Your Ground, CAP=Child Access Prevention, UBC=Universal Background Check

¹ In the analyses, this measure is divided by the total population to create a per capita measure.

² Variable is measured per 100,000 people in the analytic models.

³ Variable is interpolated and/or extrapolated between Census points (1990, 2000, 2010) to account for missing data.

⁴ Four states did not have any reported campaign contributions and are treated as missing; Massachusetts was missing 2015-2016 data and these missing values are extrapolated to account for the missing data.

States issued 681,389 hunting licenses in an average year, with a significant standard deviation ($SD=661,872.8$).²⁵ Related to state-level demographics, 13.6% of the average state's population reportedly lives below the federal poverty level and 71.7% report residing in an urban area. Approximately 10% of the average state's population is Black, 7.2% are Foreign-Born, 50.8% are Female, and 15.7% of residents are Evangelical Protestants. Additionally, 83.4% of the average state's residents have a high school degree or higher, and the median age in a state is approximately 35 years old. On average, states are reported to have 438 violent crimes (per 100,000 residents) and 368 people who are incarcerated (per 100,000 residents). As for political ideologies, the average citizen falls equally between the conservative-liberal political ideological spectrum ($M=50.41$). Additionally, 32% of states are located within the Census' Southern region.

Multi-Variable Results: Event History Analyses of Gun Rights and Gun Control Policies

Now I turn to discuss the results from the event-history analyses to explore how social movement dynamics predict when a state first adopts a gun-related policy.²⁶ First, I turn to discuss how NRA campaign contributions and political opportunities related to gun rights have shaped the first-time adoption of 2 focal gun rights policies: Concealed Carry Weapons (CCW) and Stand Your Ground (SYG).

Gun Rights Policy Adoption: CCW and SYG

Resource mobilization theory posits SMO resources – professionalized and grassroots – will positively predict the adoption of pro-movement policies, in this case,

²⁵ Data are reported prior to being divided by the total population and logged; however, the transformed results are reported in Table 2.1.

²⁶ I mean-center all continuous variables to account for potential multi-collinearity that occurs when using two continuous predictors in interactions.

gun rights policies. In this section, I examine how NRA resources and political opportunities have affected the adoption of state-level CCW (H1a, H2a, H3a, H4a) and SYG (H1b, H2b, H3c, H3d) laws between 1990 and 2016. Table 2.2 displays the results for CCW adoption, whereas Table 2.3 focuses on SYG adoption. In this section, I only report the results from the full model (Model 1) and each individual interaction (Models 2-8). Below I report the findings and how the results are similar, or different, for each gun rights-related policy.

Tables 3.2 and 3.3 report all empirical results for CCW and SYG law adoption, respectively. Starting first with resource mobilization findings, there is no evidence to support the hypothesis that NRA campaign contributions are directly associated with ($p > .05$) the adoption of either CCW or SYG laws. Despite theoretical expectations, the results do not statistically support the proposed hypotheses (H1a, H1b). Alternatively, NRA journal subscriptions – a grassroots resource – are positively associated with the adoption of CCW (OR=1.002, $p < .001$) but negatively associated with SYG law adoption (OR=0.998, $p < .05$). Although CCW is in line with theoretical expectations (H1a), the SYG results indicate an unexpected finding (H1b) potentially related to membership and organizational ideological differences (Barry et al. 2013).

Table 2.2: Effect of Gun Rights Movement Resources and Political Opportunities on CCW Policy Adoption

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	OR	OR	OR	OR	OR	OR	OR	OR
<i>Resource Mobilization</i>								
NRA Campaign Contributions	1.812	1.853	1.942	1.690	1.800	1.801	1.828	1.841
NRA Journal Subscriptions	1.002 ***	1.002 ***	1.002 ***	1.002 ***	1.002 **	1.002 **	1.002 **	1.002 ***
<i>Political Opportunities</i>								
% Republican Legislators	1.012	1.014	1.014	1.013	1.012	1.017	1.009	1.015
Republican Governor	0.761	0.786	0.847	0.744	0.754	0.813	0.774	0.747
Diffusion (CCW)	0.993	0.993	0.994	0.992	0.993	0.994	0.993	0.994
<i>Controls</i>								
Hunting Licenses ₁	1.136	1.121	1.135	1.151	1.137	1.130	1.136	1.185
% Urban	1.015	1.017	1.015	1.014	1.015	1.006	1.015	1.013
% Poverty	1.148	1.151	1.150	1.150	1.148	1.146	1.145	1.143
% Black	0.936	0.935	0.938	0.932	0.937	0.941	0.938	0.931
% Foreign-Born	0.803 **	0.796 **	0.803 **	0.798 **	0.803 **	0.817 *	0.806 *	0.816 *
% Female	0.466	0.414	0.478	0.552	0.478	0.527	0.315	0.664
% Evangelical	0.837 **	0.836 **	0.837 **	0.834 **	0.836 **	0.844 **	0.840 **	0.836 **
% High School Graduates	0.759	0.759	0.762	0.763	0.758	0.781	0.761	0.765
Median Age	1.027	1.027	1.026	1.026	1.027	1.021	1.027	1.025
Violent Crime Rate ₁	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Incarceration Rate ₁	1.002	1.002	1.002	1.002	1.002	1.003	1.002	1.003
Citizen Ideology	0.924 *	0.925 *	0.925 *	0.923 *	0.923 *	0.928 *	0.924 *	0.923 *
South	8.212	8.406	8.121	9.079	8.306	7.344	7.310	10.581
Year	0.937	0.938	0.937	0.939	0.937	0.933	0.930	0.934
<i>Interactions</i>								
NRA Campaign Contributions X % Republican Legislators		0.994						

NRA Campaign Contributions X Republican Governor			0.799					
NRA Campaign Contributions X Diffusion (CCW)				1.004				
NRA Journal Subscriptions X % Republican Legislators					1.000			
NRA Journal Subscriptions X Republican Governor						1.001		
NRA Journal Subscriptions X Diffusion (CCW)							1.000	
NRA Campaign Contributions X NRA Journal Subscriptions								1.000

N	545							
Pseudo R ²	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
AIC	210.1	212	212	211.9	212.1	211.6	211.9	211.7

Note: CCW=Concealed Carry Weapons
 *p<.05, **p<.01, ***p<.001, two-tailed test, OR=Odds Ratio
₁ Variable is measured per 100,000 residents.

Table 2.3: Effect of Gun Rights Movement Resources and Political Opportunities on SYG Policy Adoption

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	OR	OR	OR	OR	OR	OR	OR	OR
<i>Resource Mobilization</i>								
NRA Campaign Contributions	1.737	2.069 *	2.966 *	1.862	1.570	1.713	1.409	2.083
NRA Journal Subscriptions	0.998 *	0.998 *	0.998 *	0.998 *	0.999	0.999	0.997	0.998 *
<i>Political Opportunities</i>								
% Republican Legislators	1.075 **	1.091 **	1.078 **	1.074 **	1.087 **	1.081 **	1.101 **	1.076 **
Republican Governor Diffusion (CCW)	0.862	0.882	1.457	0.880	0.915	0.981	0.732	0.815
	0.967 **	0.965 **	0.963 **	0.956 **	0.966 **	0.965 **	0.977	0.966 **
<i>Controls</i>								
Hunting Licenses ₁	0.400	0.357	0.386 *	0.424	0.403	0.389 *	0.341	0.373 *
% Urban	0.977	0.977	0.969	0.966	0.984	0.974	1.014	0.981
% Poverty	1.306	1.325	1.365	1.334	1.184	1.256	1.342	1.344
% Black	0.943	0.938	0.938	0.942	0.958	0.932	0.941	0.952
% Foreign-Born	0.850	0.852	0.865	0.865	0.843	0.822 *	0.776	0.824
% Female	4.197	4.745	3.542	4.122	5.859	6.196	0.690	6.170
% Evangelical	0.935	0.931	0.931	0.931	0.947	0.925	0.916 *	0.934
% High School Graduates	1.234	1.249	1.291	1.258	1.068	1.166	1.109	1.243
Median Age	0.928 *	0.921 *	0.924 *	0.926	0.946	0.919 *	0.938	0.927 *
Violent Crime Rate ₁	1.002	1.002	1.002	1.002	1.001	1.002	1.000	1.002
Incarceration Rate ₁	1.005	1.005	1.005 *	1.005	1.005	1.005	1.005 *	1.004
Citizen Ideology	1.029	1.039	1.039	1.021	1.012	1.025	1.015	1.029
South	15.905 *	19.149 *	20.445 *	16.156 *	7.788 *	15.068 **	25.028 *	13.972 *
Year	1.388 ***	1.418 ***	1.400 ***	1.382 ***	1.395 ***	1.462 ***	1.396 **	1.434 ***
<i>Interactions</i>								

NRA Campaign Contributions X % Republican Legislators		0.969						
NRA Campaign Contributions X Republican Governor			0.433					
NRA Campaign Contributions X Diffusion (CCW)				1.013				
NRA Journal Subscriptions X % Republican Legislators					1.000	**		
NRA Journal Subscriptions X Republican Governor						0.997	**	
NRA Journal Subscriptions X Diffusion (CCW)							1.000	*
NRA Campaign Contributions X NRA Journal Subscriptions								0.999 *
N	991	991	991	991	991	991	991	991
Pseudo R ²	0.269	0.277	0.278	0.275	0.296	0.305	0.327	0.284
AIC	205.1	205.4	205.2	205.9	201	199.2	194.1	203.7

Note: SYG=Stand Your Ground

*p<.05, **p<.01, ***p<.001, two-tailed test, OR=Odds Ratio

¹ Variable is measured per 100,000 residents.

As for the direct-effect of political opportunities on policy adoption, there is no evidence to support the hypothesis that any of the identified political opportunities are associated ($p > .05$) with the adoption of CCW policies. These results are antithetical to the proposed hypothesis (H2a) and previous empirical research on CCW policy adoption (Steidley 2018). In contrast, in line with theoretical expectations (H2b), states with more Republican legislators are more likely to adopt SYG policies ($OR = 1.075$, $p < .05$). There is no evidence to support the presence of a Republican Governor impacts the adoption of SYG laws ($p > .10$). Contrary to theoretical expectations of diffusion, there is a negative association with the adoption of SYG laws in neighboring states and a state's odds of SYG adoption ($OR = 0.970$, $p < .05$). Although there is a significant, negative association with diffusion and SYG policy adoption, this may be due to the large up-tick in states adopting SYG policies in 2006 (see Figure 2.2). Put differently, these limitations may present difficulties in adequately assessing the role of diffusion given the first major state (Florida) to adopt (and ultimately diffuse) SYG laws has a limited number of neighboring states ($n = 2$).

Now, I turn to explore how SMO resources and political opportunities interact to catalyze the adoption of gun rights policies (Models 2-8). Despite empirical and theoretical expectations (H3a), results indicate neither NRA campaign contributions nor NRA journal subscriptions interact with political opportunities to predict the adoption of CCW laws. Despite states increasing adoption of CCW policies between 1990 and 2016 (see Figure 2.2), multiple states ($n = 12$) are dropped because they adopted these policies prior to the first analytic time point (pre-1990) – a limitation I return to later in the chapter.

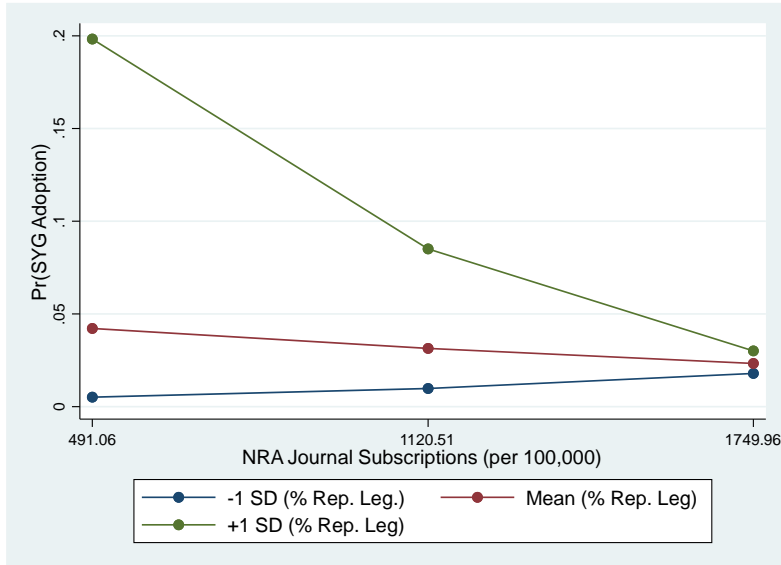


Figure 2.4: Interaction between NRA Journal Subscriptions and Percent Republican Legislators on SYG Adoption

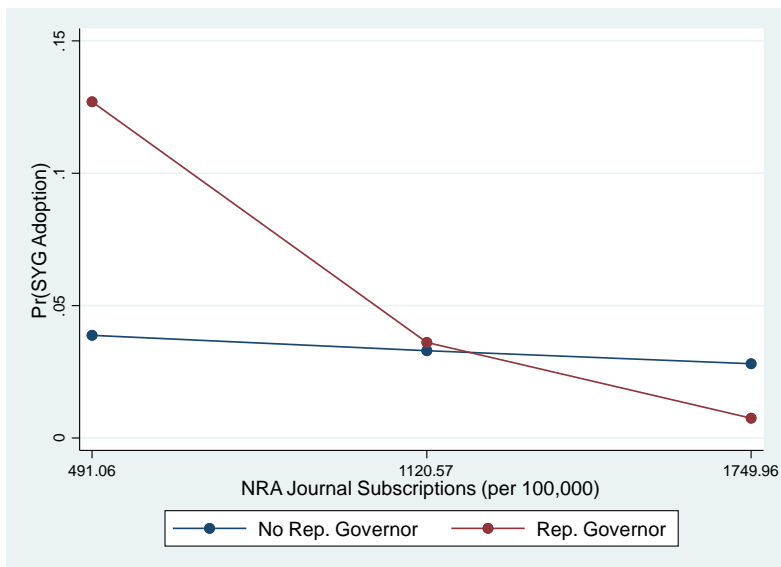


Figure 2.5: Interaction between NRA Journal Subscriptions and Republican Governorships on SYG Adoption

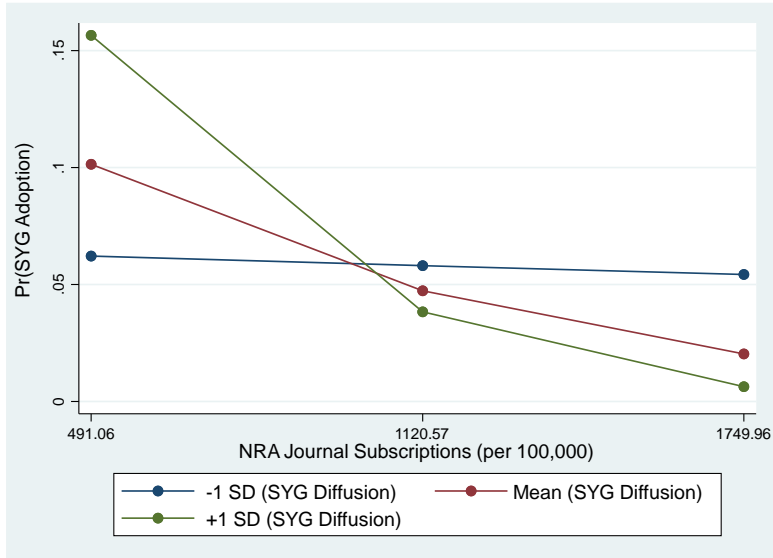


Figure 2.6: Interaction between NRA Journal Subscriptions and SYG Policy Diffusion on SYG Adoption

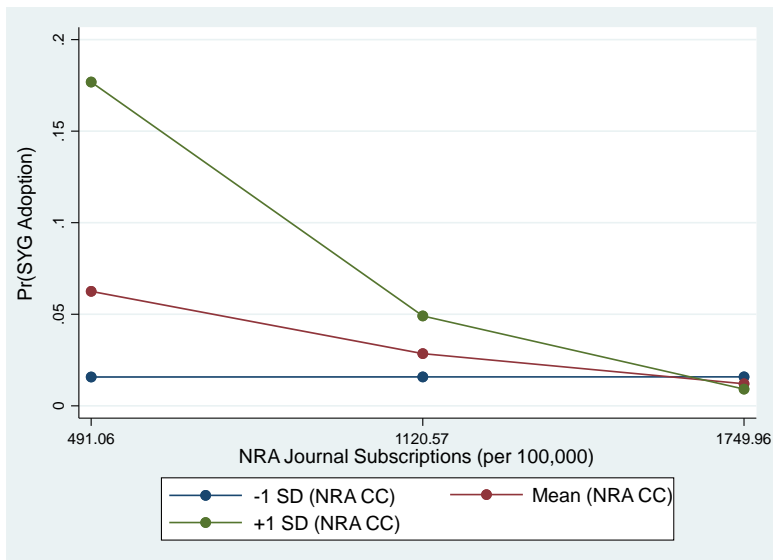


Figure 2.7: Interaction between NRA Campaign Contributions and NRA Journal Subscriptions on SYG Adoption

As for SYG, there is evidence of an intersection between NRA resources and political opportunities on the odds of policy adoption. Similar to the CCW findings, NRA campaign contributions do not interact with any of the identified political opportunities to impact SYG policy adoption ($p > .05$). However, NRA journal subscriptions interact with all identified political opportunities in seemingly unexpected ways. Theoretically, results were hypothesized that states with more journal subscriptions and a more Republican legislators or a Republican governor would increase the odds of SYG adoption (H3a, H3b); however, results indicate negative associations for all significant interactions. Across all analyses (see Figures 3.4, 3.5, 3.6, and 3.7), the odds that a state adopts an SYG policy *declines* in states with more NRA journal subscriptions. Put differently, the odds that a state adopts an SYG policy *increase* when states have fewer NRA journal subscriptions and more Republican legislators (Model 5; Figure 2.4), a Republican Governor (Model 6; Figure 2.5), a higher number of neighboring states that have adopted an SYG law (Model 7; Figure 2.6), and higher NRA campaign contributions (Model 8; Figure 2.7). Although there seems to be a constant downward slope as NRA journal subscriptions increase – as found in the direct-effect models (see Table 2.3) – when NRA journal subscriptions are low (-1 SD) but political opportunities are high (+1 SD percent Republican legislators) or present (Republican Governor), SYG laws are more likely to be adopted. These results provide evidence that subscribers to NRA magazines – a proxy for NRA membership (Steidley 2018) – may negatively impact SYG laws, but sympathetic political elites may be able to push forward SYG laws even when there are fewer grassroots resources. Because the results are not in line with theoretical

expectations, these findings require more contextual information that is not ascertainable with the current data.

Having discussed traditional approaches to social movement success (e.g., direct-effect, indirect-effect), I now turn to discuss the mediation models (Table 2.4).²⁷

However, based on the results presented above, it makes sense to focus only on key independent variables shown to affect policy passage. The percent Republican legislators is the most consistent variable across all the political opportunities, meaning it may be the most influential political opportunity for the gun rights movement to achieve policy-related successes. Moreover, these findings dovetail theoretical arguments and empirical evidence grounded in the role of political partisanship in the adoption of particular policies in line with conservative values (Gahman 2015; Jiobu and Curry 2001; Mencken and Froese 2017), especially those related to gun rights and firearm access (Malone and Steidley 2019). Thus, I report results using the percent Republican legislators as the mediator; analyses including Republican Governors as a potential mediator are in Appendix Table A.12.

²⁷ When it comes to mediation, traditional approaches (Preacher and Hayes 2004) assume there must be a significant ($p < .05$) association between the focal independent variable and the outcome before testing for potential mediation. In my case, this means there needs to be a significant association between NRA campaign contributions and the adoption of a certain firearm policy. As discussed in the above results, this is not the case for any of the 4 focal policies (excluding Child Access Prevention). However, recent methodological insights contend the relationship between the IV (X ; NRA campaign contributions) and DV (Y ; policy adoption) does not necessarily have to be present in order to establish whether mediation is occurring (MacKinnon, Krull, and Lockwood 2000; MacKinnon et al. 2002; MacKinnon 2008). Instead, there needs to be an association between the IV and the mediating variable (M), as well as an association between M and the DV. Put differently, earlier approaches to mediation required the direct effect ($X \rightarrow Y$) to be statistically significant before attempting to assess whether mediation was present (Baron and Kenny 1986). However, others have contended so long as there is a relationship between the independent variable and the mediating variable ($X \rightarrow M$) and the mediating variable and the outcome ($M \rightarrow Y$), then mediation can be calculated (Mathieu and Taylor 2006; Hayes 2009). Therefore, only one of my models found a moderate ($p < .10$) association with NRA campaign contributions and policy adoption (and none in the expected direction), I follow advice from Hayes (2009) and Mackinnon (2008) to explore how mediation may still be present without the presence of a significant direct relationship.

Table 2.4: Mediation Analysis of NRA Campaign Contributions and Republican Legislators on Gun Rights Policy Adoption ¹

	% Republican Legislators		CCW Adoption		% Republican Legislators		SYG Adoption				
	b	Se	b	Se	b	Se	b	se			
NRA Campaign Contributions	1.162	0.162	***	0.661	0.397	1.673	0.152	***	0.21	0.313	
% Republican Legislators				0.014	0.36				0.071	0.028	**
Direct Effect				0.661	0.3971				0.21	0.313	
Indirect Effect				0.017	0.042				0.119	0.047	*

Note: All models control for all other political opportunities and controls outlined in Table 2.1.

*p<.05, **p<.01, ***p<.001, two-tailed test

¹ All models include the identified controls not listed in the table.

Across specific gun rights policy-adoption patterns (CCW, SYG), states whose politicians received more NRA campaign contributions see an increase ($b=1.162$, $se=0.162$, $p<.001$; $b=1.673$, $se=0.152$, $p<.001$) in the percentage of Republican legislators. However, the consequences of this legislative compositional change are not consistent across these gun rights policies. For CCW policy adoption, there is no evidence to support the hypothesis that NRA campaign contributions or the percent of Republican legislators are directly associated with policy adoption – mirroring results found in the direct-effect models (Table 2.2). Moreover, there is no evidence ($p>.05$) to support that NRA campaign contributions work through the percentage of Republican legislators to shape CCW policy adoption. Put differently, there is no evidence that state legislative make-up acts as a mediator between NRA campaign contributions and CCW policy adoption. Given these results, I find no confirmatory evidence for hypothesis (H3a).

Similarly, there is no statistically significant evidence ($p>.05$) to support the hypothesis that NRA campaign contributions directly shape the adoption of SYG laws. However, there is evidence that states with more Republican legislators are more likely to ($b=0.071$, $se=0.028$, $p<.01$) adopt SYG laws. Both of these direct effects reflect the SYG direct effect results (see Table 2.3). As for the indirect effect, states whose politicians received more NRA campaign contributions then elect more Republican legislators, which then increases the odds a state adopts an SYG policy ($b=0.119$, $se=0.047$, $p<.05$). Put differently, NRA campaign contributions are positively associated with the percentage of Republican legislators which, in turn, is positively associated with the

adoption of SYG laws. Contrary to the CCW results, these results provide evidence for hypothesis H3b.

Gun Control Policy Adoption: CAP and UBC

In this section, I report results related to how two types of SMO resources – professionalized and grassroots support – shape the adoption of two major gun control laws in the United States: Child Access Prevention (CAP) and University Background Checks (UBC). In this section, I examine how social movement resources and political contexts shape the adoption of CAP (H3a, H3b, H3c, H3d) and UBC (H4a, H4b, H4c, H4d) policies. Table 2.5 reports results for CAP policy adoption and Table 2.6 reports the results for UBC adoption.

Despite theoretical expectations (H1c, H1d), neither NRA campaign contributions nor NRA journal subscriptions are statistically associated the adoption of CAP or UBC policies. As for political opportunities, there is evidence to support that states with more Republican legislators are less likely to adopt a CAP policy (OR=0.899, $p < .05$) but no statistical evidence ($p > .05$) is present for UBC adoption. Conversely, there is no evidence ($p > .05$) to support the hypothesis that the political affiliation of the Governor impacts CAP adoption, but states with a Republican Governor are less likely (OR=0.193, $p < .01$) to adopt UBC laws.²⁸ Furthermore, there is no evidence to support diffusion dynamics impact the odds of CAP or UBC policy adoption ($p > .05$). Given these results, there is

²⁸ The size of the coefficient is a product of the few UBC laws that were adopted and only 2 (of the 9) being in states that had a Republican governor. These results should be treated as preliminary, at best, but until there is more variation in the adoption of UBC laws there is no way to empirically assess the true effect of Republican Governorships on UBC adoption.

mixed evidence to support political opportunities are associated with CAP (H2c) and UBC adoption (H2d).

Table 2.5: Effect of Gun Rights Movement Resources and Political Opportunities on CAP Policy Adoption

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	OR		OR		OR		OR		OR		OR		OR		OR	
<i>Resource Mobilization</i>																
NRA Campaign Contributions	2.823		2.317		2.535		2.135		2.828		2.821		2.849		2.361	
NRA Journal Subscriptions	1.000		1.000		1.000		1.000		1.000		1.000		1.000		1.000	
<i>Political Opportunities</i>																
% Republican Legislators	0.899	*	0.898	**	0.895	*	0.890	**	0.901	*	0.900	*	0.899	*	0.899	*
Republican Governor Diffusion (CCW)	2.441		2.634		2.291		2.921		2.476		3.341		2.507		2.317	
1.009		1.009		1.009		0.999		1.010		1.009		1.005		1.012		
<i>Controls</i>																
Hunting Licenses ₁	1.007		0.960		1.027		0.989		1.023		0.986		1.049		0.897	
% Urban	1.122	**	1.144	*	1.120	**	1.160	*	1.122	**	1.124	*	1.123	**	1.136	**
% Poverty	0.517	***	0.505	***	0.507	***	0.483	***	0.521	***	0.531	***	0.522	***	0.521	***
% Black	0.917		0.902		0.913		0.894		0.917		0.924		0.915		0.927	
% Foreign-Born	0.998		0.967		1.007		0.980		0.996		1.009		0.980		0.953	
% Female	0.093		0.097		0.127		0.081		0.086		0.069		0.065		0.090	
% Evangelical	1.063		1.056		1.061		1.064		1.061		1.070		1.058		1.055	
% High School Graduates	0.756	**	0.710	*	0.758	**	0.675	**	0.758	**	0.775	*	0.749	**	0.733	***
Median Age	0.654	***	0.654	***	0.646	***	0.635	***	0.649	***	0.653	***	0.653	***	0.663	***
Violent Crime Rate ₁	0.993	*	0.993	**	0.993	**	0.992	*	0.993	*	0.993	*	0.993	*	0.993	**
Incarceration Rate ₁	1.001		1.001		1.002		1.001		1.001		1.001		1.001		1.001	
Citizen Ideology	0.981		0.981		0.981		0.979		0.983		0.984		0.984		0.989	
South	3.100		3.068		3.624		4.067		3.143		2.871		3.183		2.626	
Year	0.841	***	0.837	***	0.847	***	0.817	***	0.841	***	0.828	**	0.844	***	0.846	***
<i>Interactions</i>																
NRA Campaign Contributions X % Republican Legislators			0.977													

NRA Campaign Contributions X Republican Governor			1.293					
NRA Campaign Contributions X Diffusion (CCW)				1.025				
NRA Journal Subscriptions X % Republican Legislators					1.000			
NRA Journal Subscriptions X Republican Governor						1.001		
NRA Journal Subscriptions X Diffusion (CCW)							1.000	
NRA Campaign Contributions X NRA Journal Subscriptions								0.999 *
N	688	688	688	688	688	688	688	688
Pseudo R ₂	0.435	0.438	0.436	0.448	0.435	0.437	0.436	0.44
AIC	142.3	143.7	144	141.8	144.2	144	144.1	143.3

Note: CAP=Child Access Prevention

*p<.05, **p<.01, ***p<.001, two-tailed test

₁ Variable is measured per 100,000 residents.

Table 2.6: Effect of Gun Rights Movement Resources and Political Opportunities on UBC Policy Adoption

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	OR	OR	OR	OR	OR	OR	OR	OR
<i>Resource</i>								
<i>Mobilization</i>								
NRA Campaign Contributions	4.457	2.751	2.519 **	1.666	5.879	4.953	5.230	3.924
NRA Journal Subscriptions	1.002	1.001	1.003 ***	1.001	1.001	1.004	1.000	1.001
<i>Political Opportunities</i>								
% Republican Legislators	0.901	0.921	0.882 *	0.895	0.869 *	0.931	0.899	0.907
Republican Governor	0.193 **	0.311 *	0.000 **	0.183 **	0.193 **	0.045	0.290	0.254 *
Diffusion (CCW)	1.131	1.126	1.128	1.122	1.158	1.130	1.126	1.129
<i>Controls</i>								
Hunting Licenses ₁	54.113 **	74.173 **	129.234 **	107.833 **	70.807 **	105.765	40.182 **	76.330 **
% Urban	1.363	1.454 *	1.543 *	1.505 *	1.492 *	1.641	1.321	1.499
% Poverty	0.256 *	0.212 **	0.217 ***	0.169 **	0.216 **	0.207	0.232 **	0.205 **
% Black	0.739	0.671	0.764	0.679	0.755	0.778	0.739	0.731 *
% Foreign-Born	0.882	0.812	0.925	0.796	0.765	0.756	0.974	0.836
% Female	12.596	33.037	105.659 *	40.503	2.700	14.020	20.016	106.448 *
% Evangelical	0.707	0.710	0.588 **	0.768	0.719	0.563	0.667	0.680
% High School Graduates	1.104	0.950	1.314	0.975	1.050	1.060	1.256	1.266
Median Age	1.043	1.125	1.233	1.033	1.119	1.569	1.256	1.268
Violent Crime Rate ₁	1.006	1.006	1.006	1.007	1.007	1.007	1.005	1.005
Incarceration Rate ₁	1.012	1.011	1.013	1.013	1.010	1.014	1.013	1.016
Citizen Ideology	0.909	0.934	0.865 *	0.911	0.946	0.903	0.919	0.922
South	37.824 *	146.242 **	93.466 *	35.647 *	87.394 **	103.757	24.494 *	62.605 **
Year	1.171	1.222	1.222	1.208	1.191	1.318	1.253	1.298

Interactions

NRA Campaign Contributions X % Republican Legislators		0.927						
NRA Campaign Contributions X Republican Governor			648.327	**				
NRA Campaign Contributions X Diffusion (CCW)					1.064			
NRA Journal Subscriptions X % Republican Legislators						1.000	*	
NRA Journal Subscriptions X Republican Governor							0.994	
NRA Journal Subscriptions X Diffusion (CCW)								1.000
NRA Campaign Contributions X NRA Journal Subscriptions								0.998
N	1075	1075	1075	1075	1075	1075	1075	1075
Pseudo R ²	0.427	0.449	0.501	0.447	0.457	0.457	0.443	0.449
AIC	92.07	92.01	89.07	92.13	91.24	91.25	92.56	92.02

Note: UBC=Universal Background Checks

*p<.05, **p<.01, ***p<.001, two-tailed test

¹ Variable is measured per 100,000 residents.

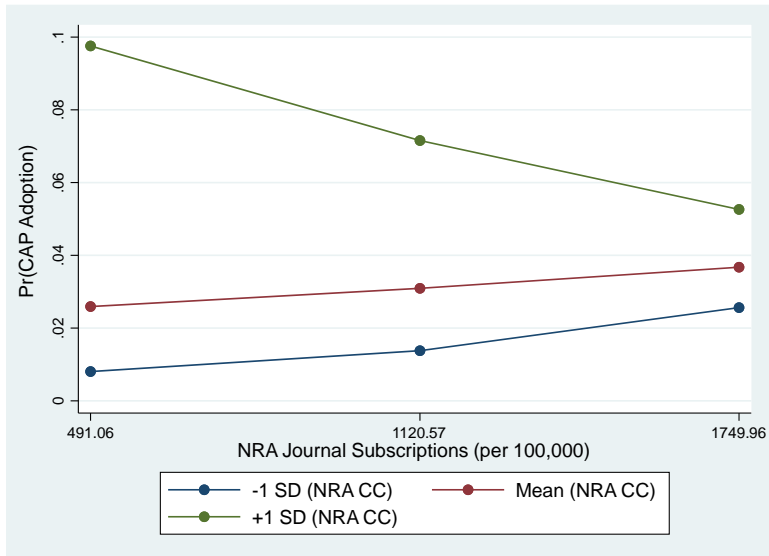


Figure 2.8: Interaction between NRA Campaign Contributions and NRA Journal Subscriptions on CAP Adoption

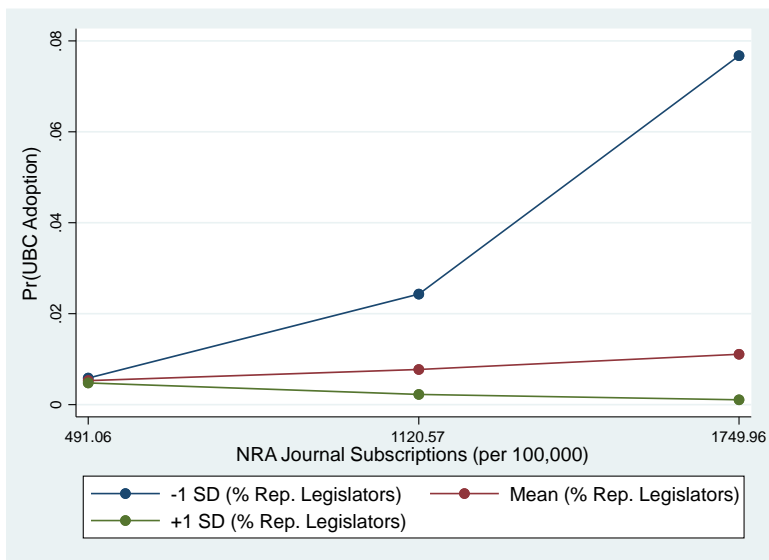


Figure 2.9: Interaction between NRA Journal Subscriptions and Percent Republican Legislators on UBC Adoption

Having discussed the direct-effects for the gun control models, I now discuss the extent to which SMO resources and political opportunities interact to impact the adoption of gun control policies (i.e., joint-effect). For CAP laws, there is no evidence any of the resources – professionalized and grassroots – interact with any of the identified political opportunities (H3c). However, there is evidence to support the hypothesis that NRA campaign contributions and NRA journal subscriptions jointly effect the adoption of CAP laws. As depicted in Figure 2.8, states with higher amounts of NRA campaign contributions and fewer NRA journal subscriptions are more likely to adopt a CAP policy; however, states with higher NRA membership and higher NRA campaign contributions are less likely to adopt a CAP policy. Put differently, the intersection of professionalized and grassroots resources seem to converge to suppress the adoption of state-level CAP adoption.

As for UBC adoption, there is only one significant interaction associated with UBC adoption (H3d): NRA Journal Subscriptions X Percent Republican Legislators (Figure 2.9). Regardless of legislative make-up, states with fewer NRA journal subscribers are associated with a decrease in the odds of CAP adoption. However, in states with more NRA journal subscriptions and fewer Republican legislators, there is an associated increase in the odds a state will adopt a UBC law. Although counterintuitive given theoretical expectations (H2d), this may be indicative of ideological differences between NRA subscribers and members and the agenda pushed forward by sympathetic political elites (Barry et al. 2013).

Table 2.7: Mediation Analysis of NRA Campaign Contributions and Republican Legislators on Gun Control Policy Adoption ¹

	% Republican Legislators			CAP Adoption			% Republican Legislators			UBC Adoption	
	b	se		b	se		b	se	b	se	
NRA Campaign Contributions	1.049	0.279	***	1.044	0.461	*	1.644	0.215	1.289	0.801	
% Republican Legislators				-0.011	0.047	*			-0.069	0.056	
Direct Effect				1.044	0.461	*			1.289	0.801	
Indirect Effect				-0.112	0.057	*			-0.113	0.94	

Note: All models control for all other political opportunities and controls outlined in Table 2.1.

*p<.05, **p<.01, ***p<.001, two-tailed test

¹ All models include the identified controls not listed in the table.

Similar to the gun rights results, there is consistent evidence to support the hypothesis that states whose politicians have received more NRA campaign contributions have a larger ($b=1.049$, $se=0.279$, $p<.001$; $b=1.644$, $se=0.215$, $p<.001$) percentage of Republican legislators in that state. As for CAP adoption, there is a positive association between NRA campaign contributions and CAP policy adoption ($b=1.044$, $se=0.461$, $p<.05$). In line with the direct-effect results (Table 2.5), states with more Republican legislators are less likely to adopt a CAP policy ($b=-0.011$, $se=0.047$, $p<.05$). Beyond the direct effects, there is significant evidence ($b=-0.112$, $se=0.057$, $p<.05$) to support the hypothesis that NRA campaign contributions work through the election of Republican legislators to reduce the odds a state will adopt a CAP policy (H4c). There is no statistical evidence ($p>.05$) to support the hypothesis that NRA campaign contributions have an indirect effect on the adoption of UBC policies (H4d).

Table 2.8: Summary of Results

	Gun Rights		Gun Control	
	CCW	SYG	CAP	UBC
<i>Resource Mobilization</i>				
NRA Campaign Contributions				
NRA Journal Subscriptions	+	-		
<i>Political Opportunities</i>				
% Republican Legislators		+	-	
Republican Governor				-
Diffusion		-		
<i>Controls</i>				
Hunting Licenses ²				+
% Urban			+	
% Poverty			-	-
% Black				
% Foreign-Born	-			
% Female				
% Evangelical	-			
% High School Graduates			-	
Median Age		-	-	
Violent Crime Rate ²			-	
Incarceration Rate ²				
Citizen Ideology	-			
South		+		+
Year		+	-	
<i>Interaction Terms</i> ³				
NRA Campaign Contributions X % Republican Legislators				
NRA Campaign Contributions X Republican Governor				+
NRA Campaign Contributions X Diffusion				
NRA Journal Subscriptions X % Republican Legislators		-		-
NRA Journal Subscriptions X Republican Governor		-		
NRA Journal Subscriptions X Diffusion		-		
NRA Campaign Contributions X NRA Journal Subscriptions		-	-	
<i>Mediation Analyses</i> ⁴				
Indirect Effect		+	-	

Note: CCW=Concealed Carry Weapons, SYG=Stand Your Ground, CAP=Child Access Prevention, UBC=Universal Background Checks

+ = Positive Association (p<.05), - = Negative Association (p<.05)

¹ Diffusion refers to the diffusion of the policy being analyzed.

² Variable is measured per 100,000 residents.

³ Results in the interaction terms are based on the significant value (p<.05) of the model the specific interaction term was tested (i.e., each interaction term is independent of others).

⁴ Mediation analyses use an alternative standard error calculation – Monte Carlo – and are conducted in MPlus 7.0.

Summary of Results

Table 2.8 provides an overview of the findings across the focal gun rights (CCW, SYG) and gun control policies (CAP, UBC). First, there is no evidence to support NRA campaign contributions have any effect on the adoption of gun rights (H1a, H1b) nor gun control (H1c, H1d) policies. These null findings may be due to the mechanisms through which campaign contributions operate (Alexander 2005) and how professionalized SMOs may rely more heavily on intra-institutional processes (Staggenborg 1988, 1989). However, there is evidence to support NRA journal subscriptions – a measure of grassroots resources – are positively associated with CCW adoption, but negatively associated with SYG adoption. Although the CCW finding is in line with previous literature (Steidley 2018), the SYG finding is opposite of the proposed hypothesis. One potential explanation for this finding may be there are differences between stances by the NRA as an organization and the ideological views of NRA members (Barry et al. 2013).

As for political opportunities, the party composition of state legislatures is associated with one of the gun rights and one of the gun control laws. Specifically, there is a positive association between the percentage of Republican legislators with the adoption of SYG laws (H2b) and a negative association with the adoption of CAP policies (H2c). Although there is no statistical evidence that party composition of the legislature is related to the other two policy outcomes (CCW (H2a) or UBC (H2d) adoption), the results presented here do confirm previous insights about how political contexts directly influence social movement successes (Giugni 2007; McAdam 1980; Tarrow 1995). Beyond UBC laws, Republican governorships are not associated with the adoption of gun policies – a finding in line with insights on the limited role of

gubernatorial power related to social movement successes (Schuerman et al. 2019). Similarly, policy diffusion seems to matter less for most firearm-related legislation relative to findings on other social policies (Renzulli and Roscigno 2005; Steidley 2018).

While the results demonstrate the direct effects of SMO resources and political opportunities, I also tested for interaction effects between these dynamics. There is no evidence NRA resources – professionalized or grassroots – have any effect on the adoption of CCW policies (H3a). In a similar vein, NRA campaign contributions do not interact with any political opportunities to shape policy adoption (H3b). However, NRA journal subscriptions do interact with political opportunities to negatively shape the adoption of SYG policies. Particularly, Republican legislators, Republican governors, SYG policy diffusion, and NRA campaign contributions all significantly intersect with grassroots resources to shape the odds of SYG adoption. Similarly, the intersection of NRA resources with political opportunities does not appear to impact gun control (CAP, UBC) policy adoption (H3c, H4c). Interestingly, results indicate the intersection of NRA professionalized (campaign contributions) and grassroots resources (NRA journal subscriptions) are associated with a lower likelihood a CAP policy will be adopted in a given year. Conversely, there is a positive association for UBC adoption when there are more NRA journal subscriptions and a higher percent of Republican legislators in a given state (H3d). Overall, there is little evidence to support the hypothesis that NRA campaign contributions intersect with political contexts to shape the adoption of movement-related legislation.

Finally, the indirect effects, or mediation analyses, provide a compelling narrative in line with SMO professionalization and previous research on campaign contributions

(Langbein and Lotwis 1990; Snyder Jr. 1990; Staggenborg 1998). Although results indicate there is no indirect effect of campaign contributions for CCW (H4a) and UBC (H4d) laws, results suggest a positive mediating effect of campaign contributions on SYG adoption (H4b) and a negative mediating effect for CAP adoption (H4c). Put differently, states with more NRA campaign contributions are associated with an increase in the percentage of Republican legislators which, in turn, leads to an increase in the odds that movement-related legislation will be adopted and a decrease in the odds countermovement-related legislation will be adopted. Since professionalized SMOs often transition to employing more intra-institutional tactics (Heideman 2017), these results highlight how these contributions shape political contexts/opportunities – in this case, the percent Republican legislators – which provides a “return on investment” in the form of legislative successes. Overall, these findings provide insight into how, and under what conditions, states adopt firearm-related legislation.

J. Chapter 1 Discussion

Major Takeaways

This chapter focuses on assessing how SMO dynamics and political opportunities, respectively and collectively, inform the adoption, or lack thereof, of (counter-)movement-related legislation. Specifically, it uses the gun rights movement as a case study to explore three specific dynamics. First, I explore how professionalized resources (i.e., campaign contributions), as well as grassroots support (i.e., subscriptions), predict the adoption of gun rights and gun control policies in the United States. Second, I demonstrate how gun rights movement-related political opportunities intersect with these resources to catalyze the adoption of specific firearm-related policies, specifically

Concealed Carry Weapons (CCW), Stand Your Ground (SYG), Child Access Prevention (CAP), and Universal Background Checks (UBC) policies. Finally, I examine how the effect of professionalized SMO resources (i.e., campaign contributions) on social movement successes – within the context of the gun rights movement – are mediated by the election of Republican political officials.

Broadly, these results fit within broader literatures on social movements and policy passage. Based on the results presented above, I make four major contributions:

- (1) grassroots resources may be better equipped to directly impact social movement successes compared to professionalized resources,
- (2) campaign contributions can represent a professionalized SMO resource,
- (3) professionalized SMO resources, specifically campaign contributions, effectively shape potential political opportunities, and
- (4) how and why firearm regulations are passed vary dramatically across socio-political and demographic factors.

Below, I contextualize each of these contributions within social movement and political science literatures, and provide directions for future research.

First, resource mobilization scholars have long sought to explore the impact of social movement organizational (SMO) resources on movement successes (McCarthy and Zald 1977; Rupp and Taylor 1993), including the adoption of movement-specific policies (Steidley 2018; Tarrow 2006). Extending this research, I explore how organizations that have undergone SMO professionalization (Staggenborg 1988) and garnered access to large-scale economic resources (Heideman 2017) employ these resources to inform the adoption of movement-specific policies. As findings presented

here indicate, professionalized SMO resources may not directly impact movement-related successes at the state-level. Although earlier research on grassroots resources within the gun rights movement found a direct association with policy adoption (Steidley 2018), professionalized resources are unique and professionalized SMOs and their resource availability often shift towards more intra-institutional tactics (Heideman 2017; Staggenborg 1988).

I show that grassroots resources – NRA journal subscriptions – are associated with some movement-specific policy adoption. In line with Steidley (2018), I find NRA membership is associated with the adoption of CCW policies. However, NRA subscriptions are negatively associated with SYG policy adoption – a gun rights policy. One potential explanation may be due to SYG laws not being a key piece of legislation to movement supporters, but an important success for the larger organization – the NRA. As Barry et al. (2013) find regarding gun control laws, the mission and focus of the NRA does not always line up with the interest of firearm owners generally. SYG might be another case. Given the current data, I cannot draw inferential conclusions as this requires individual-level data on public opinion; thus this is an avenue for future research. Overall, based on the direct findings, NRA journal subscriptions seem to affect the adoption of gun rights policies, albeit in different ways, but not gun control – raising questions about the effectiveness of grassroots resources in counter-movement efforts. Collectively, these findings indicate grassroots SMO resources within the gun rights movement are minimally effective in shaping gun policy outcomes beyond CCW adoption (Steidley 2018).

Secondly, disciplinary debates continue around what constitutes an SMO and an interest group (Andrews and Edwards 2004; Burstein 1998). This dissertation provides insight into how campaign contributions – conceptualized as a professionalized SMO resource – are able to shape social movement successes. Traditional resource mobilization and political opportunity/political mediation research often focuses on the direct-effect and joint-effect approaches to understand how SMO resources impact social movement successes (Giugni 2007, 2008; McAdam 1999). However, research has extended these conversations to consider the different pathways through which various movements achieve their desired outcomes (Amenta et al. 2010; Giugni 2007). While research on the gun rights movement found both direct and joint-effects (i.e., moderation) explain how NRA resources affect the adoption of state-level CCW policies (Steidley 2018), it has focused on grassroots resources, such as NRA journal subscriptions. As Staggenborg (1988) and others (see Heideman (2017) for an example) have found, SMO professionalization shifts the focus of movement organizations towards more intra-institutional tactics. In regards to professionalized SMO resources, campaign contributions have a distinct impact on movement-related successes. Although there is no evidence to support campaign contributions directly affect policy adoption nor do they intersect with political contexts (i.e., moderation), this specific resource seems to work differently.

For political scientists, the effects of campaign contributions are often conceptualized as a “return on investment” (Snyder Jr. 1990). In line with this approach, I find campaign contributions do affect social movement successes, but in indirect ways (i.e., mediation). While there may be no direct and few joint/moderating effects

associated with campaign contributions, this makes sense given the intra-institutional tactical and strategic shifts professionalized SMOs employ (Staggenborg 1988). As this chapter highlights, NRA campaign contributions are associated with more state-level Republican legislators holding public office. Within the gun rights movement, Republican legislators are considered a political opportunity (Melzer 2009; Cook and Goss 2014; Steidley 2018). In line with calls for researchers to better explore how social movements shape the political environment, such as electoral outcomes (McAdam, Tarrow, and Tilly 2003), results here indicate campaign contributions are an important and informative social movement resource. Rather than directly influencing policy passage through calling representatives (Melzer 2009) or petitioning for public votes on movement-related policies (Caren, Ghosal, and Ribas 2011), professionalized resources can shape the political landscape to be favorable to movement goals. Put differently, professionalized resources, such as campaign contributions, may be able to create political opportunities through intra-institutional mechanisms that produce a return in the form of movement successes (e.g., policy adoption). Moving forward, research should more closely consider various types of professionalized resources across movement types. By expanding the universe of social movement resources, research will be better equipped to understand the complex relationship between professionalization and movement-related outcomes.

Although there was no evidence NRA campaign contributions intersected (i.e., moderation) with political opportunities, there is evidence NRA journal subscriptions interact with these political contexts. Specifically, NRA journal subscriptions and the percent Republican legislators interacted to shape SYG policy adoption – albeit in

unexpected ways. Threat-based responses by conservative movements has become a flourishing area of social movement research (Boutcher, Jenkins, and Van Dyke 2017; McVeigh 2001; Parkin, Frelich, and Chermak 2015). While theoretically one might expect states with more, in this case, NRA journal subscriptions *and* more Republican-leaning legislators to increase the odds of adoption (Amenta et al. 2010; Steidley 2018), this does not seem to be the case. Instead, states with fewer NRA journal subscriptions and more Republican legislators are more likely to adopt these laws. Once potential explanation for this may be rooted in minority threat/power devaluation (Boutcher, Jenkins, and Van Dyke 2017; Tope, Pickett, and Chiricos 2015). Put differently, when the political context leans in favor of gun rights but gun rights supporters (i.e., NRA journal subscriptions) represent a minority of state residents, gun rights advocates may be more vocal and engaged. These types of dynamics have been observed in recent protests within U.S. states as firearm-related policies remain contentiously debated. Future research should further examine how minoritization of movement organizations/members are affected by political opportunities to understand the value signaling groups and members of organizations enact to make their presence known.

Thirdly, I demonstrate how campaign contributions shape the political landscape in a manner that is supportive of movement goals, which in turn is associated with legislative successes. Despite critiques of how scholars operationalize political opportunities (Meyer and Minkoff 2004), political elites sympathetic to movement goals – in this case, Republican legislators and governors – have been a long-standing operationalization of political opportunity structures (Amenta et al. 2010). Since political allies are important assets when considering polity-based success (e.g., policy adoption),

professionalized SMOs may be well situated to shape political opportunities in their favor. Research in political science has identified that when organizations invest economic resources, such as campaign contributions, into specific candidates and their political campaigns, interest organizations reap these rewards through the election of ideologically sympathetic elites – in this case Republicans (Austen-Smith 1987; Cook and Goss 2014; Roscoe and Jenkins 2005) – and votes on policies in line with the organization’s ideological goals (Langbein and Lotwis 1990; Price, Dake, and Thompson 2002).

Specifically, the more money the NRA spends on a candidate’s election campaign, the more likely that candidate is to support gun rights legislation and/or vote against gun control legislation (Langbein and Lotwis 1990). However, most of the research has focused on federal-level elections and voting patterns – a limitation since states have represented the legislative battleground for gun laws over the past 20 years (Vizzard 2014). Therefore, it is important to understand how (or if) these dynamics are similar in state-level contexts. My research suggests that NRA campaign contributions do, in fact, shape the political landscape in favor of gun rights opportunities. When state-level campaign contributions are higher, there is an associated increase in the number of Republicans in a state’s legislature. By effectively electing pro-*2nd Amendment* candidates, who are primarily Republicans (Cook and Goss 2014), the NRA is able to construct a political landscape sympathetic to the passage of gun rights legislation and stifling of gun control legislation. Despite there being minimal direct influence of SMO resources or political opportunities on firearm-related policy adoption, the results presented here indicate campaign contributions are indirectly influential. Overall,

campaign contributions seem to work through the election of political officials that, in turn, shapes the adoption of (counter-)movement-related legislation. While there is some research on these mediating models (Giugni 2007), the majority of contemporary research focuses on the mediating effects of public opinion or joint-effect approaches. Research should further consider how movement resources, especially professionalized economic resources, may actively shape the political landscape, and thus political opportunities, to achieve movement successes, or investment returns.

Finally, extant research has found firearm policies, along with other conservative policies, are often driven by socio-demographic and criminological factors associated with socially-driven threat (Brown 2010; Jacobs and Carmichael 2002; Malone and Steidley 2019). Currently, socio-demographic dynamics and their associations with the adoption of specific firearm-related legislation is limited. Malone and Steidley (2019) provide insight into how these dynamics impact types of CCW law adoption (e.g., no CCW, may-issue CCW, shall-issue CCW, and constitutional carry) – but not to a specific policy’s odds of adoption. As analyses presented here indicate, socio-demographic dynamics associated with firearm-policy adoption are inconsistent and each respective policy appears to be driven by very specific demographic factors.

Interestingly, I find economic and race-related dynamics are important in the adoption of particular firearm-related policies. Contemporary research that examines the social, political, and economic dynamics associated with gun-related policies is limited (but see Malone and Steidley (2019)). However, various theoretical dynamics can provide insight into the findings presented here. Although I conceptualize Republican representation as a political opportunity, political partisanship theories postulate, in this

case, that Republican governors and legislators in a state would be positively associated with gun rights legislations and negatively associated with gun control legislation (Andrews 2001; Melzer 2009; Meyer and Minkoff 2004). This, in fact, is the case. As for urbanization, states with more residents in urban areas are associated with an increased likelihood of adopting a CAP policy, but urbanicity has no effect on gun rights adoption. These findings are explained through various perspectives: First, urban residents tend to lean politically liberal and, thus, are more supportive of gun control efforts (Gupta and Ferguson 1992). Another potential explanation for this urbanicity relationship could be urban areas are densely populated and criminal activity may be more acute (Sampson 1985). By imposing gun control regulations, state policymakers may believe, as do many gun control activists and organizations (Kleck and Patterson 1993; Ludwig and Cook 2004), by introducing these social control mechanisms there will be an overall reduction in crime.²⁹ Rather than a single approach explaining this association between urbanicity and gun control legislation, urbanicity and political partisanship may be co-occurring and thus collectively shaping the state-level political agenda.

Moreover, economic threat approaches hypothesize that states that have lower economic resources and more people living in poverty would be less likely to pass gun rights legislation as a way to diminish legal firearm access to marginalized groups (Malone and Steidley 2019). More specifically, these approaches contend economically privileged groups view unemployed and poor populations as less committed to societal

²⁹ However, scholars and gun rights activists have contended that the passage of laws that liberalize access to firearms, such as CCW laws, are associated with a reduction in crime (Lott 2001). The empirical evidence of this is mixed, at best, and there is currently no “best practice”. However, organizations have found gun control policies, especially CAP laws (RAND 2018), are associated with a decrease in gun violence. I explore this empirical question in the subsequent chapters.

norms (Spitzer 1975). One way to reinforce this commitment and fortify social values within unemployed and poor populations is through the adoption of policies that strictly enforce hegemonic social order, often through processes of criminalization (Chambliss and Seidman 1982; Beckett and Western 2001). However, these associations are complex and unique to each firearm-related policy. For example, I find economic dynamics do not shape the adoption of gun rights policies. While there are clearly racialized and gendered dynamics associated with firearm access and “protection” (Carlson 2015), poorer individuals may be unable to access a firearm due to economic insecurity. Thus, economically disenfranchised populations do not present the same “threat” to economically privileged classes as they are unable to access the tools associated with this policy. As for gun control, CAP laws impose strict storage requirements that require purchasing, or being able to access, firearm storage materials (e.g., gun safes); whereas UBC laws add an additional bureaucratic step to the firearm acquisition process. However, the economic burden of CAP laws is placed on individuals, whereas the burden is placed on the state for UBC laws. In line with this line of thought, conversations surrounding these policies have discussed the economic burden put on individuals, especially those that may have family heirlooms or that collect firearms for alternative reasons rather than protection and sport.³⁰

Additionally, racial threat theory hypothesizes states are more likely to impose social control policies (and less liberalizing policies) in areas with more racial minorities

³⁰ Currently, there has been no systematic research on this topic and, thus, there is a need for more research. However, the Lincoln City Council in Lincoln, NE recently convened a task force on adopting a CAP policy, albeit at the local-level, and the economic burden was one major concern. While only a single case-study, it provides insight into a potential explanation that requires further empirical consideration. The report can be found at: <https://lincoln.ne.gov/city/mayor/boards/CAESS/CAESS-summary.pdf>

due to stereotypical assumptions of race and criminality (Jacobs and Carmichael 2002; Malone and Steidley 2018).³¹ The majority of research has focused on how state-level Black populations are associated with more social control mechanisms (Johnson et al. 2011; King and Wheelock 2007); however, I find this to not be the case. Despite a negative association between a state's Black population and CCW adoption— an expected association for CCW policies (Malone and Steidley 2019) – there is no evidence of racial threat associated with SYG or any gun control legislation. The association with CCW laws is likely due to how these policies provide increased access for *all* residents, regardless of racial identity.³² Overall, racial dynamics may be more informative when policies extend access to firearm-related access (e.g., CCW), but CAP and UBC laws may be less influenced by racial dynamics. The research examining economic- and race-based dynamics and firearms, especially firearm policy, is limited and requires further research. Generally, political contexts seem to be predictive across gun rights and gun control policies; however, socio-demographic dynamics do not seem to adhere to similar patterns.

Limitations

As with all research, this project does not come without limitations. First, I am unable to directly assess causality. Although the independent variables are lagged by a single year ($t-1$), the independent variables are observed in the same year across all

³¹ This is evident in the history of the National Rifle Association's approach to gun control during the Black Panther Era. As the Black Panther Party practiced armed self-defense during the late 1960s and 1970s, the NRA began to distance themselves from gun rights arguments and began to promote gun control related legislation (Morgan 2018). Given the socio-historical context, the NRA was (and continues to be) a heavily White, conservative organization. By distancing themselves from gun rights during this time period, they were effectively able to distance themselves from supporting pro-Black organizations and reifying racial inequality in who was, and is, allowed to arm themselves.

³² However, research has indicated there is substantial racial discrimination in the application and receipt of Concealed Carry Licenses (Shapira, Jensen, and Lin 2018; Stroud 2012).

models. Especially for the mediation models, campaign contributions are measured the same year as the political opportunity measures (e.g., percent Republican legislators). The campaign contributions and state-level legislative make-up associations are robust based on sensitivity analyses (see Appendix Table A.1). Yet future research should explore how the previous reporting period (e.g., 2003-2004) predicts the percentage of Republican legislators in the next cycle (e.g., 2005-2006) and, in turn, how this predicts the following year's policy dynamics (e.g., 2007). Second, the campaign contributions measure focuses on money donated to campaigns for political officials running for federal office (e.g., U.S. Senate, U.S. House of Representatives) and in gubernatorial elections. Therefore, these measures traditionally tap into national-level interest rather than state-level interest in gun-related legislation and politics. Additionally, the only comprehensive data source on these measures (Center for Responsive Politics) only reports data back to 1990, limiting the analyses to a specific temporal onset. Future research should consider exploring in more detail how contributions to local officials (e.g., state-level legislators, lobbyists, city council representatives) may better assess the role campaign contributions and economic SMO resources play in shaping policy dynamics.

Third, the NRA Subscription data is only available from 1998 to 2016 and is extrapolated for 1990 to 1997 in all states. Moreover, it uses magazine subscriptions as the proxy measure for NRA membership (Steidley 2018). Although an NRA membership includes a subscription to one of the three magazines, there have been a number of concerns about the accuracy of these circulation rates and relationships between the NRA and their printing agency (Gilson 2019). While we have no way of successfully counting

NRA members at the state-level, it is important to note these limitations related to SMO resources. In a similar vein, only one measure is used to gauge professionalized and grassroots resources, respectively. Although NRA campaign contributions (i.e., professionalized SMO resource) and NRA journal subscriptions (i.e., grassroots resource) represent the best available data for these constructs, there is a critical need to consider alternative measures to test the robust effects of social movement resources on social movement successes.

Other limitations of the data include issues of the selected timeline (1990-2016) and policy adoption trends, as well as the low number of states that have passed some of the focal gun control policies. First, 12 states had passed CCW policies prior to the temporal onset of the analyses (1990) – reducing the sample size and effectively missing many of the early movers on gun rights policies. A similar temporal limitation is the clustering of policy passage in CAP and UBC policies, respectively. All CAP policies were passed prior to 2002, limiting the analyses to, effectively, a 1990-2002 timeline.³³ Second, only 23 (of 50) states had passed a CAP policy in the time period of interest and only 9 (of 50) states had passed a UBC policy within the time period. While the CAP policy analyses include a moderate sample size (n=688), the temporal limitations present an additional issue. Particularly, the peak of campaign contributions (1990-2000) and the peak adoption of CAP policies (1990-2000) co-occur and present issues in parsing out true relationships. For example, the positive association between campaign contributions and CAP adoption could be indicative of NRA response to rising CAP policies in the

³³ Sensitivity analyses (available in Appendix Table A.2) explore this possibility. Surprisingly, there is no change in the substantive results.

United States. This issue requires further analysis beyond the scope of the current study. As for UBC policies, states passed these policies in two chunks of time: earlier in the analyses (1991-1997) and late in the analyses (2013-2015). Given these are split in their adoption periods, the entire timeline is required (1990-2016) to assess change, but the major gap between these time periods (16 years) presents issues in assessing the true relationship. Finally, as has been found in earlier research on agenda-setting, future research should consider not only the adoption of policy as the focal outcome but the number of introduced and debated bills. Movement resources are often more effective in earlier stages of the policy-making process (Soule and Olzak 2004), thus this is an important, and minimally examined, area of firearm policy research.

Conclusion

Overall, this chapter highlights how professionalized SMOs employ intra-institutional tactics to achieve their desired outcomes. Campaign contributions operate uniquely compared to traditional social movement resources (McCarthy and Zald 1977; Staggenborg 1988). Professionalized SMOs turn towards intra-institutional pathways to garner desired outcomes, meaning their engagement is often outside the public eye (Everett 1992; Staggenborg 1988). Results presented here indicate this may be the case for the NRA, which is working through economic contributions to increase electoral successes (i.e., more Republican legislators) to shape gun policies at the state-level. Professionalized SMOs, as demonstrated here, may not be as influential in directly shaping visible forms of social movement successes (i.e., policy passage). Instead, their resources and their effects may be conceptualized as a “return on investment” (Snyder Jr. 1990). Therefore, these resources are better equipped to achieve intra-institutional

outcomes, such as the election of Republican candidates, which result in policy-related successes.

Many scholars and popular media outlets have cited the power of the “gun lobby” in the gun control debate (Cook and Goss 2014; Spitzer 2009). However, it is not solely about the campaign contributions themselves but about how these contributions assist in the election of sympathetic policies elites that, in turn, support particular advocacy organizations’ ideological interest(s). Specific to the gun rights movement, this raises questions about whether these policies are less influenced directly by NRA efforts but, instead, are shaped by ideologically sympathetic, or congruent, candidates who receive economic incentives from the NRA. With the recent reform of campaign finance laws in *Citizens United v. Federal Election Commission* (2010), these results provide insight into potential steps to reduce the power and influence of campaign contributions and large-scale interest organizations. One approach could be to revisit campaign finance policy that imposes limits on campaign contributions to politicians. By limiting campaign contributions, politicians receiving these economic investments may feel less obligated to act in accordance to interest organizations’ interests. As with all social policy, the development and implementation of firearm-related legislation should be shaped by empirical research and scientific evidence related to gun violence rather than economic investments and political partisanship. Beyond understanding dynamics associated with policy adoption, research needs to also better explore not only how and why these policies are passed, but the impact they have on gun violence. To further this line of inquiry, the following chapter examines the impact of these policies on a particular type of gun violence – homicides.

III. Empirical Chapter II: The Downstream Consequences of Firearm Policies for Homicides

A. Introduction

Since the early 1900s, social science research has examined factors associated with the ebb and flow of homicides in the United States. Social scientists have employed two major theoretical approaches – structural anomie theory and social disorganization theory – to examine how structural socio-criminological dynamics (e.g., county-level racial heterogeneity) affect homicide variation (Messner and Rosenfeld 1993; Shaw and McKay 1942). Importantly, these empirical insights contend that these factors are locale-specific (Bailey 1984; Wenger 2019a, 2019b) and require geographically nuanced (e.g., counties, neighborhoods) approaches (Messner 1983; Messner and Tardiff 1986).

To contextualize, criminologists and other social scientists have spent decades exploring the socio-criminological factors associated with homicides and other crimes. Often employing structural anomie (Merton 1938) or social disorganization approaches (Shaw and McKay 1942), scholars have identified community-level factors that affect social (dis)organization, sometimes referred to as social integration. These varying levels of (dis)organization lead to variation in crime rates, including homicides. For example, racial heterogeneity (Kubrin 2000; Petee and Kowalski 1993) and population turnover/geographic mobility (Boggess and Hipp 2010; Bursik 1999) are theorized, and have been empirically identified, to disrupt social connections within communities that decrease social integration and, in turn, increase crime. Although these structural correlates have been identified as consistent predictors of homicide at various units of analysis (AbiNader 2020; Hunnicutt 2007; Kposowa and Breault 1993), socio-

criminological research has systematically ignored the effect of gun policies – a potentially important factor given firearms are used in the majority of homicides (Cooper and Smith 2011).

On the other hand, gun policy scholarship has focused specifically on how firearm-related policies (e.g., Concealed Carry Weapons) explain variation in homicide trends.³⁴ Scholars contend that gun policies (i.e., gun rights, gun control) increase/decrease homicides through firearm access and usage (Gius 2014, 2016; Kposowa, Hamilton, and Wang 2016; Steidley 2019), albeit inconsistently (RAND 2018). Additionally, extant gun policy research predominantly examines how state-level policies affect state-level trends in homicide (RAND 2018). However, these approaches often ignore the socio-criminological factors associated with homicide and limit the ability for researchers to ascertain whether firearm policies matter above well-established correlates (Aneja, Donohue, and Zhang 2014; Ayres and Donohue 2003).

Although gun policy scholarship has provided extensive insight into how gun policies affect homicides, this body of research has several limitations. One downfall of gun policy assessment has been the extensive focus on Concealed Carry Weapons (CCW) laws (RAND 2018). Moreover, empirical evidence on gun policies remains mixed (RAND 2018). These mixed results are posited to be a product of gun policy research's inconsistent methodological approaches and focal level of analysis (e.g., states) (Aneja, Donohue, and Zhang 2014; Ayres and Donohue 2003; RAND 2018). To address these methodological shortcomings, some research has applied more geographically granular approaches – predominantly at the county-level (Ayres and Donohue 2003, 2009; Aneja,

³⁴ Throughout this chapter I use the terms “firearm-related policies” and “gun policies” interchangeably.

Zhang, and Donohue 2014; RAND 2018). While some research has employed more geographically granular approaches (e.g., county-level) and accounted for state-level variation using clustered standard errors (Aneja, Donohue, and Zhang 2014), this type of clustering often leads to imprecise variance estimates and increases the odds of Type I Error (Cheah 2009). Failing to adequately account for these substantive socio-criminological factors and the identified methodological shortcomings limits the ability for gun policy research to identify the effectiveness of firearm-related policies. To bridge socio-criminological and gun policy research together, I ask: *To what extent do certain state-level firearm policies explain variation in county-level homicides above and beyond well-established county-level correlates?*

To address this research question, I conduct a series of multi-level (Level 1=county; Level 2=state) models that examine how, or if, firearm-related policies matter above well-established socio-criminological correlates of homicide. Importantly, this approach overcomes limitations in previous county-level studies on gun policies (RAND 2018), including standard error calculations and Type I Error probability (Cheah 2009). In particular, this chapter examines four major firearm-related policies – Concealed Carry Weapons (CCW), Stand Your Ground (SYG), Child Access Prevention (CAP), and Universal Background Checks (UBC) – and employs data from a variety of county- and state-level sources, including, but not limited to, the *FBI Uniform Crime Report's Supplemental Homicide Report*, *American Community Survey*, *State Firearm Laws Database*, and *Alliance for Audited Media*. The focal dependent variables, stratified by firearm type(s) as the primary weapon(s), are county-level sums (2014-2016) of the total number of reported homicides, the total number of reported firearm-related homicides,

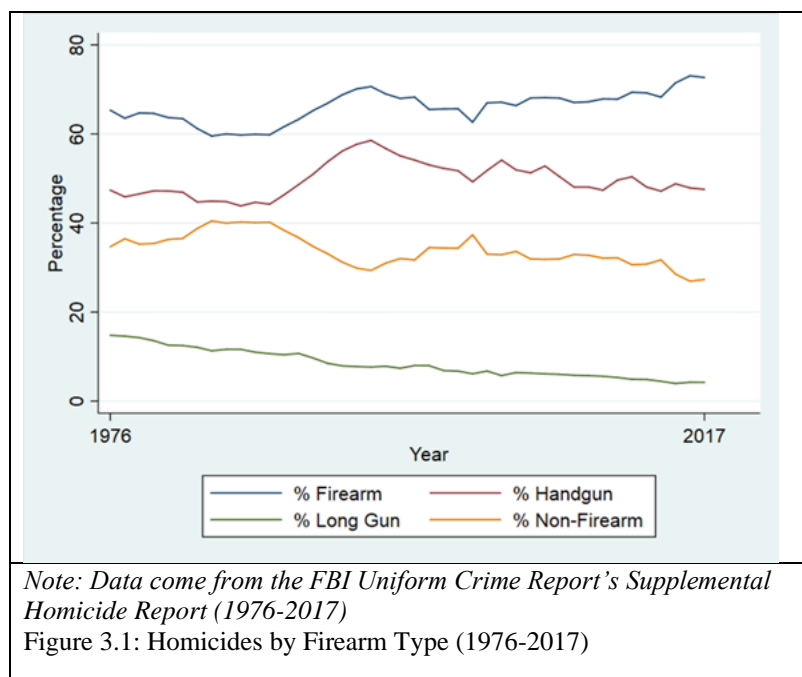
the total number of reported handgun-related homicides, and the total number of reported long gun-related homicides.³⁵ Analytically, a series of two-level logistic and negative-binomial regressions are used, nesting counties (N=2999) within states (N=50).³⁶ Results provide insight into the extent to which state-level firearm policies affect homicides while accounting for important, well-established county-level factors. The stratified analyses by firearm type provide insight into how socio-criminological dynamics shape firearm-specific homicide patterns (e.g., handgun, long gun) and whether gun policies explain homicide variation differently across the dependent variables. In general, these results indicate the robustness of socio-criminological theories given their consistent explanation of homicide patterns across firearm type. Finally, this chapter concludes by discussing future research and policy implications.

³⁵ All homicide counts are based on reported homicides to police stations or other agencies, a limitation returned to later in the chapter.

³⁶ The number of observations for the negative-binomial regressions vary for each dependent variable. For the full sample negative-binomial regressions, please see Appendix Table A.5.

B. Relevant Literature

Homicide: Definition and Trends



The FBI defines homicide as “the willful (nonnegligent) killing of one human being by another” (FBI 2019). Within the United States, homicide rates have varied heavily over time. In the 1970s and 1980s, the United States experienced an increase in homicides followed by a steep decline in the 1990s (Truman, Langton and Planty 2013). Although homicide rates remained stable into the 2010s (James 2018), 2014 marked a sharp increase in homicides (Rosenfeld 2019). Notwithstanding the ebb and flow of homicide trends, one fact has remained true: firearms continue to be the most prevalent weapon employed. As depicted in Figure 3.1, firearms have consistently made up more than 60% of all reported homicides since 1976. Moreover, certain types of firearms are more often employed compared to others. Over time (see Figure 3.1), handguns have made up approximately 50% of all homicides. Only 20% of homicides were associated with long gun (e.g., rifle, shotgun) usage, which has been decreasing over time.

To understand these fluctuations in homicide patterns, criminologists have identified factors associated with homicides and other forms of crime (DeFronzo 1996; Messner and Rosenfeld 1993; Shaw and McKay 1942). Additionally, gun policy scholars have explored, and debated, the extent to which firearm-related policies affect homicide rates in the United States (RAND 2018). While socio-criminological and gun policy research both provide insights into homicide variation, these literatures have remained predominantly siloed. Combining two often independent literatures – socio-criminological research and gun policy scholarship – I examine the relative contribution each approach provides in explaining homicides. To contextualize this, I first outline the paradigmatic socio-criminological approaches to homicide, as well as other crimes, before turning to discussions about the potential role firearm policies additionally have in affecting homicide patterns.

Structural Determinants of Homicide

Research on homicides has identified a variety of structural correlates (Kurbin and Herting 2003; Messner and Rosenfeld 1993; Shaw and McKay 1942), the majority of which are unique to local-level contexts such as neighborhoods and counties (Bailey 1984; Hsieh and Pugh 1993; Messner 1982). Scholars often employ two major structural approaches to explain homicides, as well as other crimes: strain/anomie theory and social disorganization theory. Explored in more detail below, each of these theories contend that local structural factors create, or contribute to, conditions that increase/decrease homicides (Messner and Rosenfeld 1993; Messner and Tardiff 1986; Parker and McCall 1999).

Expanding Merton's (1938) strain/deprivation theory, criminologists have contended structural conditions shape the lived experiences of social groups (e.g., economic, racial) which affect crime patterns – often referred to as structural anomie theory (SAT) (Messner and Rosenfeld 1993). Earlier work found individual members of particular social groups (e.g., racial minorities, impoverished) may be unable to reach goals or access resources equally compared to their privileged counterparts and, thus, turn towards crime as a means of support (Agnew 1989). While earlier approaches focused more on individual-level dynamics, macro-structural approaches to anomie theory (i.e., SAT) postulate areas with less socio-economic equitability (i.e., inequality between social groups) are associated with increased crime (DeFronzo 1996; Messner and Rosenfeld 1993). Put differently, SAT examines aggregate-level measures (e.g., percent of racial minorities in a county) to capture structural, rather than individual-level, dynamics (Messner and Rosenfeld 1993). SAT approaches dovetail with social disorganization explanations of crime, albeit each theoretical approach provides a unique explanation about the causal mechanism.

Social disorganization theory (SDT) (Shaw and McKay 1942) posits certain structural factors influence levels of social integration within communities which, in turn, leads to variation in crime, including homicides (Lee and Martinez Jr. 2002). Broadly, empirical research employing SDT has identified racial heterogeneity (Kubrin 2000; Petee and Kowalski 1993), economic deprivation (Bursik Jr. and Grasmick 1993; Rosa and Clear 1998; Van Wilsem, Wittbrood, and De Graaf 2006), population turnover/geographic mobility (Morenoff and Sampson 1997; Sampson and Wilson 1995),

regional cultures (Anderson and Anderson 1996; Gastil 1971), and various other factors that shape crime patterns.

Central to SDT, socio-economic dynamics, particularly economic (dis)advantage remains a consistent predictive factor of crime (Akins and Stansfield 2009; Lee, Maume, and Ousey 2003; Strom and MacDonald 2007). Particularly, areas with concentrated poverty, or disadvantage, experience heightened homicide rates (Stretesky, Schuck, and Hogan 2004). Increased poverty within communities often decreases social and organizational connections, or community stability (Kasard and Janowitz 1974). For example, some research has found economic disenfranchisement decreases (in)formal surveillance networks which increases crime (Cohen and Felson 1979; Sampson and Groves 1989; Skogan 1990). Conversely, areas with more economic opportunities often provide alternative outlets to criminal behavior (e.g., community programs) which, in turn, reduces crime (Aizer 2004; Kinney, Brantingham, Wuschke, Kirk, and Brantingham 2008), including homicide (Stansfield, Williams, and Parker 2017). Notwithstanding debates about *why* poverty and disadvantage are associated with crime (Anderson and Anderson 1996; Jargowsky and Bane 1991; Piehl 1998), research continues to find a strong link between economic disadvantage and homicides.³⁷

³⁷ Some posit the reason for inconsistency in these results is the variation in methodological approaches. Within this area of research, scholars often take two major methodological approaches: cross-sectional and time-series. Cross-sectional research consistently identifies an increasing relationship between economic deprivation and various crimes (Blau and Blau 1982; Brush 2007; Choe 2008; Kennedy et al. 1998; MacDonald and Gover 2005), including homicide (Baron, Straus, and Jaffee 1988; Land, McCall, and Cohen 1990). However, longitudinal research finds that the link between economics and crime, across various levels of analyses, is not as consistent as those identified in cross-sectional work (Gurr 1981; Gurr, Grabosky, Hula, and Peirce 1977). Particularly, scholars have heavily critiqued findings from longitudinal analyses citing concerns about model specification (Hale and Sabbagh 1991), spatio-temporal aggregation and error correction (Bailey 1984), and causal inference (Chamlin and Cochran 1998).

Alternatively, scholars have postulated **it** [KO: WHAT IS THE IT HERE?] may be also be poor theoretical conceptualization of why economic conditions impact crime rates (Chamlin and Cochran 1998). For example, economic disadvantage has been conceptualized and operationalized as the disparity between

SDT also points to residential turnover as a key ecological factor that explains variation in homicides. Sometimes referred to as geographic mobility, residential turnover has consistently been associated with increased crime (Boggess and Hipp 2010; Bursik Jr. 1999; Skogan 1989), including homicides (Chamlin 1989). Within communities, there are formal and informal forms of social control, such as local-level policies/initiatives and cultural knowledge of the community, which are disrupted by transient community patterns (Bursik and Grasmick 1993; Bursik Jr. 1999). These disruptions lead to decreased social integration, such as relational networks (Granovetter 1973), which contributes to deviant and criminal activity (Bursik Jr. 1999).

Another important dynamic of SDT scholarship is racial/ethnic heterogeneity (Shaw and McKay 1942). Racial/ethnic heterogeneity operates as a form of disorganization by “[diminishing] community ties, as racial and ethnic differences among people may impose barriers to friendships and broad-based organizational ties” (Warner 1999; 101). Research ubiquitously finds racial make-up is associated with crime rates (Hipp 2007; Trawick and Howsen 2006), particularly related to homicides (Hansmann and Quigley 1982; McCall, Land, and Parker 2011). Directly related to racial/ethnic dynamics, research has also found ethnic enclaves and areas with more international

family incomes (i.e., Gini coefficient) (Brush 2007; Daly, Wilson, and Vasdev 2001; Messner and Tardiff 1986; Patterson 1991), general and group-specific unemployment rates (Britt 1994; Cantor and Land 1985; Lin 2008), and a composite measure of economic disadvantage. Alternatively, others have sought to extend beyond general measures of economic disadvantage and closely consider the role of concentrated disadvantage. These deep pockets of poverty and economic deprivation represent more specific measures of economic inequality that extend beyond traditional surface-level measures of economics, such as poverty levels or income disparities (MacDonald and Gover 2005). Notwithstanding these ongoing debates about the link between economics and crime rates, there continues to be strong theoretical reasonings behind integrating these measures into research on crimes, particularly when exploring the correlates of homicide (Stansfield, Williams, and Parker 2017).

immigrant populations are associated with fewer reported crimes, including homicides (Graif and Sampson 2009; Lee, Martinez, and Rosenfeld 2001).

Other potential explanatory factors of homicide include cultural and interpersonal explanations that contribute to disparate homicide patterns in the United States. For instance, scholars have employed a Southern “(sub-)culture of violence” approach that explores how cultural differences within the United States, particularly in the Southern Census region, are associated with increased criminal activity (Anderson and Anderson 1996; Hackney 1969; Ousey and Lee 2010). While the Southern “[sub]culture of violence” approach continues to be employed within criminological research, scholars debate the utility and causal mechanisms through which these cultural arguments operate (Tcherni 2011; Whitt 2010). Additionally, another cultural argument rooted in interpersonal relations is related to familial dynamics, particularly the number of parents in a household (Brownridge et al. 2008; Hardesty 2002). Research has found communities with more dual-parent households are associated with lower crime rates, including fewer homicides (Laub, Nagin, and Sampson 1998; Skardhamar, Savolainen, Aase, and Lyngstad 2015).

Across each of these identified dynamics rests an underlying assumption: the importance of geographic granularity. Aggregating dynamics to the state-level, as much gun policy research has done (discussed below), ignores this within-state heterogeneity and the localized nature of crime (Messner 1982; Bailey 1984). However, socio-criminological research has systematically ignored the potential role of gun policies. Given the prevalence of firearms in homicides, gun policy scholarship contends gun policies increase/decrease homicides and other violent crime rates (RAND 2018). Thus,

there is a need to synthesize socio-criminological and gun policy insights to better understand homicide patterns – both broadly and firearm-specific.

Gun Policies and Homicides

Gun policy advocates and scholars offer divergent explanations about how, and why, gun policies impact gun violence. To contextualize, firearm policies are often referred to as “gun rights” (e.g., Concealed Carry Weapons (CCW), Stand Your Ground (SYG)) and “gun control” (e.g., Child Access Prevention (CAP), Universal Background Checks (UBC)) policies. Gun rights laws, or laws that provide greater access to firearms, are often framed as a crime deterrent by gun rights activists; whereas gun control activists contend gun rights laws increase crime (Green 1987; LaPierre and Clancy 1994; Steidley and Colen 2017). Conversely, gun control laws are argued to limit access to firearms and keep firearms away from vulnerable populations (e.g., adolescents) by gun control advocates. However, gun rights advocates postulate gun control laws infringe on *2nd Amendment* freedoms and increase crime (Goss 2004; Steidley and Colen 2017). Similar ideological schisms are also present in gun policy research.

Gun policy scholars disagree about the effect of gun policies on crime, including homicide. Some research contends, for example, Concealed Carry Weapons (CCW) policies increase firearm access which leads to increased crime (Dezhbakhsh and Rubin 1998; Ludwig 1998; Manski and Pepper 2017). On the other hand, some scholars postulate arming citizens decreases violent crime because knowledge of armed citizens within communities reduces the likelihood individuals will engage in criminal acts (Lott and Mustard 1997). Notwithstanding these ideological disagreements about the effect of

gun rights/gun control policies, extant empirical research has predominantly focused on CCW laws and finds mixed results (RAND 2018).³⁸

To highlight the mixed nature of CCW policies, research has found CCW laws increase (Rosengart et al. 2005; Siegel et al. 2017; Zimmerman 2014), decrease (Bartley and Cohen 1998; Lott 2010; Plassmann and Whitley 2003), and have no statistical effect on homicides (Aneja et al. 2011; Hepburn et al. 2004). Although there has been limited research on SYG (Gius 2016; Humphreys, Gasparrini, and Wiebe 2017; Kalesan et al. 2016; McClellan and Tekin 2017), CAP (Kalesan et al. 2016), and UBC laws (Ruddell and Mays 2005; Siegel, Pahn, Xuan, Fleegler, and Hemenway 2019; Sumner, Layde, and Guse 2008), research on all four policies has been mixed and, importantly, systematically failed to include well-established socio-criminological insights.

Across all four policies, extant research has predominantly employed state-level longitudinal models (Gius 2014; Ludwig 1998; Siegel et al. 2017) or specific case studies examining the impact of these laws within states shortly before and after passage (Ginwalla et al. 2013; McDowall, Loftin, and Wiersema 1995).³⁹ However, socio-

³⁸ Examining state-level homicide trends between 1979 and 1998, Rosengart et al. (2005) examined how various gun policies, using dummy variables, were associated with firearm and total homicide rates. Results from this study found CCW laws were associated with state-level increases in homicide rates – general and firearm. Confirmed by French and Hegearty (2008) by changing model specifications, others have contended these models were overfit which led to unreliable estimates and confidence intervals (RAND 2018). Although some state-level research has found CCW laws are associated with an increase in homicides, other research using similar state-level modeling approaches finds alternative results. Lott and Whitley (2007), for example, found reduced homicide rates in states that adopted shall-issue CCW laws between 1976 and 1998 – contending CCW laws operate as a crime deterrent. These results were then confirmed by Kendall and Tamura (2010) when extending the focal timeline (1957-2002).

³⁹ Importantly, there have also been analyses examining the effect of state-level CCW policies on city-level homicides (Kovandzic, Marvell, and Vieraitis 2005) and on a sample of larger counties in the United States (Olson and Maltz 2001). Despite these limited studies on more localized homicide rates, there has been minimal research examining the U.S. broadly and how all 50 states and their associated counties experience the trickle-down dynamics of gun policies on homicides and other gun violence patterns (but see Lott and Mustard (1997)).

criminological research posits, and empirically finds, state-level analyses may ignore important dynamics of homicide (Messner and Tardiff 1986). While much of the current research on gun policies employs these state-level models, some research examines gun policy effects using more geographically granular approaches (e.g., counties, cities) (see Aneja, Donohue, and Zhang (2014) or Ayres and Donohue (2003) for examples).⁴⁰ Yet, research employing these geographically granular approaches still have substantive and methodological shortcomings that limits accuracy and validity.

Methodologically, research that has employed these geographically granular approaches has failed to properly account for the state-level variation. One of the first

⁴⁰ When analyzing the impact of firearm-related policies on crime trends, including homicides, gun policy research often focuses on two units of analysis: states and counties. Generally, scholars often apply a state-level panel approach to examine the impact of gun policies (predominantly Concealed Carry Weapons laws). In a meta-analysis on the effects of CCW laws on violent crime, RAND (2018) discusses the current state of the field by breaking down research on state-level and county-level approaches.⁴⁰ In this section, I will discuss the extant research on state-level approaches to gun policies – predominantly CCW laws – as well as the shortcoming of these approaches. After discussing the state-level research, I will then turn to discuss the limited research on county-level models and how “...results of disaggregated [referring to county-level approaches] regressions must...be taken as a more authoritative assessment of the overall impact of concealed-carry laws” (Ayres and Donohue 2003: 1373).

⁴⁰ Overall, the status of the literature remains mixed and scholars often cite methodological shortcomings as the premier reason. Ongoing debates regarding these state-level approaches includes conversations surrounding modeling specifications and techniques in analyzing data. Webster, Crifasi, and Vernick (2014) employ generalized least-squares regressions of U.S. states between 1999 and 2010. Their results find an associated increase in total homicides, non-firearm homicides, and nonnegligent manslaughter and murder. However, researchers contend these approaches are limited in their accuracy because the was a “large number of estimated parameters relative to observations” (RAND 2018) and modeling rate data fails to account for the distribution of the data, especially zero counts, and the data’s count-based nature. In a similar vein, Gius (2014) examines the effect of CCW laws on firearm-related homicide rates between 1980 and 2009. Although Gius (2014) finds more-restrictive firearm-carry policies (i.e., limiting access) were associated with higher rates, Aneja, Donohue, and Zhang (2014) argue the study’s methodology did not account for serial correlation. Thus, to address these concerns Aneja, Donohue, and Zhang (2014) account for the serial correlation and examine multiple ways to operationalize gun policies (e.g., dummy variables, time splines). Aneja, Donohue, and Zhang’s (2014) results found states with shall-issue CCW laws are associated with increased homicide rates; however, this approach was met with criticisms about methodological shortcomings as well (Moody et al. 2014). Although most research on gun policy has focused predominantly on CCW laws (RAND 2018), these methodological considerations hold true for all statistical approaches to understanding the effect of any state-level firearm policies using state-level (often panel) approaches.

geographically nuanced studies examining gun policy effects was Lott and Mustard (1997). Lott and Mustard (1997) found counties located in states that had adopted CCW laws were associated with a decrease in violent crime, including homicides. However, many scrutinized Lott and Mustard's methodological approach, including the modeling technique and noted significant coding errors (Ayres and Donohue 2009 ; Maltz and Targonski 2002, 2003).⁴¹ While some scholars have attempted to address these methodological shortcomings (Aneja, Donohue, and Zhang 2014; RAND 2018), previous approaches remain limited. In particular, recent research has utilized a clustered standard error approach which accounts for some state-level variation (Aneja, Donohue, and Zhang 2014). Although clustered standard errors adjust standard error estimates by accounting for the correlation between observations at a given aggregate-level (e.g., state) (Cameron and Miller 2015), this approach may imprecisely estimate the variance components, specifically higher-level standard errors (Huang 2018), and significantly increases the probability of over-rejecting the null hypothesis (i.e., Type I Error) (Cheah 2009; McNeish 2014).

On top of these methodological concerns, gun policy research over the past two decades (RAND 2018) has continued to sideline substantive socio-criminological insights.⁴² Even analyses using geographically granular approaches - predominantly at

⁴¹ See RAND (2018) for a discussion about Lott and Mustard's (1997) work and the subsequent research replicating Lott and Mustard's (1997) results.

⁴² Scholars heavily scrutinized Lott and Mustard's (1997) methodological approach. Maltz and Targonski (2002) found Lott and Mustard's (1997) data did not align with reported county crime statistics, the modeling techniques did not adequately account for the large number of counties reporting no homicides, and identified coding errors for when states adopted shall-issue CCW laws. Once accounting for these coding errors and model misspecifications, research replicating the results correcting for these methodological issues found Lott and Mustard's (1997), as well as Lott and Whitley's (2003), findings no longer statistically indicated this previously identified decrease (Ayres and Donohue 2009). NRC (2004)

the county-level (RAND 2018) – have failed to integrate socio-criminological theories of crime and homicide. Therefore, in order to better ascertain the effect of gun policies on homicides, gun policy research needs to address these major shortcomings and, additionally, examine these effects among multiple firearm-related policies.

Given these identified limitations in gun policy research, this chapter bridges together socio-criminological and gun policy literatures. Combining these substantive and empirical approaches allows for a more robust and theoretically informed examination of how gun policies may affect homicides. In particular, including socio-criminological measures allows insight into whether these policies matter above and beyond community-level contexts. Thus, the driving research question for this chapter is: *To what extent do certain state-level firearm policies explain variation in county-level homicides above and beyond well-established county-level correlates?*

C. Chapter 2 Data and Methods

Over time, criminologists have debated what aggregate level is the “best” when assessing the effect of structural variables on violent crime, particularly homicide (Hsieh and Pugh 1993; Wenger 2019a, 2019b). While earlier work examined state- and national-level contexts to understand the structural determinants of violent crime, Messner (1982)

also corrected the data to better reflect county-level crime statistics and zero-reporting counties, which found CCW laws were associated with an increase in county-level crime. Hahn et al. (2005) would then replicate the NRC’s (2004) report which better accounted for standard error estimation via robust standard error calculations. Extending these methodological conversations on county-level approaches to gun While these more geographically granular approaches do provide unique and important insight (Ayes and Donohue 2009), they ignore community-level dynamics central to research on crime, including homicides (Ayes and Donohue 2003). As discussed extensively above, criminologists have long found community-level dynamics – conceptualized at the county-level in this chapter – are more informative of homicide compared to more aggregate-level factors (Wenger 2019). policies, Aneja, Donohue, and Zhang (2014) reported the NRC (2004) report, as well as some other research, had failed to cluster the standard errors at the state-level thus having negative effects on confidence interval construction. However, only one study has employed this state-level clustering: Aneja, Donohue, and Zhang (2014).

argued counties, as well as other lower-levels of analysis, are more appropriate because they represent “genuine social communities” (Messner 1982:106).⁴³ Counties represent localized units that researchers often conceptualize as a community (Frelich, Adamczyk, Chermak, Boyd, and Parkin 2015). These more geographically granular approaches highlight the localized nature of violent crime, such as homicide, compared to more aggregate units, such as states and nations (Messner 1982; Messner and Tardiff 1986). Based on these insights, counties are regularly employed as the unit of analysis in homicide research (AbiNader 2020; Hunnicutt 2007; Kposowa and Breault 1993). Particularly, county-level approaches allow for a more geographically granular approach that better captures homicide variability, as well as the correlates of homicide (Allison and Harris 2017; Burkhardt and Goemans 2019). Notwithstanding these important insights from criminological research, gun policy research often fails to consider the localized nature of homicide (Messner 1982). Often employing state-level models (RAND 2018), gun policy research fails to explicitly recognize the localized nature of homicide and control for socio-criminological correlates.

While some gun policy research has taken more geographically granular approaches – particularly at the county-level (Aneja, Donohue, and Zhang 2014; RAND 2018) – it has systematically ignored substantive insights from socio-criminological research and employed improper statistical techniques (Aneja, Donohue, and Zhang 2014; Cheah 2009). Methodologically, geographically nuanced approaches to firearm policies have evolved to use clustered standard errors to account for state-level variation

⁴³ Although some scholars have contended counties still represent too large of an area to make adequate assessments (Bailey 1984; Messner and Tardiff 1986), counties continue to be a consistently employed unit of analysis in homicide research (AbiNader 2020).

(Aneja, Donohue, and Zhand 2014; RAND 2018). Although preferred over earlier analytical approaches, clustered standard errors often fail to account for the nested structure and lead to over-rejection of the null-hypothesis, or Type I error (McNeish 2014). Multilevel modeling (MLM), however, allows research to address both of these concerns (Cheah 2009). MLM more appropriately accounts for the nested structure of the data (Raudenbush and Bryk 2002) which, in turn, more adequately estimates the variance components (Cheah 2009), particularly at higher-levels of analysis (Huang 2018). Additionally, MLMs allow the simultaneous inclusion of, in this case, county- and state-level factors and the ability to address the proposed research question. To contextualize the research conducted in this chapter, I discuss my focal dependent and independent variables (Table 3.1) before providing details about the analytic approach employed.

Table 3.1: Description of Variables

Variable	Description	Data Source
<i>Dependent Variables</i>		
Binary Homicide	Whether (1) or not (0) a homicide was reported in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
Total Homicides	Total number of reported homicides in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
Binary Firearm Homicide	Whether (1) or not (0) a firearm-related homicide was reported in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
Firearm Homicides	Total number of reported homicides perpetrated with a firearm in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
Binary Handgun Homicide	Whether (1) or not (0) a handgun-related homicide was reported in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
Handgun Homicides	Total number of reported homicides perpetrated with a handgun in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
Binary Long Gun Homicide	Whether (1) or not (0) a long gun-related homicide was reported in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
Long Gun Homicides	Total number of reported homicides perpetrated with a shotgun or rifle in a county (2014-2016)	FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016)
<i>Focal Independent Variables</i>		
Concealed Carry Weapons (CCW) Law	Whether (1) or not (0) a state has passed a "shall-issue" CCW Law	State Firearm Laws Database (2015)
Stand Your Ground (SYG) Law	Whether (1) or not (0) a state has passed a SYG Law	State Firearm Laws Database (2015)
Child Access Prevention (CAP) Law	Whether (1) or not (0) a state has passed a CAP Law	State Firearm Laws Database (2015)
Universal Background Check (UBC) Law	Whether (1) or not (0) a state has passed a UBC Law	State Firearm Laws Database (2015)
Time since CCW Adoption	Elapsed time since "shall-issue" CCW Policy was adopted	State Firearm Laws Database (2015)
Time since SYG Adoption	Elapsed time since SYG Policy was adopted	State Firearm Laws Database (2015)
Time since CAP Adoption	Elapsed time since CAP Policy was adopted	State Firearm Laws Database (2015)
Time since UBC Adoption	Elapsed time since UBC Policy was adopted	State Firearm Laws Database (2015)
<i>County-Level (Level 1) Controls</i>		
Federal Firearms Licensees	Number of Federal Firearms Licensees (FFLs) in a county (per 10,000 people)	Bureau of Alcohol, Tobacco, and Firearms (2015)
% Rural	Percent of a county population that resides in a rural area	American Community Survey (2015)
County Mobility	Percentage of people who moved out of the county	American Community Survey (2015)
% Black	Percent of residents in a county that are Black	American Community Survey (2015)
% Foreign-Born	Percentage of the population that is foreign-born	American Community Survey (2015)
% Poverty	Percentage of residents that fall below the 2015 poverty line	American Community Survey (2015)
% Unemployed	Percentage of the county population that is unemployed	American Community Survey (2015)

Median Age	Median age of residents in a county	American Community Survey (2015)
% BA or more	Percentage of county residents with a BA or more education	American Community Survey (2015)
% Married	Percentage of the population that is married in a county	American Community Survey (2015)
% 12-24	Percentage of the county population that is aged 12-24	American Community Survey (2015)
Mainline Protestant Adherents	Mainline Protestant Adherents in a county (per 10,000 people)	Churches and Church Membership in the United States (2010)
Decomposed Crime Rate	Calculated crime rate per 10,000 residents (excluding homicides)	FBI Uniform Crime Report (2015)
Neighboring Counties Average Homicide Rate	Average homicide rate of neighboring counties	Author Calculated from FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016) (2015)
Neighboring Counties Average Firearm Homicide Rate	Average firearm homicide rate of neighboring counties	Author Calculated from FBI Uniform Crime Report Supplemental Homicide Report (2014, 2015, 2016) (2015)
Neighboring Counties Average Handgun Homicide Rate	Average handgun homicide rate of neighboring counties	Author Calculated from FBI SHR (2015)
Neighboring Counties Average Long gun Homicide Rate	Average long gun homicide rate of neighboring counties	Author Calculated from FBI SHR (2015)
Total Population (Logged)	Total number of residents in a county	American Community Survey (2015)
<i>State-Level (Level 2) Controls</i>		
Federal Firearms Licensees	Number of Federal Firearms Licensees (FFLs) in a county (per 10,000 people)	Bureau of Alcohol, Tobacco, and Firearms (2015)
% Rural	Percent of a state population that resides in a rural area	American Community Survey (2015)
County Mobility	Percentage of people who moved out of the state	American Community Survey (2015)
% Black	Percentage of residents in a state that are Black	American Community Survey (2015)
% Foreign-Born	Percentage of the population that is foreign-born	American Community Survey (2015)
% Poverty	Percentage of residents that fall below the 2015 poverty line	American Community Survey (2015)
% Unemployed	Percentage of the state population that is unemployed	American Community Survey (2015)
Median Age	Median age of residents in a state	American Community Survey (2015)
% BA or more	Percentage of state residents with a BA or more education	American Community Survey (2015)
% Married	Percentage of the population that is married in a state	American Community Survey (2015)
% 12-24	Percentage of the state population that is aged 12-24	American Community Survey (2015)
Mainline Protestant Adherents	Mainline Protestant Adherents in a state (per 10,000 people)	Churches and Church Membership in the United States (2010)
Decomposed Crime Rate	Calculated crime rate per 10,000 residents (excluding homicides)	FBI Uniform Crime Report (2015)
Neighboring Counties Average Homicide Rate	Average neighboring county homicide rate in a state	Author Calculated from FBI SHR (2015)

Neighboring Counties Average Firearm Homicide Rate	Average neighboring county firearm homicide rate in a state	Author Calculated from FBI SHR (2015)
Neighboring Counties Average Handgun Homicide Rate	Average neighboring county handgun homicide rate in a state	Author Calculated from FBI SHR (2015)
Neighboring Counties Average Long gun Homicide Rate	Average neighboring county long gun homicide rate in a state	Author Calculated from FBI SHR (2015)
South	Whether (1) or not (0) a state is located in the Southern Census Region	U.S. Census Bureau (2015)
NRA Journal Subscriptions	Number of NRA Journal Subscriptions per capita	Steidley (2019)
% Republican Legislators	Percentage of state-level Representatives that are registered Republicans	National Conference of State Legislatures (2015)
Hunting Licenses	Number of hunting licenses per capita	U.S. Fishing and Wildlife Services (2015)
Suicide Rate	Number of suicides per 100,000 people	Center for Disease Control and Prevention (2015)
CCW Policy Diffusion	Percentage of surrounding states that have adopted a "shall-issue" CCW policy	Author Calculated from State Firearm Laws Database (2015)
SYG Policy Diffusion	Percentage of surrounding states that have adopted an SYG policy	Author Calculated from State Firearm Laws Database (2015)
UBC Policy Diffusion	Percentage of surrounding states that have adopted an UBC policy	Author Calculated from State Firearm Laws Database (2015)
CAP Policy Diffusion	Percentage of surrounding states that have adopted an CAP policy	Author Calculated from State Firearm Laws Database (2015)

Dependent Variables: Types of Homicides

County-level homicide data come from the FBI's Uniform Crime Report (UCR), specifically the 2014, 2015, and 2016 Supplementary Homicide Reports (SHR).⁴⁴ Data from the FBI SHR is based on local law enforcement agencies reporting their data on reported homicides within their respective jurisdictions to the FBI (U.S. Department of Justice 2014, 2015, 2016). Importantly, the FBI's SHR provides data on the weapon used by the perpetrator, including various types of firearms (e.g., handguns, rifles, shotguns).⁴⁵ For the purpose of this dissertation, I construct four dependent variables designed to tap into general homicide patterns and homicides conducted using specific firearms that are known to police. I sum together 3-years of homicide data to stabilize the results. This approach accounts for potential spikes or trends that may be unique to a specific year rather than the broader homicide patterns within the unit of analysis. I focus on 2014-2016 for two major reasons. First, 2014-2016 marked the first set of years since the 1990s where homicides increased, sparking an entire special edition of the *Journal of Homicide Studies* dedicated to understanding this spike (Rosenfeld 2019). Second, this is the most recent data at the time of data collection that was reported by the Uniform Crime Report

⁴⁴ Florida does not report their homicides to the UCR Supplemental Homicide Report. However, the Florida Department of Law Enforcement (FDLE) provides a Supplemental Homicide Report that is the same as the UCR reporting protocol. The data were retrieved from the FDLE website (<http://www.fdle.state.fl.us/ESAC/Crime-Data/SHR.aspx>) and were then aggregated to the county-level – stratified by weapon/firearm type. These data were then merged using FIPS codes and appended to the original FBI UCR SHR data.

⁴⁵ Within the FBI's UCR SHR data, each perpetrator is reported and the weapon that was used by each perpetrator, if available, is reported. However, not all events have more than one perpetrator. For the purposes of this dissertation, I focus only on the weapons used by the first listed perpetrator according to the SHR data. This could potentially mean that another perpetrator had a firearm present; thus, there is room for error in these calculations.

and, thus, provides insight into how criminological dynamics and gun policies shape contemporary homicide trends.

Seeing as this chapter focuses on firearm-related legislation, I examine four different dependent variables associated with homicide: *overall homicide* (i.e., all homicides reported between 2014 and 2016), *firearm-related homicides* (i.e., homicides conducted using any firearm), *handgun-related homicides* (i.e., homicides conducted using a handgun), and *long gun-related homicides* (i.e., homicides conducted using a long gun). First, I construct a binary (0/1) homicide variable that measures whether a homicide was reported in a county. Subsequently, I construct a count variable of the total number of homicides that occurred in a county-state dyad over the three-year period. Second, given that the majority of homicides are conducted with a firearm (FBI 2019), I construct a binary and count variable for the total number of firearm homicides that were reported. Third, I construct a binary and count variable for the total number of handgun homicides that were reported. Of firearm-related homicides, handguns represent the most frequently employed firearm (FBI 2019; see Figure 3.1). Finally, I construct a binary and count variable for the total number of long gun – rifles and shotguns – homicides that were reported. Long guns make up the least employed firearm in firearm-related homicides (FBI 2019). By including four different measures of homicide, I not only explore how these policies predict homicides generally, but how particular socio-criminological and policy-related dynamics may operate uniquely for certain types of homicides by firearm type.

Focal Independent Variables: Firearm Regulations/Policies

The *State Firearm Laws Database* is a comprehensive database that collects information on when and where gun policies have been adopted. The dataset includes over 50 possible firearm policies, including my four focal gun-related policies: Concealed Carry Weapons (CCW), Stand Your Ground (SYG), Child Access Prevention (CAP), and Universal Background Checks (UBC). For each of these policies, I create two separate measures to capture the dynamics of firearm policy. First, I construct a binary measure (0/1) for each policy that represents whether the policy is present in 2015. Second, I construct a temporal measure that represents the number of years the policy has been in place. A state is coded as “0” if the state does not have the policy in place, “1” if the state adopted the policy in 2015, “2” if the state adopted the policy in 2014, and follows the same 1-year incremental scale. The binary variable explores how the presence of a given policy impacts homicide rates, whereas the time since adoption is designed to explore if there are any temporal effects.

Criminological Explanations: Social Disorganization

As discussed in detail above, criminologists and sociologists have long turned to social (dis)organization factors to explain various crime rates, including homicides (Messner and Rosenfeld 1997; Shaw and McKay 1942). In order to account for these potential confounding factors, I include well-known theoretically- and empirically-identified measures that are associated with county-level social (dis)organization contexts. First, I include a measure of the number of federal firearm licensees (per 10,000 residents) present in a county. Albeit debated, federal firearm licensees (FFLs) may capture potential spaces representing social disorganization while simultaneously

increasing access to firearms (Steidley et al. 2017). Second, I construct percent Black and foreign-born residents measures to account for potential racial/ethnic dynamics associated with social disorganization. *Percent black* is measured by dividing the total number of Black residents by the total number of residents and multiplying by 100.⁴⁶ Given theoretical insights about racial and ethnic relations and crime (Shaw and McKay 1942) and research on ethnic enclaves and crime rates (Graif and Sampson 2009; Lee, Martinez, and Rosenfeld 2001), the *foreign-born residents* measure is the total number of foreign-born residents divided by the total county population.

Third, I include two measures that are related to economic opportunity and disadvantage: poverty rate and unemployment rate. The *poverty rate* is operationalized as the total number of people in a county that fell below the 2015 federal poverty line divided by the total county population. Additionally, the *unemployment rate* divides the total number of residents in a county that reported being unemployed in 2015 divided by the total county population. Fourth, I include measures of population density, as well as population turnover to account for new individuals moving into communities: rurality and geographic mobility. *Rurality* is the total number of people reported to live in a “rural” area – defined by the U.S. Census Bureau – divided by the total county population. As for *geographic mobility*, data from the 2015 ACS measures the percentage of county-level residents that moved into the neighborhood in the past 12 months, including moves within the same county.

⁴⁶ This measurement of racial make-up has been a long established measure within criminological research (Smith and Jarjoura 1988; Sun, Triplett, and Gainey 2004). However, research continues to debate the preferred measures for racial-make up (Kubrin 2000; Trawick and Howsen 2006; Hipp 2007). Sensitivity analyses (not reported here) were conducted using alternative racial make-up scales (e.g., racial heterogeneity) and substantively similar results were identified.

To measure other demographic characteristics correlated with homicide and other crime rates, I include the following measures: college educated population, marriage rate, and adolescent/young adult population (12-24). To measure the *college educated population*, I divide the total number of residents that report having a bachelor's degree or higher by the total county population. Similarly, the *marriage rate* divides the total number of people who reported being married in a county by the total population. To account for age-related dynamics associated with homicide patterns (O'Brien, Stockard, and Issacson 1999), the *juvenile/young adult population (12-24)* is measured by dividing the total number of people residing in a county aged 12 to 24 by the total county population.

Additionally, I include two measures to address cultural dynamics. Religion scholars have found that religious groups, particularly Mainline Protestant communities (Lee and Batrkowski 2004; Trawick and Howsen 2006), operate as a social organizational mechanism (i.e., moral community hypothesis) that is associated with lower crimes rates. Therefore, I use a measure of the number of reported *Mainline Protestant adherents* in a county (per 10,000 residents) retrieved from *The Association of Religion Data Archives' Churches and Church Membership Survey* (2010). Moreover, given research on the southern culture of honor/violence (Gastil 1971; Grosjean 2014; Lee, Bankston, Hayes, and Thomas 2007), I include a measure for whether or not the county is located in the *Southern Census region*.

Finally, I include two other measures that account for previous crime-related factors and patterns: the county's crime rate in 2015 and the average rate of homicides in neighboring counties. The crime rate measure is constructed as a *decomposed crime rate*

which is the sum of all crimes minus homicides (per 10,000 people) and comes from the *FBI's Uniform Crime Report*. As for the potential for crime to transcend political boundaries, such as county lines, I include an *average homicide rate in neighboring counties*. Four distinct measures are constructed, one for each of the focal dependent variables: overall homicide, firearm-related homicides, handgun-related homicides, and long gun-related homicides. Using a county-level adjacency file from the *U.S. Census Bureau*, I sum together the number of homicides reported between 2014 and 2016 of all surrounding counties and then divide the sum by the total number of neighboring counties.⁴⁷

Each of these measures is group-mean centered (i.e., each county's observation is subtracted by the respective state's average value on a particular measure). Specifically, group-mean centering removes the between cluster variation from the county-level measures and provides a pooled within-cluster variance estimate (Enders and Tofighi 2007). Additionally, recent scholarship has raised concerns about research not correcting for "omitted level bias", particularly in crime-related research (Wenger 2019a, 2019b). To address this concern, each of the county-level measures has a commensurate state-level measure that is the grand-mean centered. Put differently, group-mean centering the county-level allows insight into the within-state effects and the grand-mean centering of the state-level measures allows analysis of the between-state effects (Raudenbush and

⁴⁷ The neighboring county homicide measure focuses only on the average number of reported homicides in surrounding counties. It is calculated by dividing the raw county of homicides in all surrounding counties by the total number of surrounding counties. This measure does not account for county size; however, sensitivity analyses indicate similar results when using the average rate of homicides in surrounding counties.

Bryk 2002).⁴⁸ All county-level (first-level) measures reported above are included in as second-level, or state-level, controls as well.

Correlates of Gun Policies: State-level Socio-Political Contexts

Traditionally, research exploring how gun policies affect homicides and crime-related outcomes focus on understanding the policy as a form of treatment rather than directly acknowledging, and controlling, for factors associated with their passage.

Limited research on firearm policies has found the factors associated with when and why these policies get passed are shaped by socio-demographic and political contexts (Malone and Steidley 2019; Steidley 2018). Therefore, I include a series of state-level predictors that previous research has found to be associated with the adoption of firearm policies but has not been included in most research on homicides or gun violence broadly.

Pulling from social movement research, I include a measure of *NRA magazine subscriptions* as a proxy for NRA membership. As found by Steidley (2018) and findings from Chapter II in this dissertation, NRA resources and political contexts are associated with the adoption of gun rights and gun control policies. Additionally, some epidemiological research has argued NRA membership – measured through journal subscriptions – operates as an important proxy for firearm prevalence as well (Siegel et al. 2019). Additionally, I include a measure of the *percent Republican legislators* in a state as research has found Republicans are often more supportive of gun rights initiatives and opposed to gun control initiatives (Cook and Goss 2014; Malone and Steidley 2019).

⁴⁸ However, some debate the applicability of these approaches (see Wenger 2019a for a review). To address for this, I also conduct a series of sensitivity analyses that exclude these grand-mean centered state-level values. Substantively, the findings are similar across the models. These can be found in Appendix Tables A.8, A.9, A.10, and A.11.

I include a measure for the *hunting license rate* retrieved from the *U.S. Fish and Wildlife Service* (2015). Annually, states report how many hunting licenses are approved for state residents and have been used as an indicator of firearm prevalence and usage, especially for recreational purposes (Steidley 2018). Although most homicides are conducted with a handgun (Cooper and Smith 2014), hunting licenses remain one of the only consistent measures capturing firearm-related ownership (Siegel et al. 2019). I also employ a state-level *suicide rate* measure given research has found that suicide rates may be a proxy measure the number of firearms present in an area (Siegel et al 2019). Using data from the *Center for Disease Control and Prevention (CDC)*, I include a state-level measure of the total number of suicides (per 100,000 people) that occurred in 2015.⁴⁹ Finally, diffusion processes are well-known within the social movement and political processes literature (Renzulli and Roscigno 2005; Steidley 2018). Thus, I include measures for the percentage of surrounding states that have adopted the focal dependent variables: *CCW Policy Diffusion*, *SYG Policy Diffusion*, *CAP Policy Diffusion*, and *UBC Policy Diffusion*.⁵⁰ Each of these measures are calculated by summing together to the total number of surrounding states that have adopted each policy and dividing the summed measure by the total number of neighboring states.

⁴⁹ I opt to use the state-level measure because the local-level estimates from the CDC Wonder database do not allow for the calculation of these rates for all counties in a single year. In the county-level data, rural counties and those with fewer suicides are reported as “untrusted estimates” and the data is not provided for that county. Using this, the sample size would have dropped well below 1,200. While still substantial, it would not be representative of the entire United States. Therefore, the state-level measure is included as a proxy for state-level firearm prevalence following recommendations by Siegel et al. (2019).

⁵⁰ The diffusion measures for CCW, SYG, CAP, and UBC policies only focus on the percentage of neighboring states that had adopted the respective policy in, or by, 2015. Although there may be some temporal dynamic to this, the analyses conducted here are cross-sectional and are not designed to capture temporal dynamics of policy diffusion.

Analytic Method

Give the nested structure of the data – counties nested within states – I employ a series of multi-level models to explore how state-level policies are associated with county-level homicide patterns above county-level socio-criminological dynamics and other confounding factors. Traditionally, a count-based dependent variable would call for a Poisson modeling technique. However, the number of county-level homicides is skewed to the right indicating the need for a negative binomial approach. Moreover, there is an overrepresentation of zeros in the distribution of all four dependent variables. Using the *countfit* command in Stata 15.1, results indicate a preference for a zero-inflated negative binomial approach over any other count-based modeling techniques (i.e., Poisson, negative-binomial, zero-inflated Poisson). Despite preference for a zero-inflated negative-binomial approach, there is currently no well-established method to conduct a two-level, zero-inflated negative binomial regression. To deal with this methodological issue, I perform the following series of analyses.

First, I run a series of logistic 2-level models on the binary (0/1) dependent variables. For each of the dependent variables, I predict the odds a county will have at least one (1) reported homicide – with no homicides (0) being the reference category – and then store these estimates. The logistic models provide insight into the extent to which the independent and confounding variables predict whether a homicide is reported. However, this does not provide information about the variation in the number of homicides – often the focal outcome in homicide research. To effectively model the number of homicides reported, I employ a series of 2-level negative-binomial regressions that includes an additional term (Q_{ij}) based on the predicted probabilities of the 2-level logistic regressions. These analyses only include counties where at least one homicide –

respective to each focal dependent variable – was reported. To help contextualize this approach, a multi-level logistic regression can be expressed as (Eq. 1):

$$\Pr(Y_{ij} = 1) = \beta_{0j} + \beta_{1j}(C_{ij}) + e_{ij}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(G_j) + \gamma_{02}(S_j) + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

Eq 3.1) Two-Level Logistic Regression Equation

Where G_j refers to a vector of the four focal firearm-related policies, C_{ij} refers to a vector of county-level controls, and S_j refers to a vector of state-level controls.

However, I include the stored estimates from the two-level logistic regressions (Q_{ij}) to account for the predicted probability a county will report a homicide. The purpose of this measure is not to provide any substantive insight, but instead to account for variation often captured in a zero-inflated negative-binomial approach (Long and Freese 2014). Thus, I include this additional term in a series of two-level negative-binomial regressions only on counties that report at least one (1) homicide (for each count-based dependent variable) between 2014 and 2016. Given the integration of this additional factor, the two-level negative-binomial equation is expressed as:

$$\tilde{\mu}_{ij} = \exp (\beta_{0j} + \beta_{1j}(C_{ij}) + \beta_{2j}(Q_{ij}) + e_{ij})$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(G_j) + \gamma_{02}(S_j) + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

Eq 3.2) Two-Level Negative Binomial Equation with logistic probability term (Q_{ij})

Combining these two approaches, I am better able to explore how the identified factors are associated with whether or not a homicide occurs (i.e., 2-level logistic

regression) and how the variation in the number of homicides, if more than one homicide occurred in the county, is shaped by state-level firearm policies above and beyond the county-level correlates (i.e., 2-level negative-binomial regression). Additionally, I use an offset function – using the logged county population size – in the negative-binomial regressions to effectively model the homicide rate while maintaining the count-based properties of the dependent variable (Long and Freese 2014). All logistic regression results are reported in odds ratios (OR) and all negative-binomial regressions are reported in incidence rate ratios (IRR) following best practices (Long and Freese 2014). I now turn to discuss the descriptive statistics and results.

D. Results

Table 3.2: Descriptive Statistics

Variable	M/P	SD
Dependent Variables		
Homicide (0/1)	0.68	
Total Homicide	14.98	75.01
Firearm Homicides (0/1)	0.58	
Total Firearm Homicides	10.53	58.01
Handgun Homicides (0/1)	0.49	
Total Handgun Homicides	6.93	45.17
Long Gun Homicides (0/1)	0.26	
Total Long Gun Homicides	0.62	2.23
Level 1 (County) Controls		
% Rural	0.60	0.31
Geographic Mobility ₁	6.89	2.75
% Black	0.14	0.36
% Foreign Born	2.81	3.58
% Poverty	16.55	6.37
% Unemployed	7.76	3.41
Median Age	40.89	5.27
% BA or more	13.42	5.42
% Married	51.94	6.87
% 12-24	11.72	3.58
Mainline Protestant Rate ₁	116.64	100.70
Decomposed Crime Rate ₁	3173.64	2234.01
Average Neighboring County Homicide	15.26	38.07
Average Neighboring County Firearm Homicide	10.33	27.08
Average Neighboring County Handgun Homicide	7.14	21.23
Average Neighboring County Long Gun Homicide	0.63	1.21
Level 2 (State) Controls		
% Rural	0.60	0.12
Geographic Mobility	6.82	0.88
% Black	0.15	0.23
% Foreign Born	2.81	1.98
% Poverty	16.65	3.68
% Unemployed	7.80	2.19
Median Age	40.94	1.78
% BA or more	13.37	2.62
% Married	51.88	3.59
% 12-24	11.69	0.64
Mainline Protestant Rate	116.71	75.64
Decomposed Crime Rate	3173.67	884.81
Average Neighboring County Homicide	14.93	17.39
Average Neighboring County Firearm Homicide	10.09	11.96
Average Neighboring County Handgun Homicide	6.98	8.38
Average Neighboring County Long Gun Homicide	0.62	0.68
South	0.45	
NRA Journal Subscriptions ₂	12.38	1.44
% Republican Legislators	61.43	12.65
Hunting Licenses ₂	14.70	1.58
Suicide Rate ₂	15.41	3.63
CCW Diffusion	44.86	35.49
SYG Diffusion	31.59	28.70
CAP Diffusion	36.33	29.53
UBC Diffusion	8.17	15.15
Gun Policy Measures		
CCW Law	0.94	

SYG Law	0.59	
CAP Law	0.63	
UBC Law	0.16	
Time since CCW Adoption	18.69	9.30
Time since SYG Adoption	5.25	4.74
Time since CAP Adoption	13.89	11.37
Time since UBC Adoption	3.89	9.56

Note: M=Mean, P=Proportion, SD=Standard Deviation; n=3131

¹ Variable is reported per 10,000 people

² Variable is measured per 100,000 residents

Descriptive Statistics

To describe the measures employed in this chapter, I discuss the descriptive statistics which are also available in Table 3.2. For overall homicide, 67.99% of counties were reported to have at least one (1) homicide and the average county was reported to have 14.98 (SD=75.01) homicides between 2014 and 2016. As for firearm-related homicides, 57.69% of counties were reported to have at least one homicide and the average county had 10.53 (SD=58.01) homicides. In line with historical trends in homicide (see Figure 3.1), 48.8% of states reported a handgun-related homicide and, on average, a county was reported to have 6.93 (SD=54.17) handgun-related homicides. As for long gun-related homicides, 25.54% of counties were reported to have at least one and the average county reported 0.62 (SD=2.23) homicides.

Turning now to the county-level factors, the average county reported that 59.67% (SD=30.89) of their population resided in a rural area, 6.89 (SD=2.75) residents (per 10,000 residents) not previously residing in the county in the past five years, and most counties have a low proportion of Black residents (M=0.14, SD=0.355). Additionally, the average county reported that 2.81% (SD=3.58) of their residents were foreign-born, 16.55% (SD=6.37) fell below the 2015 federal poverty line, and 7.76% (SD=3.41) of residents were unemployed in 2015. The average age of a resident in a county is 40.82 (SD=5.27), 13.42% (SD=5.42) of residents in the average county had a Bachelor's degree or higher, 51.94% (SD=6.87) of residents were married, and 11.72% (SD=3.58) of the average county's population is aged 12-24. Per 10,000 residents, there were approximately 117 (SD=100.70) Mainline Protestants and 3,173 (SD=2234.01) and 3173.64 (SD=2234.01) crimes (excluding homicides). On average, a county's

surrounding counties reported approximately 15 (SD=38.07) overall homicides, 10 (SD=27.08) firearm-related homicides, 7 (SD=7.14) handgun-related homicides, and 0 (SD=1.21) long gun-related homicides.

As for the state-level correlates employed, 60.20% (SD=11.66) of the average state's population resides in a rural area, 6.82 (SD=0.88) of the state residents (per 10,000) did not previously reside in the state in the past 5 years, and there seems to be low percentage of Black individuals (M=0.15, SD=0.23). Additionally, 2.81% (SD=1.98) of the average state's population is foreign-born, 16.65% (SD=3.68) of state residents fell below the 2015 federal poverty line, and 7.80% (SD=2.19) of the average state's population were unemployed. The average state's resident was approximately 41 (SD=1.78) years old, 13.37% (SD=2.62) of the average state's population has a Bachelor's degree or higher, 51.88% (SD=3.59) of the average state's population was married, and 11.69% (SD=0.64) of the average state's population was aged 12 to 24. On average, approximately 116 residents in a state (per 10,000 residents) were reported to be Mainline Protestants and 3173 (SD=884.81) crimes were reported (per 10,000 residents). The state-level average of all counties within a state for county-adjacent homicides was 14.93 (SD=17.39) for overall homicides, 10.09 (SD=11.96) for firearm-related homicides, 6.98 (SD=8.38) for handgun-related homicides, and 0.62 (SD=0.679) for long gun-related homicides. Overall, 44.74% of counties resided in states that were located in the Southern Census Region of the United States. Per 100,000 residents, the average state had 61.43 (SD=12.65) subscriptions to three major NRA journals, 14.70 (SD=1.58) hunting licenses granted, and 15.40 (SD=3.63) suicides. As for the percentage of states that have adopted the identified policies (i.e., diffusion), the average state has 44.86%

(SD=35.49) of their neighboring states having adopted a CCW policy, 31.59% (SD=28.70) having adopted an SYG policy, 36.33% (SD=29.53) having adopted a CAP policy, and 8.17% (SD=15.15) having adopted a UBC policy.

As for firearm-related policies, 93.76% of counties were located in a state that had adopted a Concealed Carry Weapons (CCW) policy by 2015, 58.82% of counties were located in a state that had adopted a Stand Your Ground (SYG) policy, 62.72% were located in a state that had a Child Access Prevention (CAP) law in place, and only 16.11% of counties were located in a state that had adopted a Universal Background Checks (UBC) policy.⁵¹ Additionally, the average state had adopted a shall-issue CCW law 18.69 (SD=9.30) years prior to 2015 and had adopted their SYG law 5.25 (SD=4.74) years before 2015. As for the gun control policies, the average state adopted a CAP law 13.89 (SD=11.37) years prior to 2015 and adopted a UBC law 3.89 (SD=9.56) years prior to 2015.

⁵¹ CCW policies exist in approximately 94% of counties by 2015. While they are examined in this chapter, these findings may not be able to capture the effect of CCW policies given their overwhelming presence. Since CCW laws have become increasingly adopted since the 1980s (Malone and Steidley 2019; Steidley 2018; see Figure 2.1), historical (e.g., earlier cross-sectional time points) or time-series analyses may be better equipped at addressing the net effect of CCW laws on homicides and other forms of violent crime.

Table 3.3a: Null Model Results of Multi-Level Logistic Regressions

	OR		OR		OR		OR		
Constant	3.04	***	1.56	*	1.03		1.03		
Variance Components	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	
var(State)	1.82	0.45	***	1.48	0.36	***	1.32	0.32	***
ICC	0.36	0.06		0.29	0.05		0.19	0.04	
N	3131		3131		3131		3131		
N(States)	50		50		50		50		

Note: OR=Odds Ratio; * p<.05, ** p<.01, *** p<.005; two-tailed test; ICC=Intraclass Correlation Coefficient

Table 3.4b: Null Model Results of Multi-Level Negative Binomial Regressions

	IRR		IRR		IRR		IRR		
Constant	15.18	***	12.39	***	8.8	***	2.07	***	
Variance Components	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	
var(State)	0.73	0.17	***	0.71	0.17	***	0.76	0.19	***
ICC	0.11			0.07			0.10		0.01
N	2081		1766		1494		776		
N(States)	50		50		50		50		

Note: IRR=Incidence Rate Ratio; * p<.05, ** p<.01, *** p<.005; two-tailed test; ICC=Intraclass Correlation Coefficient

1 Incidence rate ratios reported based on results from a series of two-level negative-binomial regressions. However, the ICCs are reported based on analyses conducted on the same sub-sample (i.e., counties with 1 or more of each dependent variable) using a series of multi-level ordinary least squares (OLS) regressions on the rate of each DV (i.e., DV divided by the total population multiplied times 10,000). Null models using OLS can be found in Appendix Table A.3.

Null/Unconditional Models

Tables 3.3a and 3.3b present the null, or unconditional, models for both the logistic (Table 3.3a) and negative binomial regressions (Table 3.3b). To reiterate, the logistic models include all U.S. counties ($n=3131$) and the sample size is consistent across all models. The negative binomial models differ in their sample size based on the dependent variable as these models only focus on counties that had at least one reported homicide (which varies for each dependent variable).

In this section, I only report the variance components to contextualize the variation in homicides based on county and state-level contexts. For the logistic models (Table 3.3a), there is significant evidence that the variation in the odds of a reported homicide varies between states for the overall homicide (Coef=1.82, $se=0.45$, $p<.001$), firearm-related homicides (Coef=1.48, $SE=0.36$, $p<.001$), handgun-related homicides (Coef=1.32, $SE=0.32$, $p<.001$), and long gun-related homicides (Coef=1.32, $SE=0.32$, $p<.001$). Moreover, state-level contexts seem to explain a moderate proportion of the variance for each of the dependent variables (i.e., ICC). Approximately 36% of the variance is attributable to states for the probability an overall homicide is reported, 31% of the variance for firearm-related homicides, 29% of the variance for handgun-related homicides, and 19% of the variance of long gun-related homicides. While states seem to account for about a third of the variance across all the binary dependent variables (excluding long gun-related homicides), state-level contexts seem to explain less of the variance in the number of reported homicides.

Based on the negative-binomial models (Table 3.3b), there is significant evidence that states vary in the number of homicides for overall homicides (Coef=0.73, $SE=0.17$,

$p < .001$), firearm-related homicides (Coef=0.71, SE=0.17, $p < .001$), handgun-related homicides (Coef=0.76, SE=0.19, $p < .001$), and long gun-related homicides (Coef=0.12, SE=0.04, $p < .001$). The proportion of the variance explained by state-level contexts is lower compared to the binary models (i.e., ICC). For each of the dependent variables, states account for 11% of the variation in the number of reported overall homicides, 7% of the variance for firearm-related homicides, 9% of handgun-related homicides, and 12% of the variance for long gun-related homicides. Overall, the results presented here indicate states – across all focal outcomes – can explain some variation in homicide patterns. However, the majority of the variance is explained by, in this case, county-level contexts – confirming insights from criminological research (Bailey 1984; Messner 1983; Messner and Rosenfeld 1986; Shaw and McKay 1942) and limited gun policy scholarship (Aneja, Donohue, and Zhang 2014; RAND 2018).

Multi-Variable Models

In this section, I discuss the results from the two-level multi-variable logistic and negative binomial regressions. To keep results organized, I report each dependent variable separately. Thus, results are reported in the following order: overall homicide, firearm-related homicide, handgun-related homicide, and long gun-related homicide. A summary of results table can be found at the end of this section (Table 3.8).⁵²

⁵² Analyses were also conducted examining the effect of the four focal gun policies without any of the predictors in the model. Collectively, these results (Appendix Tables A.15 and A.16) indicate these policies had no association with homicides prior to the introduction of the socio-criminological and other confounding factors.

Table 3.5: Two-Level Logistic and Negative Binomial Regressions Results – Effect of Socio-Criminological Factors and Gun Policies on Overall Homicides

	Binary Long Gun Homicide (0/1)			Number of Long Gun Homicides (>=1)		
	Model 1	Model 2	Model 3	Model 4 ₁	Model 5 ₁	Model 6 ₁
	OR	OR	OR	IRR	IRR	IRR
Level 1 (County)						
Measures						
Federal Firearm Licensees ₂	1.002	1.002	1.002	1.003	1.002	1.003
% Rural	0.779	0.791	0.779	1.051	1.041	1.059
Geographic Mobility	1.028	1.027	1.027	1.027 ***	1.028 ***	1.027 ***
% Black	1.026	1.032	1.028	1.406 ***	1.404 ***	1.408 ***
% Foreign Born	1.000	1.000	1.000	1.005	1.005	1.005
% Poverty	1.049 **	1.049 **	1.049 **	1.015 **	1.015 **	1.015 **
% Unemployed	0.986	0.987	0.987	1.004	1.004	1.004
Median Age	1.033	1.035	1.034	0.999	0.999	0.999
% BA or more	1.012	1.011	1.011	0.984 ***	0.984 ***	0.983 ***
% Married	0.976	0.976	0.976	0.965 ***	0.965 ***	0.965 ***
% 12-24	0.987	0.988	0.988	0.953 ***	0.953 ***	0.953 ***
Mainline Protestant Rate ₂	0.999	0.999	0.999	0.999	0.999	0.999
Decomposed Crime Rate ₂	1.000 **	1.000 **	1.000 **	1.000 ***	1.000 ***	1.000 ***
Neighbor County Firearm Homicide Binary Firearm Homicide Probability	0.998	0.998	0.998	1.000	1.000	1.000
				0.207 ***	0.207 ***	0.210 ***
Level 2 (State)						
Measures						
Federal Firearm Licensees ₃	1.039	1.129	1.167	1.004	0.996	1.006
% Rural ₃	0.639	0.155	1.058	0.954	0.794	0.935
Geographic Mobility ₃	1.649	2.786 *	2.405 *	1.010	1.016	1.026

% Black 3	0.003	*	0.001	**	0.001	*	0.639		0.754		0.636	
% Foreign Born 3	0.996		0.811		0.779		1.038		1.054		1.038	
% Poverty 3	1.029		1.033		1.031		1.015		1.015		1.018	
% Unemployed 3	0.686		0.601		0.714		1.019		1.015		1.030	
Median Age 3	1.066		1.209		1.250		1.000		1.010		1.029	
% BA or more 3	0.909		1.069		0.971		0.995		0.995		0.996	
% Married 3	0.694	*	0.674	**	0.684	*	0.916	***	0.922	***	0.918	***
% 12-24 3	0.303		0.552		0.549		0.862	*	0.868	*	0.913	
Mainline Protestant Rate 3	0.990		0.991		0.991		1.001		1.001		1.001	
Decomposed Crime Rate 3	1.001		1.001	*	1.001	*	1.000	**	1.000		1.000	*
Neighbor County Homicide 3	1.032		1.043	*	1.034		1.004		1.003		1.003	
South	2.278		4.973		3.798		1.432	**	1.401	**	1.421	**
NRA Journal Subscriptions 4	0.102	***	0.049	***	0.088	***	0.806	**	0.791	**	0.806	**
% Republican Legislators	1.053		1.041		1.069	*	1.014	***	1.013	**	1.016	***
Hunting Licenses 4	1.804		3.679	*	2.071		1.112		1.136		1.109	
Suicide Rate 4	0.701	*	0.603	***	0.633	**	0.995		1.004		0.998	
CCW Diffusion	0.988		0.989		0.984	*	1.000		1.000		0.999	
SYG Diffusion	1.006		1.017		1.003		1.001		1.002		1.001	
CAP Diffusion	0.982	*	0.983	*	0.988		0.998	*	0.998		0.998	
UBC Diffusion	0.975		0.992		0.985		0.999		0.998		0.998	
Gun Policy Measures												
CCW Law			7.419						0.886			
SYG Law			3.160						1.136			
CAP Law			2.302						0.982			
UBC Law			0.417						0.998			
Time since CCW Adoption					0.988						0.992	

Time since SYG Adoption				0.984						1.002
Time since CAP Adoption				1.056						1.002
Time since UBC Adoption				0.955						0.996
Variance(State)	4.888 ***	3.444 ***	4.040 ***	1.020 **	1.018 **	1.018 **				
ICC ₅	0.325	0.273	0.298	0.114	0.102	0.105				
N	2999	2999	2999	2039	2039	2039				
AIC	2243.5	2242.209	2246.735	10635.25	10641.23	10638.84				
BIC	2477.736	2500.468	2504.995	10865.68	10894.14	10891.75				

Note: OR=Odds Ratio; IRR=Incidence Rate Ratio; * p<.05, ** p<.01, *** p<.001, two-tailed test; ICC=Intraclass Correlation Coefficient

¹ Model includes the logistic predicted probabilities to better reflect a zero-inflated negative-binomial regression modeling approach.

² Variable is measured per 10,000 residents.

³ Variable is the state-level average of all counties within a state.

⁴ Variable is measured per 100,000 residents

⁵ ICCs for Models 4-6 are calculated using a series of two-level ordinary least squares regressions on the homicide rate (number of homicides per 10,000 county residents).

Overall Homicide Results

Table 3.4 reports the results from the analyses for the dependent variables of at least one reported homicide (binary/logistic) and the number of homicides (count/negative-binomial). First, I report the results from the logistic regressions (Models 1-3).

Model 1 focuses on the socio-criminological and other correlates of homicide without including any of the policy-related measures. Given my interest in understanding whether firearm-related policies explain homicide patterns above county-level correlates, this model provides a baseline for comparison to the models that include the state-level policy measures. To avoid repetition, I only report the results for the controls from the baseline model as the results are substantively similar across the models including the policy-related measures.

According to Model 1, counties with a higher percentage of the population that fell below the 2015 poverty line within a given state (OR=1.049, $p<.01$) and counties within a given state with a higher decomposed crime rate (OR=1.000, $p<.01$) are associated with higher odds of a homicide reported in a given county. As for the state-level controls, the percent of the state-level population that is Black (OR=0.003, $p<.001$), the percent of the state-level population that is married (OR=0.694, $p<.01$), the number of NRA journal subscriptions (0.102, $p<.001$), the state-level suicide rate (OR=0.701, $p<.01$), and the number of neighboring states that have adopted a CAP policy (OR=0.982, $p<.05$) are associated with lower odds of a county having a reported homicide. To note, there is no evidence in the baseline model that the decomposed crime rate was significantly associated. However, once accounting for state-level gun policy dynamics

(Models 2 and 3), the decomposed county-level crime rate is associated with higher (OR=1.001, $p<.001$) odds that a county in a given state will report a homicide.

Now, I turn to examine the extent to whether the four focal gun policies provide any additional explanation in the odds a county will report a homicide. Interestingly, there is no evidence to support an association between when a state has adopted any of the focal policies (CCW, SYG, CAP, UBC) and the probability that county had a reported homicide ($p>.05$). Similarly, the timing since passage of all four focal policies does not seem to have any statistical association on the probability of at least one reported homicide. Having discussed the binary results, I now turn to the negative-binomial results. These analyses provide insight into whether these socio-criminological factors and gun policies may better explain variation in homicide counts compared to just whether a homicide is reported – a more common approach in criminological research (Chamlin and Cochran 2006; Messner and Rosenfeld 1997; Siegel, Ross, and King III 2013).

Model 4 reports the baseline model only including the socio-criminological controls. Models 5 and 6 incorporate the firearm policy measures to better understand whether gun policies explain homicide variation beyond well-established correlates. To restate, these models only include counties that reported at least a single homicide between 2014 and 2016 and includes an additional measure to account for the predicted probability that a county had a reported homicide (Q_{ij}). According to Model 4, multiple county-level measures in line with social disorganization hypotheses are significant in theoretically expected ways (Shaw and McKay 1942). In any given state, counties with higher levels of the percent of the population that is Black (IRR=1.027, $p<.001$),

geographic mobility (IRR=1.406, $p<.001$), the percentage of the county-level population below the 2015 federal poverty line (IRR=1.015, $p<.01$), and the 2015 decomposed crime rate (IRR=1.00, $p<.001$) have, on average, *more* homicides. Additionally, in any given state, counties with a higher percentage of the county population with a Bachelor's degree or higher (IRR=0.984, $p<.001$), percentage of the county population that is married (IRR=0.965, $p<.001$), and the percentage of the population aged 12 to 24 (IRR=0.953, $p<.001$) are associated with having, on average, *fewer* reported homicides.

As for the state-level indicators, states with a higher percentage of married residents in a state (IRR=0.918, $p<.001$) and a higher rate of state-level NRA journal subscriptions (IRR=0.806, $p<.01$) have fewer county-level homicides. Conversely, states located in the Southern Census region (IRR=1.432, $p<.01$) and states with higher percentages of state-level Republican legislators (IRR=1.014, $p<.001$) have more reported county-level homicides, on average. Although CAP diffusion was associated with a decrease (IRR=0.998, $p<.05$) in the number of reported homicides, this association falls below traditional levels of significant ($p>.05$) after including the state's firearm policy variables (Models 5 and 6).

Similar to the logistic results, there is no evidence to support the hypothesis that the presence of the four focal firearm-related policies or the timing since the adoption of these policies is associated with the number of reported homicides. Overall, there is no evidence that firearm-related policies (CCW, SYG, CAP, UBC) explain variation in homicides – either their occurrence (logistic) or the number of homicides (negative-binomial) – beyond community-level socio-criminological dynamics. Confirming insights on the importance of geographically nuanced approaches to crime and violence

(Messner 1982) and in line with insights from Wenger (2019a, 2019b), variation in socio-criminological factors across states systematically matter less than variation in community-level factors within states.

Table 3.6: Two-Level Logistic and Negative Binomial Regressions Results - Criminological Factors and Gun Policies on Firearm Homicides

	Binary Long Gun Homicide (0/1)			Number of Long Gun Homicides (>=1)		
	Model 1	Model 2	Model 3	Model 4 ₁	Model 5 ₁	Model 6 ₁
	OR	OR	OR	IRR	IRR	IRR
Level 1 (County)						
Measures						
Federal Firearm Licensees ₂	0.989	0.990	0.990	1.000	1.000	1.000
% Rural Geographic	0.901	0.910	0.904	1.117	1.110	1.127
Mobility	1.036	1.035	1.035	1.036 ***	1.036 ***	1.035 ***
% Black	1.426	1.433	1.429	1.588 ***	1.589 ***	1.589 ***
% Foreign Born	1.000	1.000	1.000	1.010	1.010	1.010
% Poverty	1.015	1.016	1.016	1.016 *	1.016 *	1.016 *
% Unemployed	1.011	1.012	1.012	1.002	1.002	1.002
Median Age	1.016	1.017	1.017	1.000	0.999	0.999
% BA or more	0.977	0.977	0.977	0.984 **	0.984 **	0.984 **
% Married	0.984	0.985	0.984	0.956 ***	0.956 ***	0.956 ***
% 12-24	0.985	0.985	0.985	0.942 ***	0.942 ***	0.942 ***
Mainline Protestant Rate ₂	0.998	0.998	0.998	1.000	1.000	1.000
Decomposed Crime Rate ₂	1.000 **	1.000 **	1.000 **	1.000 ***	1.000 ***	1.000 ***
Neighbor County Firearm Homicide	0.997	0.997	0.997	1.001	1.001	1.001
Level 2(State)						
Measures						
Federal Firearm Licensees ₃	1.031	1.152	1.130	1.000	1.001	1.012
% Rural ₃	0.453	0.269	0.559	1.274	1.154	1.490
Geographic Mobility ₃	1.359	1.986 *	1.915	1.028	1.066	1.063
% Black ₃	0.007 *	0.001 **	0.001 **	0.809	0.846	0.659

% Foreign Born 3	1.143	0.926	0.932	1.063	1.061	1.036
% Poverty 3	1.102	1.129	1.129	1.015	1.018	1.022
% Unemployed 3	0.774	0.786	0.851	1.003	0.987	1.011
Median Age 3	1.009	1.146	1.226	1.004	1.015	1.026
% BA or more 3	0.910	1.013	0.979	0.996	1.003	1.003
% Married 3	0.769	0.732 *	0.757 *	0.905 ***	0.904 ***	0.904 ***
% 12-24 3	0.364	0.597	0.647	0.868	0.885	0.933
Mainline Protestant Rate 3	0.995	0.996	0.996	1.001	1.001	1.001
Decomposed Crime Rate 3	1.001	1.001 *	1.001 *	1.000	1.000	1.000 *
Neighbor County Homicide	1.055 *	1.063 *	1.051 *	1.008 *	1.009	1.008
South	3.088	4.889 *	4.491	1.554 ***	1.568 ***	1.569 ***
NRA Journal Subscriptions 4	0.086 ***	0.054 ***	0.079 ***	0.771 **	0.738 **	0.773 **
% Republican Legislators	1.053 *	1.066 *	1.080 **	1.016 ***	1.015 **	1.020 ***
Hunting Licenses 4	2.488	3.897 **	2.682 *	1.134	1.181	1.127
Suicide Rate 4	0.716 **	0.633 ***	0.670 **	0.997	0.995	0.990
CCW Diffusion	0.997	0.997	0.991	1.001	1.001	1.000
SYG Diffusion	1.006	1.009	1.003	1.001	1.001	1.000
CAP Diffusion	0.981 **	0.984 *	0.985	0.998	0.999	0.999
UBC Diffusion	0.984	0.996	0.990	0.998	0.999	0.999
Gun Policy Measures						
CCW Law		1.752			1.050	
SYG Law		1.236			1.120	
CAP Law		3.232			1.106	
UBC Law		0.397			1.011	
Time since CCW Adoption			0.960			0.994
Time since SYG Adoption			0.984			0.994

Time since CAP Adoption				1.051					1.008			
Time since UBC Adoption				0.952	*				0.995			
Variance(State)	3.233	***	2.582	***	2.589	***	1.023	**	1.021	**	1.020	**
ICC ₅	0.268		0.229		0.229		0.088		0.084		0.085	
N	2999		2999		2999		1728		1728		1728	
AIC	2571.467		2571.409		2571.059		8686.766		8692.174		8688.753	
BIC	2805.703		2829.668		2829.319		8910.409		8937.637		8934.216	

Note: OR=Odds Ratio; IRR=Incidence Rate Ratio; * p<.05, ** p<.01, *** p<.001, two-tailed test; ICC=Intraclass Correlation Coefficient

¹ Model includes the logistic predicted probabilities to better reflect a zero-inflated negative-binomial regression modeling approach.

² Variable is measured per 10,000 residents.

³ Variable is the state-level average of all counties within a state.

⁴ Variable is measured per 100,000 residents

⁵ ICCs for Models 4-6 are calculated using a series of two-level ordinary least squares regressions on the Firearm Homicide Rate.

Firearm-Related Homicide Results

Table 3.5 reports results from a series of logistic (Models 1-3) and negative binomial (Models 4-6) regressions. Following the previous convention of reporting results, I discuss the logistic regression results first and then turn to discuss the negative binomial analyses for counties that reported one or more firearm-related homicide between 2014 and 2016.

Model 1 provides the baseline model that includes all socio-criminological and other confounding variables. To conserve space and avoid repetition, I report results from these factors using only the baseline model as the results do not substantively change after including the policy-related measures. Results from Model 1 indicate only one of the county-level variables are associated with whether a firearm-related homicide is reported in a given county in a given state: the decomposed crime rate (OR=1.000, $p < .01$).

Turning now to the state-level factors, the percent of the state population that is married (OR=0.732, $p < .05$) is associated with a decrease in the odds a county will report a firearm-related homicide after including firearm-related policy measures. In contrast, the hunting license rate (OR=3.897, $p < .01$) is positively associated with the odds a county will report a firearm-related homicide, but only after including the policy-related measures.

Model 2 reports how the presence of a policy (0/1) is associated with the odds a county will have a reported firearm-related homicide and Model 3 demonstrates how time since passage of each policy is associated with the odds a county will have a reported firearm-related homicide. There is no evidence to support the hypothesis that ($p > .05$) the adoption of any of the focal policies – CCW, SYG, CAP, UBC – is associated with the

probability that a firearm-related homicide will be reported in a county. Similarly, timing of policy adoption for three of the four policies (CCW, SYG, CAP) is not associated ($p > .05$) with the probability of a reported firearm-related homicide. However, the time since a UBC policy was adopted is negatively associated with the odds a county will report a firearm-related homicide ($OR = 0.952$, $p < .05$). Having now discussed the logistic regression results, I now turn to discuss how these dynamics are associated with the number of reported firearm-related homicides in a county that reports at least one firearm-related homicide.

According to Model 4, the following county-level factors are associated with an increase in the number of firearm-related homicides within a state: geographic mobility ($IRR = 1.036$, $p < .001$), percent of residents that are Black ($IRR = 1.589$, $p < .001$), percent of residents that fell below the 2015 federal poverty line ($IRR = 1.016$, $p < .05$), and the decomposed crime rate ($IRR = 1.00$, $p < .001$). In a similar vein, the following county-level factors are associated with a decrease in the number of reported firearm-related homicides within a state: percent of residents with a Bachelor's degree or higher ($IRR = 0.984$, $p < .01$), percent of the population that is married ($IRR = 0.956$, $p < .001$), and the percent of the population aged 12-24 ($IRR = 0.942$, $p < .001$). As for the state-level dynamics, the following state-level measures have a positive association: being located in the Southern Census region ($IRR = 1.554$, $p < .001$) and the percentage of state-level Republican legislators ($IRR = 1.016$, $p < .001$). Conversely, the following are associated with a decrease in the number of reported firearm-related homicides: the percentage of state residents that are married ($IRR = 0.905$, $p < .001$) and NRA journal subscriptions ($IRR = 0.771$, $p < .01$).

Having discussed the associations between the socio-criminological factors and other confounding variables, Models 5 and 6 report the results regarding whether firearm-related policies are associated with firearm-related homicides above and beyond the identified confounding factors. There is no evidence to support the hypothesis that the adoption of any of the four focal policies (CCW, SYG, CAP, UBC) is associated with the number of reported firearm-related homicides. Similarly, there is no evidence to support the hypothesis that the time since adoption of any gun policy is associated ($p > .05$) with the number of firearm-related homicides.

Collectively, these results indicate no statistical evidence that policy-related dynamics explain variation in homicides beyond county-level factors within a state; furthermore, these county-level dynamics are more predictive factors of firearm-related homicides. Additionally, county-level contexts within a state better explain variation in the number of reported homicides, once again lending support to the importance of localized approaches to homicide studies (Bailey 1984; Messner 1983; Wenger 2019a, 2019b).

Table 3.7: Two-Level Logistic and Negative Binomial Regressions Results - Criminological Factors and Gun Policies on Handgun Homicides

	Binary Handgun Homicide (0/1)			Number of Handgun Homicides (>=1)		
	Model 1	Model 2	Model 3	Model 4 ₁	Model 5 ₁	Model 6 ₁
	OR	OR	OR	IRR	IRR	IRR
Level 1						
(County)						
Measures						
Federal Firearm						
Licensees ₂	0.985	0.985	0.985	1.005	1.005	1.005
% Rural	0.558	0.565	0.562	0.938	0.936	0.959
Geographic						
Mobility	1.056 *	1.056 *	1.055 *	1.040 ***	1.040 ***	1.039 **
% Black	1.871 **	1.877 **	1.872 **	1.570 ***	1.571 ***	1.564 ***
% Foreign Born	0.986	0.985	0.986	1.006	1.005	1.005
% Poverty	1.012	1.013	1.013	1.012	1.012	1.012
% Unemployed	0.998	0.999	0.998	1.012	1.012	1.012
Median Age	1.023	1.023	1.023	0.994	0.993	0.993
% BA or more	0.968 *	0.968 *	0.968 *	0.985 *	0.985 *	0.985 *
% Married	0.985	0.985	0.985	0.955 ***	0.955 ***	0.954 ***
% 12-24	0.974	0.974	0.974	0.934 ***	0.934 ***	0.935 ***
Mainline						
Protestant Rate ₂	0.998 *	0.998 *	0.998 *	1.000	1.000	1.000
Decomposed						
Crime Rate ₂	1.000 ***	1.000 ***	1.000 ***	1.000 ***	1.000 ***	1.000 ***
Neighbor County						
Handgun						
Homicide	0.997	0.997	0.997	1.002 **	1.002 **	1.002 **
Level 2(State)						
Measures						
Federal Firearm						
Licensees ₃	1.016	1.101	1.084	1.002	1.006	1.027
% Rural ₃	0.074	0.048	0.116	1.173	1.065	1.905
Geographic						
Mobility ₃	1.098	1.411	1.369	0.998	1.029	1.027
% Black ₃	0.036	0.010 *	0.011 *	0.835	0.857	0.458

% Foreign Born ³	1.155	1.008	0.988	1.009	1.003	0.943
% Poverty ³	1.143	1.173	1.161	1.046	1.051	1.059
% Unemployed ³	0.796	0.789	0.872	0.998	0.989	1.010
Median Age ³	1.111	1.166	1.265	0.989	1.007	0.988
% BA or more ³	0.907	1.003	0.953	1.006	1.010	1.021
% Married ³	0.839	0.800 *	0.834	0.933 *	0.934 *	0.929 *
% 12-24 ³	0.441	0.596	0.673	0.839	0.865	0.900
Mainline Protestant Rate ³	0.994	0.994	0.994	1.001	1.001	1.000
Decomposed Crime Rate ³	1.000	1.001 *	1.001 *	1.000 *	1.000 *	1.000 **
Neighbor County Homicide ³	1.067 *	1.081 **	1.063 *	1.020 ***	1.020 **	1.025 ***
South NRA Journal Subscriptions ⁴	2.342	3.575	3.009	1.471 **	1.444 *	1.507 **
% Republican Legislators	0.130 ***	0.098 ***	0.128 ***	0.836	0.807	0.856
Hunting Licenses ⁴	1.059 **	1.063 **	1.080 ***	1.015 **	1.016 **	1.020 ***
Suicide Rate ⁴	1.735	2.292 *	1.756	1.073	1.110	1.044
CCW Diffusion	0.782 *	0.710 **	0.749 *	0.985	0.983	0.960
SYG Diffusion	1.000	1.001	0.995	1.002	1.002	1.000
CAP Diffusion	1.003	1.004	0.999	0.999	1.000	0.997
UBC Diffusion	0.981 ***	0.982 **	0.983 *	0.997 *	0.998	0.998
UBC Diffusion	0.983	0.993	0.986	0.999	1.000	1.000
Gun Policy Measures						
CCW Law		3.455			0.942	
SYG Law		1.098			1.074	
CAP Law		1.970			1.157	
UBC Law		0.710			0.975	
Time since CCW Adoption			0.966			0.998
Time since SYG Adoption			0.973			0.974

Time since CAP Adoption				1.036					1.013 *
Time since UBC Adoption				0.966					0.993
Variance(State)	2.292 ***	2.001 **	2.014 ***	1.026 *	1.023 *	1.020 *			
ICC ₅	0.210	0.180	0.183	0.072	0.065	0.069			
N	2999	2999	2999	1462	1462	1462			
AIC	2594.802	2597.306	2596.615	7073.950	7073.950	7068.789			
BIC	2829.037	2855.566	2854.875	7311.890	7311.890	7306.729			

Note: OR=Odds Ratio; IRR=Incidence Rate Ratio; * p<.05, ** p<.01, *** p<.00; ICC=Intraclass Correlation Coefficient

¹ Model includes the logistic predicted probabilities to better reflect a zero-inflated negative-binomial regression modeling approach.

² Variable is measured per 10,000 residents.

³ Variable is the state-level average of all counties within a state.

⁴ Variable is measured per 100,000 residents

⁵ ICCs for Models 4-6 are calculated using a series of two-level ordinary least squares regressions on the Handgun Homicide Rate.

Handgun-Related Homicide Results

Table 3.6 provides the results from a series of logistic (Models 1-3) and negative-binomial (Models 4-6) regressions on handgun-related homicides. I follow the same reporting convention as the previous two dependent variables.

The following county-level factors within a given state are positively associated with the probability a county will reportedly have at least one handgun-related homicide: geographic mobility (OR=1.056, $p<.05$), percentage of the population that is Black (OR=1.871, $p<.01$), and the decomposed crime rate (OR=1.000, $p<.001$). Furthermore, the percentage of residents with a Bachelor's degree or higher (OR=0.968, $p<.05$) and the Mainline Protestant Rate (OR=0.998, $p<.05$) are associated with a decrease in the probability a county will report at least one handgun-related homicides. As for the state-level factors, the following state-level factors are consistently associated with the probability a county is reported to have a handgun-related homicide: the state-level average of all counties' neighboring counties average number of handgun-related homicides (OR=1.067, $p<.05$) and the percentage of state-level Republican legislators (OR=1.059, $p<.01$). Additionally, the following state-level factors are negatively associated: NRA journal subscriptions (OR=0.130, $p<.001$), the state-level suicide rate (OR=0.782, $p<.05$), and the percentage of neighboring states that have adopted a CAP policy (OR=0.981, $p<.001$). Although the state-level decomposed crime rate was not significant in the baseline model, after controlling for policy-related dynamics (Models 2 and 3) there is evidence to support the decomposed county-level crime rate is positively associated with county-level odds of reporting a handgun-related homicide.

Turning now to Models 2 and 3, I report the results about whether firearm-related policies explain handgun-related homicide occurrence beyond these confounding associations. Interestingly, there is no evidence ($p > .05$) to support the hypothesis that when states adopt any of the focal firearm-related policies (CCW, SYG, CAP, UBC) there is an association with handgun-related homicide occurrence. In a similar vein, how long a policy has been in place – regardless of the policy – is not associated ($p > .05$) with the occurrence of a handgun-related homicide in a county. Having now discussed the logistic regression results, I now turn to discuss how these dynamics are associated with the number of reported handgun-related homicides.

According to Model 4, within a state, the following county-level factors are positively associated with the number of handgun-related homicide reported: geographic mobility (IRR=1.040, $p < .001$), the percentage of residents that are Black (IRR=1.570, $p < .001$), the decomposed crime rate (IRR=1.000, $p < .001$), and the average number of handgun-related homicides reported in neighboring counties (IRR=1.002, $p < .01$). Conversely, the following county-level measures are negatively associated with the number of reported handgun-related homicides: percentage of residents with a Bachelor's degree or higher (IRR=0.985, $p < .05$), percent of residents that are married (IRR=0.934, $p < .001$), and the percentage of residents aged 12-24 (IRR=0.934, $p < .001$).

The following state-level measures are positively associated with the number of reported handgun-related homicides: the state-level decomposed crime rate (IRR=1.000, $p < .05$), the state-level average of all counties' surrounding counties average number of handgun-related homicides (IRR=1.020, $p < .001$, and being located in the Southern Census region (IRR=1.471, $p < .01$). As for the state-level measures negatively associated

with the number of reported handgun-related homicides, only the percentage of the population that reported they were married (IRR=0.933, $p<.05$) is significant. Although the rate of surrounding states with a CAP policy was originally negatively associated (IRR=0.997, $p<.05$), it is no longer significant after accounting for policy-related dynamics.

Models 5 and 6 examine whether CCW, SYG, CAP, and UBC policies provide any additional explanation to handgun-related homicides. As for the presence of the four focal policies, there is no statistical evidence ($p>.05$) to support the hypothesis that they have any association with handgun-related homicides. As for time since passage, there is no evidence ($p>.05$) to support the length of time a CCW, SYG, or UBC policy is associated with the number of reported handgun-related homicides. However, the longer a state has had a CAP policy in place is associated with an increase (IRR=1.013, $p<.05$) in the number of handgun-related homicides.

Other than the time since CAP policy adoption finding, these results provide little evidence that policy-related dynamics provide any additional explanation of handgun-related homicides and reinforce the robustness of localized social disorganization. County-level socio-criminological factors and other state-level dynamics better explain variation in the number of reported handgun-related homicides, once again lending support to the importance of localized approaches to homicide studies and robustness of social disorganization theory (Shaw and McKay 1942). To explore whether policies and socio-criminological dynamics may shape homicides differently based on another firearm-type, I now discuss results on long gun-related homicides.

Long Gun-Related Homicide Results

Table 3.7 provides the results from a series of logistic (Models 1-3) and negative-binomial (Models 4-6) regressions on long gun-related homicides. I follow the same reporting convention as the previous three dependent variables.

Model 1 reports the baseline logistic model, which only includes the socio-criminological and other policy-related control measures. Models 2 and 3 incorporate the policy-related measures to understand the extent to which these policies explain the reporting of at least one long gun-related homicide above and beyond well-established correlates. Results are reported from Model 1 for the controls as these do not substantively vary across Models 1 through 3.

Table 3.8: Two-Level Logistic and Negative Binomial Regressions Results - Criminological Factors and Gun Policies on Long Gun Homicides

	Binary Long Gun Homicide (0/1)			Number of Long Gun Homicides (>=1)		
	Model 1	Model 2	Model 3	Model 4 ₁	Model 5 ₁	Model 6 ₁
	OR	OR	OR	IRR	IRR	IRR
Level 1						
(County)						
Measures						
Federal Firearm						
Licensees ₂	0.998	0.998	0.998	1.001	1.000	1.000
% Rural	1.767	1.789	1.791	3.702 ***	3.546 ***	3.755 ***
Geographic						
Mobility	1.023	1.023	1.023	1.044 **	1.045 **	1.044 **
% Black	1.079	1.080	1.077	1.318 *	1.299	1.325 *
% Foreign Born	0.965	0.964	0.964	0.980	0.983	0.981
% Poverty	1.037 *	1.036 *	1.037 *	1.034 **	1.033 **	1.034 **
% Unemployed	0.966	0.965	0.965	0.958 *	0.962 *	0.958 *
Median Age	1.007	1.007	1.007	0.980	0.979	0.980
% BA or more	0.999	0.999	0.999	0.993	0.994	0.994
% Married	0.982	0.982	0.982	0.985	0.985	0.985
% 12-24	0.982	0.981	0.982	0.948 ***	0.949 **	0.949 **
Mainline						
Protestant Rate						
₂	0.999	0.999	0.999	1.001	1.001	1.001
Decomposed						
Crime Rate ₂	1.000 **	1.000 **	1.000 **	1.000 **	1.000 *	1.000 *
Neighbor						
County Long						
Gun Homicide	1.264 ***	1.258 ***	1.262 ***	1.071 ***	1.075 ***	1.071 ***
Binary Long						
Gun Homicide						
Probability				0.560 *	0.658	0.614
Level 2(State)						
Measures						
Federal Firearm						
Licensees ₃	1.030	1.072	1.067	0.990	0.965	0.985
% Rural ₃	2.496	1.448	3.364	9.641 **	11.259 **	8.541 **

Geographic							
Mobility ³	0.978	1.128	1.042	1.025	0.966	0.998	
% Black ³	0.084	0.039 *	0.033	1.923	4.031 *	2.582	
% Foreign Born ³	1.083	1.005	0.991	0.950	1.009	0.974	
% Poverty ³	0.958	0.971	0.966	1.028	1.010	1.032	
% Unemployed ³	0.981	0.969	1.057	0.897 *	0.884 *	0.896 *	
Median Age ³	1.047	1.051	1.094	0.943	0.923 *	0.955	
% BA or more ³	0.918	0.973	0.940	1.005	0.977	0.988	
% Married ³	0.884	0.860	0.883	0.994	1.009	1.007	
% 12-24 ³	0.848	0.921	1.024	0.798 *	0.778 **	0.834	
Mainline							
Protestant Rate ³	0.995	0.996	0.995	1.000	1.000	0.999	
Decomposed							
Crime Rate ³	1.000	1.000	1.000	1.000	1.000	1.000	
Neighbor							
County							
Homicide ³	2.049 **	2.112 **	1.949 **	1.312 ***	1.337 ***	1.274 **	
South	1.700	2.119	1.810	1.072	1.005	1.014	
NRA Journal							
Subscriptions ⁴	0.211 ***	0.174 ***	0.213 ***	1.310 *	1.538 **	1.394 *	
% Republican							
Legislators	1.029	1.027	1.040 *	0.994	0.988	0.996	
Hunting							
Licenses ⁴	1.705	2.058 *	1.684	1.022	0.910	0.971	
Suicide Rate ⁴	0.857	0.801 *	0.824 *	1.040	1.091 *	1.065	
CCW Diffusion	0.997	0.997	0.994	1.001	1.002	1.001	
SYG Diffusion	1.006	1.008	1.004	0.998 *	0.997	0.997	
CAP Diffusion	0.990 *	0.990	0.991	0.998	0.999	0.998	
UBC Diffusion	0.986	0.991	0.985	1.000	1.001	1.000	
Gun Policy							
Measures							
CCW Law		2.080			1.286		
SYG Law		1.197			0.930		

CAP Law		1.393			0.903		
UBC Law		0.785			1.386	*	
Time since CCW Adoption			0.985				0.994
Time since SYG Adoption			0.974				0.992
Time since CAP Adoption			1.015				1.001
Time since UBC Adoption			0.977				1.002
Variance(State)	1.599	**	1.514	**	1.528	**	1.000
ICC ⁵	0.158		0.136		0.141		0.145
N	2999		2999		2999		764
AIC	2593.613		2598.332		2598.871		2479.432
BIC	2827.848		2856.592		2857.130		2683.529

Note: OR=Odds Ratio; IRR=Incidence Rate Ratio; * p<.05, ** p<.01, *** p<.001, two-tailed test; ICC=Intraclass Correlation Coefficient

¹ Model includes the logistic predicted probabilities to better reflect a zero-inflated negative-binomial regression modeling approach.

² Variable is measured per 10,000 residents.

³ Variable is the state-level average of all counties within a state.

⁴ Variable is measured per 100,000 residents

⁵ ICCs for Models 4-6 are calculated using a series of two-level ordinary least squares regressions on the Handgun Homicide Rate.

Although none of the county-level measures are negatively associated with the probability that a county will have a reported long gun-related homicide, within a given state, the following county-level measures are positively associated with long gun-related homicide occurrence: the percent of residents that fell below the 2015 poverty line (OR=1.037, $p<.05$), the decomposed crime rate (OR=1.000, $p<.001$), and the average number of long gun-related homicides in surrounding counties (OR=1.264, $p<.001$). As for the state-level measures, only two measures are found to consistently predict the probability that a county will have a long-gun related homicide. First, the average of all counties within a given state's (i.e., state-level average) long gun-related homicides is positively associated with having a long-gun related homicide in the county (OR=2.049, $p<.01$). Conversely, the number of NRA journal subscriptions (per 100,000 residents) in the state is negatively associated (OR=0.211, $p<.001$) with the probability a county will have a reported long gun-related homicide. Although not significant in Model 1, after including the policy-related measures (Models 2 and 3), the state-level suicide rate is negatively associated (OR=0.802, $p<.05$) with the odds of a reported long gun-related homicide.

Models 2 and 3 incorporate the policy-related measures to explore whether firearm-related policies impact the odds of a long gun-related homicide beyond the controls. Similar to the three previous dependent variables, there is no statistical evidence ($p>.05$) to support the hypothesis that the presence (Model 2) or the time since policy passage (Model 3) of any of the focal policies (CCW, SYG, CAP, UBC) are associated with long gun-related homicide occurrence. Having now discussed the logistic regression

results, I now turn to discuss how these dynamics are associated with the number of reported handgun-related homicides.

Based on results presented in Model 4, the following county-level dynamics are positively associated with the number of long gun-related homicides within a state: rurality (IRR=3.702, $p<.001$), geographic mobility (IRR=1.044, $p<.01$), the percentage of residents that are Black (IRR=1.318, $p<.05$), percent of residents that fell below the 2015 federal poverty line (IRR=1.034, $p<.01$), the decomposed crime rate (IRR=1.000, $p<.01$), and the average number of long gun-related homicides in neighboring counties (IRR=1.071, $p<.001$). As for negatively related factors, the following indicated a negative association with the number of reported long gun-related homicides: the percent unemployed (IRR=0.958, $p<.05$) and the percentage of the population aged 12 to 24 (IRR=0.948, $p<.001$).

As for state-level dynamics associated with long gun-related homicide, only the percentage of state residents that are unemployed (IRR=0.897, $p<.01$) and the percentage of residents aged 12-24 (IRR=0.798, $p<.05$) are negatively associated with the number of long gun-related homicides reported. Conversely, the following state-level measures are positively associated with the number of reported long gun-related homicides: rurality (IRR=9.641, $p<.01$), the state-level average of all counties' neighboring counties average number of long gun-related homicides (IRR=1.312, $p<.001$) and NRA journal subscription rates (IRR=1.310, $p<.05$). Although SYG diffusion was negatively associated in the baseline model (IRR=0.998, $p<.05$), there is no statistical evidence ($p>.05$) that the percentage of surrounding states that have adopted an SYG policy is

associated with the number of reported long gun-related homicides after including the gun policy measures (Models 5 and 6).

Models 5 and 6 incorporate the policy-related measures to better understand the extent to which firearm-related policies provide an additional explanation of the number of long gun-related homicides. As for policy passage (Model 5), there is no evidence CCW, SYG, or CAP policies are associated with reported long gun-related homicides. However, states that have adopted a UBC policy have a higher (IRR=1.386, $p<.05$) number of reported long-gun related homicides. As for time since passage, there is no evidence to support the hypothesis that ($p>.05$) the length of time that any of these policies have been in place is associated with the number of reported long gun-related homicides.

Based on results presented on long gun-related homicides, only one policy seems to have a significant effect: the presence of a Universal Background Check law. There is no evidence the adoption of the other three policies (CCW, SYG, CAP) nor the time since passage of all four focal policies are associated with long gun-related homicides. Additionally, county-level factors better explain variation in the number of reported long gun-related homicides, once again lending support to the importance of localized approaches to homicide studies. To help digest all the results presented in this section, I turn now to provide a summary of the results across all four dependent variables: overall homicide, firearm-related homicide, handgun-related homicide, and long gun-related homicide.

Summary of Results

Table 3.9: Summary of Results

	Overall Homicide (0/1)	Number of Overall Homicides (>=1) ₁	Firearm-Related Homicide (0/1)	Number of Firearm-Related Homicides (>=1) ₁	Handgun-Related Homicide (0/1)	Number of Handgun-Related Homicides (>=1) ₁	Long Gun-Related Homicide (0/1)	Number of Long Gun Related-Homicides (>=1) ₁
Level 1 (County) Measures								
Federal Firearm Licensees								
% Rural								+
Geographic Mobility		+		+	+	+		+
% Black		+		+	+	+		+
% Foreign Born								
% Poverty		+		+			+	+
% Unemployed								-
Median Age								
% BA or more		-		-	-	-		
% Married		-		-	-	-		
% 12-24		-		-	-	-		-
Mainline Protestant Rate					-			
Decomposed Crime Rate	+	+	+	+	+	+	+	+
Neighbor County Homicide ₂						+	+	+
Level 2 (State) Measures								
Federal Firearm Licensees								
% Rural								+
Geographic Mobility								
% Black	-		-		-		-	

% Foreign Born							
% Poverty							
% Unemployed							-
Median Age							
% BA or more							
% Married	-	-	-	-	-	-	
% 12-24							
Mainline Protestant Rate							
Decomposed Crime Rate	+		+	+	+	+	
Neighbor County Homicide 2	+		+		+	+	+
South	+	+	+	+		+	
NRA Journal Subscriptions	-	-	-	-	-	-	+
% Republican Legislators	+	+	+	+	+	+	
Hunting Licenses	+		+		+		-
Suicide Rate	-		-		-	+	
CCW Diffusion							
SYG Diffusion							
CAP Diffusion	-		-		-		
UBC Diffusion							
Gun Policy Measures							
CCW Law							
SYG Law							
CAP Law							
UBC Law							+
Time since CCW Adoption							
Time since SYG Adoption							

Time since CAP Adoption							
Time since UBC Adoption	-		-			+	
Variance(State)	***	**	***	**	***	*	**
N	2999	2039	2999	1728	2999	1462	2999
							764

Note: “+”=Positive Association (p>.05); “-“=Negative Association (p<.05); NA=Not Applicable; * p<.05, ** p<.01, *** p<.001, two-tailed test

¹ Model includes the logistic predicted probabilities to better reflect a zero-inflated negative-binomial regression modeling approach.

² “Homicide” refers to the specific dependent variable: overall, firearm-related, handgun-related, and long gun-related

Table 3.8 provides a summary of the results of all models. Overall, there is little evidence to support the hypothesis that firearm-related policies decrease homicides beyond well-established criminological correlates. Notwithstanding a positive association between the presence of a UBC law and long gun-related homicides, there is no evidence to support the hypothesis that CCW laws, SYG laws, CAP laws, or UBC laws are associated with the number of homicides reported in any of the four outcomes. Additionally, the time since CCW adoption, time since SYG Adoption, and time since UBC adoption are not significantly associated with any of the four focal count-based outcomes. The time since CAP adoption is associated with an increase in the number of reported handgun-related homicides, but there is no evidence it is associated with overall homicides, firearm-related homicides, or long gun-related homicides. However, there remains consistent evidence across the negative-binomial results that county-level socio-criminological factors robustly explain variation in homicide patterns across firearm-type.

E. Discussion

Major Takeaways

In this chapter, I address a single broad research question: *To what extent do certain state-level firearm policies explain variation in county-level homicides above and beyond well-established county-level correlates?* Specifically, this chapter integrates socio-criminological theories of homicide by including county-level factors of social (dis)organization, thus addressing a substantive shortcoming in gun policy research. Additionally, this chapter addresses methodological limitations in previous gun policy research (Aneja, Donohue, and Zhang 2014) by applying a multi-level modeling approach rather using state-level clustered standard errors – a potential source of Type I

error. The results presented here make five major substantive and methodological contributions to gun policy scholarship:

1. Criminological and sociological theories of crime and homicide effectively explain variation in the number of reported homicides (negative-binomial) but do not adequately explain the probability that a county will have a reported homicide (logistic);
2. Social disorganization approaches consistently explain variation in the number of homicides, including firearm-, handgun-, and long gun-specific homicides;
3. Certain state-level firearm policies *do not* statistically explain variation in homicides above socio-criminological correlates;
4. State-level socio-political contexts matter in shaping county-level homicide trends, and;
5. Multi-level models allow for the accounting of omitted level bias, as well as proper standard error calculation. This provides more robust estimates of each measure's association with the number of reported homicides.

I now turn to situate each of these respective contributions within broader criminological and gun policy literatures.

First, I conducted a series of two-level logistic and negative-binomial regressions. Based on the results presented above, there is overwhelming evidence to support the argument that well-established theoretical, and empirical, socio-criminological correlates are better equipped to explain variation in the number of reported homicides reported (negative-binomial) rather than the probability that a county will have a reported homicide (logistic). The only variable that is consistent across all logistic and negative-

binomial models is the decomposed crime rate, indicating that counties with higher crime rates (excluding homicides) are more likely to have at least one homicide (across all outcomes) and to have more homicides reported (across all outcomes). Homicides are relatively rare compared to other crimes (Pridemoore 2005); therefore understanding what causes whether a community has a homicide and what explains variation in these homicide patterns are distinct and important questions.

Variables related to key structural theories of crime and deviance – such as social disorganization theory – robustly explain variation in the number of homicides among the counties that have had at least one reported homicide. There are three potential explanations for this. First, the probability of a single homicide compared to the average number of homicides are conceptually distinct and, thus, structural theories may be more attuned to explain average numbers of homicides. Second, no reported homicides could be the product of poor and/or unsystematic reporting by agencies to the FBI (Cantor and Cohen 1980; Lynch and Jarvis 2008). Specifically, reporting homicides to the UCR is a voluntary action for precincts and although homicide reporting has the highest rate of reporting precincts, it is prone to missing and incomplete data (Lynch and Jarvis 2008). Put differently, these zeros may not represent no homicides at all (although, this could be the case) but also may tap into issues related to data quality and availability (Lynch and Jarvis 2008). Finally, it is possible that a single homicide may represent an idiosyncratic event that is unrelated to theoretically motivated contextual issues. Socio-criminological theories and explanations of homicide, thus, are effective in addressing homicide patterns, whereas a single homicide may be a more randomized occurrence. These issues cannot be examined in the current data. However, it does raise questions about what

“zero” reported homicides means and what substantive takeaways come from models examining these binary outcomes. Given the results and these underlying dynamics, I opt to discuss findings related to the number of homicides, rather than the logistic results, in the below sections.

The second major contribution focuses predominantly on the extent to which criminological and sociological theories of crime and homicide explain variation in homicides. Specifically, the extent to which these insights explain trends in firearm-related homicides, including handgun- and long gun- (rifles, shotguns) specific trends. In line with traditional social disorganization approaches, the results presented here indicate variation in county-level measures within a state – and not their state-level equivalents – provide resounding evidence that homicides are shaped by county-level contexts within a state. Calculated variance components (ICCs) indicate less than 15% of variation in county-level homicides is explained by state-level contexts, including analyses incorporating state-level contexts and the four focal gun policies. Moreover, the results demonstrate geographically granular approaches are imperative in understanding the correlates of homicide, as well as other crimes (Bailey 1984; Messner 1982; Messner and Tardiff 1986; Wenger 2019a, 2019b). To conserve space, I contextualize the results from two well-established socio-criminological measures associated with an increase in homicides (geographic mobility, economic disadvantage) but dovetail these results into broader takeaways regarding the robustness of social disorganization theory’s applicability to homicides across weapon types.

Originally posited by Shaw and McKay (1942), the positive associations with the number of homicides for geographic mobility and the percentage of residents below the

2015 federal poverty line are in line with theoretical expectations. Scholars contend the movement of residents in and out in and out of a county disrupts the social landscape (Bursik Jr. 1999; Bursik and Grasmick 1993) and often disrupts connections within communities which operates as a form of social disorganization (Greenberg, Rohe, and Williams 1985). Results presented here indicate this to be the case. Important to note, the county-level geographic mobility measure was significant in predicting the number of reported homicides but the state-level average measure did not have the same effect. Although these state-level average measures were originally included for methodological purposes (Raudenbush and Bryk 2002; Wenger 2019b), the null effect of the state-level geographic mobility measure highlights the importance of geographic nuance in homicide research (Wenger 2019a, 2019b). That is, geographic mobility is a local phenomenon, and has its effects locally, rather than at the state level. While geographic mobility's effect on crime, including homicide, is robust (Boggess and Hipp 2010; Bursik Jr. 1999; Chamlin 1989; Skogan 1989), this chapter examines whether it also informs homicides conducted using particular primary weapons (i.e., firearms). Indicating robustness of these dominant criminological paradigms, geographic mobility is associated with increased homicides regardless of operationalization.

As for economic dynamics, areas with higher poverty levels are often associated with less social connectivity, referred to as community stability (Kasard and Janowitz 1974), as well as fewer opportunities for supervision, social mobility, and entertainment (Aizer 2004; Kinney, Brantingham, Wuschke, Kirk, and Brantingham 2008). Regardless of the causal mechanisms behind economic inequality's effect on crime, communities with higher poverty rates have long been associated with higher crime rates (Akins,

Rumbaut, and Stansfield 2009; Lee, Maume, and Ousey 2003; Strom and MacDonald 2007), including homicide (Stretesky, Schuck, and Hogan 2004). Of interest here, however, is the robust explanation of poverty in explaining the number of homicides reported in a county across firearm-related homicides. There was no association between county-level poverty rates and handgun-related homicides, running counter to expectations. Future research should examine this in more detail. Yet, the robustness of economic dynamics in predicting homicide rates across weapon types is consistent with theoretical expectations. Importantly, poverty levels at the county-level significantly predicted homicide counts within a state, but there was no evidence state-level poverty shaped homicide variation. Once again, these associations highlight the role of geographic granularity and its importance in homicide research (Messner and Tardiff 1986).

Overall, these findings indicate that homicide patterns are shaped by fundamental factors that can explain homicides, including weapon-specific patterns. Put differently, criminological and sociological theories aimed at explaining crimes, including homicide, are robust in their explanatory power. While there are some differences in handgun and long gun homicides – such as rurality – these results provide evidence that rectifying fundamental issues related to social inequality and social (dis)organization may not only reduce overall crime, but gun violence as well.

Third, and central to this chapter, is the extent to which firearm-related policies – specifically CCW, SYG, CAP, and UBC laws – explain homicides beyond structural disadvantages and other socio-criminological factors. As criminologists and sociologists have discussed for decades, crime, and particularly homicide, is heavily shaped by local-

level contexts (Bailey 1984; Messner 1982; Messner and Tardiff 1986). The unconditional models reported in Tables 3.3a and 3.3b indicate the extent to which county and state contexts explain variation in homicides. As Table 3.3b indicates, less than 15% of the variation in homicides is attributed to state-level contexts. The extent to which state-level contexts explain variation in county-level homicides is consistent even when confounding factors are included in the models (Table 3.4, Table 3.5, Table 3.6, Table 3.7). Thus, these results confirm that more of the variation in homicides within the United States can be attributed to local-level contexts – in this case, counties. However, gun policy scholarship often ignores the importance of geographically granular approaches and, consequently, the related socio-criminological correlates (RAND 2018). This shortcoming may lead to inaccurate inferences into the effects of gun policies on homicide, as well as other (violent) crime.

While gun rights and gun control advocates regularly support and work to pass the four focal firearm-related policies as a way to reduce gun violence and/or protect perceived *2nd Amendment* freedoms (Goss 2004; Melzer 2009; Cook and Goss 2014; Steidey and Colen 2017), results presented here indicate CCW, SYG, CAP, and UBC policies may be ineffective beyond other socio-criminological factors. While the research on the impact of gun policies on homicides and other crimes is mixed (RAND 2018), the results indicate these specific gun policies do not provide any additional explanation of county-level homicide patterns, even those specifically associated with firearms.⁵³

⁵³ To note, there were two significant findings related to firearm policy. First, there is evidence that states with a Universal Background Check (UBC) policy were associated with an increase in the number of long gun-related homicides reported. However, UBC policies focus on handgun-oriented background checks and not those aimed at long guns. Thus, it may not make sense for UBC laws, as they are operationalized in this chapter, to matter for long gun-related homicides. Second, there is also a positive association with the time

While it seems these specific policies may currently be negligible in their effects, this is not to say this will always be the case nor other firearm-related policies may matter. Firearms may be the cause of most homicides; however, firearms may not be the underlying cause. As results presented here overwhelmingly indicate, rectifying community inequities may lead to a reduction in the number of homicides. It remains possible once these fundamental issues are resolved, these specific firearm laws may become increasingly relevant in reducing homicide trends – an empirical question beyond the scope of the current project. Additionally, this is just one county-level study in a field of gun policy scholarship. Research on state-level trends provides evidence firearm policies may matter more for aggregate-level patterns (RAND 2018). Rather than interpreting aggregate-level and geographically nuanced approaches independently, results from analyses at all units of analysis (e.g., countries, states, counties, neighborhoods) should be harmonized to construct impactful and empirically informed social policies to reduce (firearm-related) homicides.

Addressing the fourth contribution, results demonstrate that state-level cultural and socio-political contexts shape homicide patterns at the county-level. Originally, most of these measures were included to control for factors often associated with the adoption of firearm-related policies (Steidley 2018; Malone and Steidley 2019). However, some of these measures were significantly associated with the number of homicides, including

since a state adopted a CAP policy and the number of handgun-related homicides. However, CAP policies are often aimed at limiting access to firearms in the household and/or holding gun owners responsible if a child of a certain age unlawfully discharges the firearm (DeSimone, Markowitz, and Xu 2013). The mechanism behind this policy is often aimed at limiting adolescent suicides and accidental shootings (DeSimone, Markowitz, and Xu 2013); thus, this association requires further empirical consideration to understand why this positive association may be present that cannot be ascertained with the current data.

firearm-related homicides, beyond well-established criminological correlates. Consistent with the Southern (sub-)culture of violence hypothesis (Anderson and Anderson 1996; Hackney 1969; Olsey and Lee 2010), being located in the Southern Census region was associated with an increase in the average number of homicides in a county. There are two potential explanations for this association: First, some have argued Southern culture promotes a cultural environment that increases criminal behavior (Anderson 1996; Olsey and Lee 2010). However, scholars disagree on the causal mechanism behind this argument (Tcherni 2011; Whitt 2010). An alternative explanation may be rooted in gun culture (Yamane 2018). Guns, particularly those for recreational purposes (e.g., hunting), are a common aspect of Southern culture and many individuals are introduced to firearms in early adolescence (Carlson 2015; O'Connor and Lizotte 1978; Warner and Thrash 2019). Rather than focusing on the "violence" of Southern culture, it may instead be that firearms are more likely to be a part of everyday life which leads to an increased presence and utilization of guns (O'Connor and Lizotte 1978). Although not ascertainable in the current data, this is an area for further research to explore in-depth, focusing in particular on regional differences in firearm acquisition, carrying, and usage.

Additionally, two measures associated with state-level socio-political contexts consistently provided explanations for the number of homicides: NRA journal subscriptions and percent Republican legislators. Some research has contended NRA journal subscriptions paired with suicide rates are an adequate measure of firearm prevalence within a state (Siegel et al. 2019). However, I find that states with more NRA journal subscribers report fewer overall and firearm-related homicides but an increase in long gun-related homicides (no effect present for handgun-related homicides). Although

the NRA is supportive of gun rights policies and perceived *2nd Amendment* freedoms, they have long supported the concept of “responsible gun ownership” in their press briefs and magazines (Charles 2018; Yamane, Ivory, and Yamane 2019). While the NRA has spoken out against gun control policies and actively promoted policies extending firearm access and the right to use deadly force (Goss 2004; Light 2017), the NRA’s publications continue to stress the importance of taking care of, storing, and properly using firearms (Steidley and Colen 2017; Yamane, Ivory, and Yamane 2019). Put differently, these subscription rates may simultaneously tap into gun ownership and “responsible gun ownership” – thus explaining these negative associations. As for long gun-related homicides, the positive association between NRA journal subscriptions and long gun-related homicides may be tapping into long gun ownership (e.g., rifles, shotguns) rather than other general firearm ownership (e.g., handguns). As previous work has found, purposes for purchasing and using long guns, compared to handguns and other firearms, often vary (Carlson 2015; Warner 2019). Thus, this requires a more in-depth analysis of NRA journal subscribers and their firearm purchasing and handling patterns. Additionally, people may subscribe to certain NRA magazines for multiple reasons other than support for the NRA’s political agenda. Future research can help us better understand what drives NRA journal subscriptions, as well as the interests of this constituency, which can provide insight into what construct NRA magazine subscriptions characterize.

As for the association with political representation, one might invoke several possible explanations for the positive association between the percentage of Republican legislators and homicide rates. One potential explanation may be rooted in the policies

often supported by Republican legislators that increase firearm access (Malone and Steidley 2019), decrease economic opportunities, particularly for lower-income populations (Royed and Borrelli 1999; Boeckelman 1996; Potrafke 2018), and pass various policies that have (un)intended consequences on crime, including homicides (Jacobs and Carmichael 2002). Alternatively, Republican legislators might be more likely to engage in dog-whistle politics – or coded speech that refers to particular social groups, such as racial minorities – that, in turn, leads to increased racial animosity (Haney-Lopez 2014) and continuing racial segregation in communities (Rosenthal 2018). All of these issues can contribute to higher crime rates (Messner and Rosenfeld 1986; Shaw and McKay 1942). Put differently, Republican legislators are not themselves increasing homicides and firearm-related violence, but their rhetoric and policy initiatives may have unintended consequences that the measure is capturing. However, the association seems to only be present for overall, firearm-related, and handgun-related homicides – not long gun-related homicides. Given this dynamic, the associations are likely linked to efforts related to policies and initiatives impacting urban spaces – which intersects with feelings of racialized and economic threat by White residents (Enck-Wanzer 2011; Rochoa and Espino 2009). Given these findings associated with a state’s political landscape, scholars should consider including political measures in models predicting crime and deviance. Political contexts inform policies and initiatives, as well as reflect broader cultural contexts associated with anxiety and fear.

Fifth, and finally, this dissertation addresses methodological issues related to criminological and gun policy research that should be applied in future research on the impact of gun policies, as well as crime research more broadly. One underlying takeaway

from this dissertation's methodological approach is the examination of omitted level bias – an issue often overlooked within criminological research (Wenger 2019a, 2019b). In line with Wenger's empirical work (2019a, 2019b) and Messner (1983) and colleagues' postulations (Bailey 1984; Messner and Tardiff 1986), county-level factors continue to be acutely informative of county-level homicide patterns and state-level factors, predominantly social disorganization dynamics, seem to have minimal effect on homicides. While previous research only applying socio-criminological measures at a single-level (e.g., county-only) provide important insights, singular level approaches cannot provide insight into whether the actual processes are unique to a certain level. By applying this dual-level approach, this chapter is better able to determine the effect of various geographic units' measures and the net effect of geographically granular measures (Bailey 1984; Messner and Tardiff 1986). Wenger (2019a, 2019b) has applied this to assault and robbery trends and this chapter presents the first study to apply this approach to homicide-related research. Although these findings confirm previous research's insights about homicides' localized nature, there is also evidence some state-level factors (e.g., state legislative make-up) do matter. While the analyses presented here are a first step, this research needs to be replicated across different temporal time points and applied to even more geographically granular levels (e.g., tract-level, block-level, neighborhoods) to provide additional context into the influence of more aggregate-level measures.

Beyond correcting for omitted level bias, the multi-level models applied in this chapter simultaneously address issues of standard error calculation and other variance estimation components in gun policy research. Since the 1990s, gun policy research has

had limited county-level (or lower) analyses to examine the effect of state-level policies. The limited research on county-level (and other geographically nuanced) approaches has had multiple methodological concerns, predominantly around standard error calculation and issues of Type I error (see Aneja, Donohue, and Zhang (2014)). Recent scholarship has called scholars to include state-level clustered standard errors when exploring the effect of gun policies on more local-level outcomes – in this case, counties (Aneja, Donohue, and Zhang 2014).⁵⁴ However, this approach still presents issues in adequately ascertaining the effect of aggregate-level measures on lower-level outcomes (i.e., state-level policy effects on county-level homicides) (Huang 2018). Multi-level modeling approaches provide a solution to this problem and, as mentioned above, allow for correction of omitted level bias (Cheah 2009; Raudenbush and Bryk 2002; Wenger 2019a, 2019b). While this is the first study using a multi-level modeling technique to examine the effect of these four gun policies on county-level homicides, this approach allows scholars to adequately ascertain not only the direct effect of state-level policies on local-level outcomes, but to explore potential mediation and moderation associations between these policies and community dynamics in the future.

⁵⁴ Supplemental analyses were conducted using the clustered standard error approach and there are differences in the results. Interestingly, the multi-level models (both presented in this chapter and in Appendix Tables A.3 through A.5) find no effect of any of the focal policies on overall homicides and majority of the firearm-related outcomes. However, the clustered standard error models (see Appendix Table A.6 for the negative-binomial results and Appendix A.7 for the zero-inflated negative-binomial results) indicate SYG and CAP laws are associated with an increase and decrease in homicides, respectively. Given the clustered standard error approach leads to increased Type I error due to the variance estimations, these results from the clustered standard error models may not be reflective of a true relationship (Cheah 2009). Future research should explore, in-depth, the differences in these variance estimation techniques to better determine what methodological approach is best suited for assessing the effect of gun policies within geographic granular spaces.

Limitations

As with all research, this chapter faces empirical limitations. First, I use a 3-year summation of homicide data from 2014 to 2016, measuring all independent variables at the central temporal point: 2015. Although this is a common approach in social scientific research, it is not possible to infer causal associations given the overlapping temporality. Additionally, homicides between 2014 and 2016 marked the first time since the 1980s in which homicides increased across the country. Thus, 2014-2016 may indicate an anomalous set of years – an ongoing conversation within criminological research (Rosenfeld 2019). Analyses presented here would benefit from replication across various time points to determine whether these relationships hold with altered temporal parameters.

Second, the analytic approach takes a two-model approach by first predicting the probability that a homicide will be reported (0/1) and subsequently predicting the number of reported homicides in counties with one or more reported incident.⁵⁵ While the data indicates a zero-inflated negative-binomial approach would better fit the distribution, there is currently no such approach available when employing a multi-level model. Here, I prioritize the multi-level approach given the nested structure of the data. However, future research should examine the full variation of homicides in all counties, including those without homicides. Although I conduct sensitivity analyses (see Appendix Tables

⁵⁵ Sensitivity analyses were conducted to address the robustness of these models. In Appendix Table A.5, I conduct a series of two-level negative-binomial regressions that excludes the predicted probabilities (Q_{ij}) and includes the zeros in the reported models. Substantively, the results do not change. Additionally, I also conduct a series of zero-inflated negative-binomial regressions with clustered standard errors (Appendix Table A.7) but caution scholars to see these results as robust given methodological shortcomings previously discussed.

A.3, A.4, A.5, A.6, and A.7) and the substantive results are robust to changes in modelling and estimation procedures, a different analytical approach may be better equipped to deal with an overrepresentation of zeros.

Finally, for the outcome variables, I rely on the FBI's Uniform Crime Report's Supplemental Homicide Reports. However, the Supplemental Homicide Reports only provide known homicides and crimes reported by reporting agencies to the FBI. One major issue with this data source is that it requires crimes be reported by the agency to the FBI which is voluntary. Thus, not all agencies report these results across all quarters or even at all in a given year (Cantor and Cohen 1980; Lynch and Jarvis 2008). Additionally, this is only data on crimes and incident characteristics (e.g., firearm usage) known to police. Thus, counties with "zero" homicides are assumed to have no reported homicides which may, or may not, be the case. The Uniform Crime Report's SHR is the only comprehensive dataset that allows for count-based measures of homicides, specifically with data on the primary weapon(s) employed in each reported incident. Replicating this study using alternative homicide data will be imperative to determining the validity and reliability of these findings. Notwithstanding these limitations, results presented here provide important insights into the role state-level policies have on county-level outcomes and, importantly, the importance of structural inequities as fundamental attributes contributing to variations in homicide.

F. Conclusion

This chapter examines the question: *To what extent do certain state-level gun policies affect county-level homicides beyond well-established county-level correlates of homicide?* Based on the results presented here, there is abundant evidence to indicate that

the four focal state-level gun policies – CCW, SYG, CAP, and UBC – do not seem to be associated with county-level homicide rates, even homicide rates that are firearm-specific. While these gun policies may not seem to matter locally, criminological and sociological theories of crime and homicide provide insights into what factors robustly explain homicides, even firearm-related ones. Put differently, CCW, SYG, CAP, and UBC policies may be seen by some as a solution to gun violence, particularly homicides in this case, but these policies do not provide solutions to underlying, fundamental dynamics that are associated with homicides in U.S. counties. Racial threat, economic opportunity, social (dis)connection, and other socio-cultural dynamics seem to be the driving forces of homicides, regardless of the firearm employed. These socio-criminological factors are unique to communities (Messner 1983) – in this case, counties – and rectifying these issues may help reduce (firearm-related) homicides dramatically. Therefore, activists and policymakers should consider promoting and enacting policies/initiatives to reduce structural inequities as a solution to this form of gun violence.

This is not to say that gun policies do not, or will not, matter. First, this study only focuses on four well-known firearm-related policies. While these are often cited as important policies based on one's ideological perspective, there remains a diversity of firearm-related policies not examined here. Second, this study focuses on a single type of gun violence – homicides – but does not address other types of gun violence, including suicide, mass shootings, and accidental shootings. As gun violence and gun policy research continues to grow, analyzing the causes and solutions to gun violence of all forms across various units of analysis (e.g., neighborhoods, counties, states, nations) will

allow for the construction of comprehensive and empirically informed policies that can reduce various forms of gun violence. Purely firearm-specific policies and interventions may be minimally effective when not paired with solutions to broader social problems that contribute to these patterns.

IV. Discussion and Conclusion

This dissertation focuses on the causes and effects of four major firearm-related policies in the United States: Concealed Carry Weapons (CCW), Stand Your Ground (SYG), Child Access Prevention (CAP), and Universal Background Checks (UBC). Specifically, I examine how the gun rights movement has affected the adoption of these policies between 1990 and 2016, and the extent to which these policies explain homicide variation above well-established socio-criminological correlates in U.S. counties.

Findings provide insights into the indirect political influence professionalized social movement organizational (SMO) resources – specifically NRA campaign contributions – have on the adoption of movement-related policies. Overall, findings demonstrate that NRA campaign contributions indirectly affect the adoption of state-level gun rights and gun control policies. Although the gun rights movement has been effective in shaping policy adoption patterns, these policies seem to have a negligible effect on homicide patterns, including firearm-specific homicides. Instead, factors related to structural dynamics rooted in social inequality and demography provide far more effective explanations for variation in overall and firearm-specific homicides.

Indirectly Influential: Campaign Contributions as a “Return on Investment”

The chapter modeling the determinants and timing of state-level firearms policies (Chapter II) makes two major contributions to the scientific literature. First, this chapter provides insights into the role, and influence, of campaign contributions to advocacy organizations beyond federal-level elections and voting patterns. Second, professionalized SMO resources may influence legislative outcomes, in line with resource mobilization theory (Amenta et al. 2010; Soule and Olzak 2004), but do so in

unique, indirect ways. These results provide a first step in social movement and advocacy organization research to examine more closely the role of economic contributions as a return on investment within the political landscape (i.e., money spent on candidates/campaigns in return for issue-specific policy support).

Specifically, I explore the extent to which campaign contributions to federal- and state-level political campaigns operate as an SMO resource to assist movements in achieving their policy goals, widely considered a form of social movement success (Soule and Olzak 2004). While sociologists have largely ignored the potential role of campaign contributions, political scientists have systematically examined the role of campaign contributions on various political outcomes, such as federal officials' voting patterns (Austen-Smith 1987; Figueiredo and Edwards 2007) and odds of election (Conley and McCabe 2012; Lessig 2011; Milyo, Primo, and Groseclose 2000). Although research in political science provides insight into federal-level dynamics, gun policies are predominantly enacted at the state-level (Vizzard 2014).

To that end, this dissertation uses the gun rights movement, specifically the National Rifle Association (NRA), as a case study. Results indicate that NRA campaign contributions do predict the timing of firearm-related policy adoption, but these contributions work indirectly through the election of Republican representation into state legislatures. Specifically, campaign contributions have no *direct* effect on the adoption of firearm-related policies. Instead, campaign contributions work *indirectly* through the formal political landscape to achieve policy-related successes. In line with research by political scientists (Cann 2007; Snyder Jr. 1999), states with more NRA campaign contributions were associated with an increased proportion of legislative seats occupied

by Republican legislators which, in turn, led to an increase in the odds of pro-movement policy adoption (SYG) and decrease in the odds of counter-movement policy adoption (CAP). Put differently, these economic investments in political officials' campaigns are not directly influencing the adoption of policies but instead lead to the election of sympathetic political elites (i.e., Republican legislators) that promote/oppose policies congruent with movement goals (Malone and Steidley 2019).

Often referred to as a “return on investment” (Snyder Jr. 1999), these results indicate campaign contributions operate as an investment into political elites that results in the adoption of pro-movement related policies. Additionally, the effect of these resources may be movement-specific and, thus, similar to political opportunities (Meyer and Minkoff 2004) – an area for future research. This dissertation chapter finds the NRA has effectively employed campaign contributions to shape state-level gun policies. However, campaign contributions may only be one professionalized resource available to advocacy organizations. While this study focuses on the gun rights movement, future research should examine the effect of campaign contributions, as well as other professionalized SMO resources, on social movement successes, including agenda-setting processes (e.g., bill introduction, debate) and court decisions (Boutcher et al. 2018; Soule and Olzak 2004).

Estimating the Effects of Gun Policies: Limitations and Effectiveness

The chapter modeling county-level variation in homicides makes two key contributions to the scientific literature. First, this chapter contributes to research on the effectiveness of gun policies. In particular, results presented here indicate four specific state-level gun policies seem to have no association with homicide rates, even those that

had a firearm as the primary weapon. Second, this chapter addresses substantive and methodological shortcomings in gun policy research that have effects on research's ability to ascertain the true effect of policies on their (un)intended outcomes. Specifically, I incorporate socio-criminological theories to determine whether these focal gun policies affect homicides above well-established socio-criminological correlates. Additionally, I discuss the importance of using multi-level modelling as a tool to better understand the effects of state policies on local-level outcomes.

While ongoing public discourse on the impact of gun policies remains (Cook and Goss 2014; Steidley and Colen 2017), findings presented in this dissertation indicate that state-level dynamics may have little to do with local-level variation in homicides. In analyses presented in Chapter III, state-level contexts consistently account for less than 15% of the variance in the number of reported homicides. While previous research has identified associations between some firearms policies (especially CCW laws) and homicides (RAND 2018), this may be due to substantive and methodological limitations (Aneja, Donohue, and Zhang 2011, 2014).

Messner (1983) and colleagues (Bailey 1984; Messner and Tardiff 1986) call for geographically granular approaches (e.g., counties, Census tracts) to crime, particularly the importance of localized contexts (Messner and Rosenfeld 1993; Messner and Tardiff 1986; Parker and McCall 1999). Results presented here demonstrate CCW, SYG, CAP, and UBC policies – both the adoption and timing since adoption – fail to explain homicide variation beyond well-established correlates in socio-criminological research (Shaw and McKay 1942; Messner and Rosenfeld 1993). While this dissertation only focuses on a single temporal point (2014-2016), these results indicate these policies may

be minimally effective despite sustained messaging and efforts by activists, advocacy organizations, and political officials in supporting these policies' adoptions (Malone and Steidley 2019; Steidley 2018; Steidley and Colen 2017). However, future research should replicate these findings across multiple time points to determine robustness and, additionally, explore over time trends to assess potential causal relationships.

Methodologically, Chapter III employs a multi-level modelling technique that better estimates standard error and other variance calculations for higher-level predictors (e.g., state) in ways previous research on the effects of gun policies have not (Ayres and Donohue 2003; Huang 2018; McNeish 2014; Raudenbush and Bryk 2002; Wenger 2019a, 2019b). While recent research employed state-level clustered standard errors to account for the state-level variation (Ayres, Donohue, and Zhang 2014), this approach may inaccurately estimate the standard errors when dealing with nested data which leads to increased odds of Type I Error, or potential over-rejection of the null hypothesis (Cheah 2009; McNeish 2014). Applying a multi-level approach addresses this shortcoming. The models presented here are better able to account for the nested structure of the data (i.e., counties nested in states) and, as more recent research as call for (Wenger 2019a, 2019b), explores the possibility of omitted level bias.

Although multi-level models are methodologically equipped for these geographically granular analyses (Wenger 2019a, 2019b), I also conducted a series of supplemental analyses to showcase the difference in results using previously employed methods (e.g., clustered standard errors). These results (Appendix Tables A.6 and A.7) indicate that

clustered standard errors produce incongruent results with the multi-level findings.⁵⁶ Particularly, the sensitivity analyses identified a significant relationship between certain gun policies and homicide rates – contrary to the null findings in the multi-level results presented here. However, this important difference in findings might result from standard error estimations (Cheah 2009; McNeish 2014).⁵⁷ Future research should employ multi-level modelling approaches to better understand the net effect of firearm policies on homicide. Applying these modeling strategies and explicitly integrating socio-criminological insights may help reduce mixed results within the literatures and, potentially, assist in developing policies that will be more effective in reducing gun violence. However, this requires extensive replication across geographic and temporal contexts.

⁵⁶ For the purposes of this dissertation, all analyses were conducted in Stata 15.1. For the appendix tables (Appendix Tables A.6 and A.7), analyses employed the *nbrreg* and *zinb* commands. To cluster the standard errors, each model was estimated using the *vce* command which was used to indicate the analyses should be clustered by the state (i.e., *vce(cluster state)*).

⁵⁷ Why might we see these different results based on, at face value, similar modeling techniques (i.e., addressing for the variation of the state-level)? First, clustered standard errors account for the average cluster size and the variation in the cluster sizes (Moulton 1986). Although clustered standard errors have been applied across a variety of linear and non-linear statistical models (MacKinnon and Webb 2017), issues arise when trying to determine the effect of variables at a specific cluster's level of analysis (e.g., state) and incorporating multiple factors measured at a specific clusters level (e.g., policies, political contexts). Although there may be less concern about the underestimation of standard errors when examining the association of level-one variables on an outcome, standard error estimates when modeling the effect of a second (or higher)-level variable are often underestimated (Huang 2016). A multi-level model, however, "...[results in] a more conservative test of the statistical significance...[and a] more accurate characterization...of the standard error estimates." (Huang 2018: 4-5). Since this dissertation examines the effect of state-level policies on lower-level outcomes (i.e., county homicides), MLMs are better equipped to estimate standard errors by reducing the risk of underestimation and, thus, reducing Type I Error (Huang 2018). Additionally, employing an MLM approach allows researchers to ascertain the extent to which second (or higher)-level contexts explain variation in the dependent variable of interest (Raudenbush and Bryk 2002). Providing this contextual information can assist in understanding the effect size and variance explanation of variables that are significantly associated with the outcome.

Major Takeaways and Implications

The results presented here have important implications for several stakeholder groups, such as researchers, activists, and policymakers.

Major Takeaways for Policymakers

For policymakers at all political levels, this dissertation provides two major takeaways: 1) enacting CCW, SYG, CAP, and UBC policies aimed towards increasing/reducing firearm access may not address the underlying factors of (firearm-related) homicides, and 2) limiting the ability for local-level officials to develop community-specific solutions to gun violence may have unintended consequences.

First, there is no evidence to support the argument that variation in the four focal gun policies across states helps explain local-level differences in homicide rates, at least not net of other socio-criminological correlates. Instead, reducing structural inequities and providing economic (and other types of) opportunities within communities may be more effective in reducing homicides. As policymakers continue to debate the role of firearms in society and policies aimed at increasing/reducing firearm access, CCW, SYG, CAP, and UBC policies may divert attention from developing policies that address the fundamental determinants of homicides. As demonstrated here, focusing on firearm laws may have a negligible effect on reducing homicides, including those explicitly associated with a firearm. Focusing attention towards addressing social inequities within communities, as previous socio-criminological research has demonstrated (Messner 1983; Messner and Rosenfeld 1986; Wenger 2019a, 2019b), may result in achieving desired outcomes, such as reducing crime and gun violence.

Second, this dissertation calls into question the role of state-level policies that limit local-level solutions to firearm violence, including homicides. Referred to as firearm-related preemption laws (Vizzard 2014), gun rights advocates argue having conformity of firearm-laws within states limits violation of *2nd Amendment* freedoms (Steidley and Colen 2017). However, these preemption laws ignore the localized nature of homicide (AbiNader 2020; Hunnicutt 2007; Kposowa and Breault 1993). However, the research on firearm-related preemption laws and their effects remains scant. Since state-level policies do not seem to be effective in reducing homicides, community-level interventions and policies may be more effective.

Major Takeaways for Researchers

First, insights can be garnered from this dissertation for social movement scholars, political scientists, and criminologists. For social movement scholars, this dissertation contributes to ongoing conversations about defining and studying SMOs/interest groups/interest organizations (Andrews and Edwards 2004; Burstein 1998; Burstein and Linton 2002). On one hand, some scholars contend SMOs and interest groups are distinct based on their tactical repertoires and extent to which an organization is integrated into the formal political landscape (i.e., institutionalization) (Andrews and Edwards 2004). On the other hand, others contend SMOs and interest groups/organizations constitute markers on a multidimensional continuum of organizations that have significant similarities. Both types of organizations employ specific tactics shaped by resource availability (Staggenborg 1989), to pursue successes in line with broader movement goals (e.g., policy adoption). Moreover, the SMO professionalization process may alter the resource structure and access for organizations

which may shift their tactics towards more intra-institutional (i.e., within the polity) pathways (Heidman 2017; Staggenborg 1988). In line with Burstein's (1998) approach, this dissertation demonstrates the NRA's utilization of economic resources into political campaign in line with their ideological goals (i.e., gun rights) reflect classical SMO approaches in achieving desired outcomes using available resources.

Campaign contributions operate as a type of professionalized SMO resource that is impactful, yet unique in its mechanisms compared to traditional grassroots resources (e.g., membership). Political sociologists and social movement scholars have minimally explored the nuances and impacts of campaign contributions and other economic investments within the socio-legal landscape (see Peoples (2013) and Roscoe and Jenkins (2005) for a review). Moreover, the majority of political science research on campaign contributions has focused extensively on federal-level decision-making – a potential shortcoming given the role of states have in this specific policy area (also see Soule 2004; Soule and Olzak 2004; Vizzard 2014). In the case of the NRA, their campaign contributions appear to operate effectively as a “return on investment” (Snyder Jr. 1990). These economic investments into political campaigns increase the representation of ideologically-aligned elites, in this case Republicans, which, in turn, leads to the adoption of pro-movement policies and the suppression of counter-movement policies.

Another insight for political sociologists, political scientists, and other policy scholars is derived from the second empirical chapter (Chapter III) of this dissertation. Extending contemporary gun policy scholarship, this dissertation considers how gun policy research often ignores substantive insights from the socio-criminological literature. For instance, gun policy scholarship relies heavily on state-level approaches (e.g., state

homicides over time) which may fail to assess the true impact of these laws above and beyond other substantive correlates (Ayres, Donohue, and Zhang 2014). These approaches also ignore the localized nature of homicides (Messner and Rosenfeld 1993). Broadly, the results presented here dovetail into broader disciplinary conversations and research on the down-stream consequences of social policies in the United States (Brush 2011; Morgan 2006; Rothstein 2017). When examining the effects of social policies, it is important for scholars to consider substantive insights about the focal outcome of interest (e.g., homicides) and determine the proper level of analysis (e.g., individual, county, state, country). While the focus of this dissertation is on gun policies, results presented here raise questions about identifying the proper level analysis when examining policy impacts broadly.

For criminologists, as well as other scholars examining the correlates of crime, this dissertation confirms the importance of including multiple levels of analysis when examining the structural correlates of crime (Wenger 2019a, 2019b). Criminological research has established the localized nature of crime (Shaw and McKay 1942; Wenger 2019a, 2019b), particularly homicide (Messner 1983; Bailey 1984). However, research often only examines the effect of correlates at a single-level of analysis rather than considering the potential effect of aggregate level contexts. This dissertation indicates some state-level factors do, in fact, affect county-level homicide trends. However, county-level factors more consistently and robustly predict homicide trends. Generally, state-level contexts account for approximately 10-15% of the variance in homicides, including firearm-specific homicides. Thus, variation in homicides is best explained by county-level contexts. Moreover, as the results here demonstrate and Wenger (2019a,

2019b) highlights, accounting for aggregate-level measures when examining lower-levels of analysis (e.g., Census tracts, counties) allows research to ascertain the true effect of a given level of analysis' factors on crime.

Major Takeaways for Activists

For activists, particularly those focused on gun rights/control, this project offers two major takeaways: 1) Access to members of the polity can push forward movement goals and initiatives, particularly when paired with economic resources, and 2) focusing on these popular policies that enhance/limit firearm access may fail to address underlying factors of (firearm-related) homicides in communities.

First, this dissertation demonstrates the influence that economic contributions by advocacy organizations into federal- and state-level political campaigns can have on achieving issue-related outcomes. Broadly, being able to provide economic incentives to political candidates that support ideologically-congruent issues increases their likelihood of election and, in turn, their support for movement-related legislation within the polity (Peoples 2013; Roscoe and Jenkins 2005). However, the access to economic incentives, such as campaign contributions, is starkly inequitable across organizations. Thus, the potential implications for activists is heavily nuanced.

On one hand, results indicate economic-based approaches are effective in attaining successes and activists, broadly, could shift their focus towards these intra-institutional and economically grounded tactics. However, this means organizations would need access to supporters who can contribute monetary donations and, for some, shift their tax designation to allow for lobbying and large-scale political contributions (e.g., a 501(c)(4) designation). On the other hand, changing the landscape of investment

into political campaigns would, potentially, reduce the influence of economic incentives and create a more equitable playing field. Some activists and researchers have called for limitations, and even the complete removal, of large-scale economic contributions to political officials (La Raja 2008). Based on the results presented here, limiting campaign contributions may reduce the “return on investment” dynamic and limit the influence of campaign contributions on voting patterns, and, in turn, policy adoption.

As for gun activists and advocacy organizations, focusing on promoting policies that extend/limit access to firearms, specifically CCW, SYG, CAP, and UBC laws, may not adequately address the underlying factors of homicides. Organizations and activists, regardless of their ideological position, contend these policies that shape firearm access affect crime and gun violence patterns. However, results presented here indicate this not to be the case. Although firearms may be the weapon used of most homicides, these four state-level policies aimed at enhancing/reducing access seem to have a negligible effect. Instead of focusing on these four policies, policies aimed at reducing social inequities and increasing community-level opportunities are more likely to address the fundamental dynamics of homicide. Even homicides that are conducted with particular firearms (e.g., handguns, rifles, shotguns) are similarly shaped by these dynamics, which indicates the robustness and importance of these factors. This is not to say firearm-related policies may *never* be influential or important in changing gun violence. Instead, reducing social inequities may limit contemporary gun violence but firearm access may become more important as these inequities shrink – an empirical question not examined in this dissertation.

Conclusion

This dissertation focuses on two major research questions: 1) *Under what conditions have states implemented gun rights and gun control policies? Specifically, how have professionalized SMO resources (campaign contributions) and social-political contexts impacted the passage of gun policies between 1990 and 2016?* And 2) *To what extent do certain state-level gun policies explain county-level variation in homicides above and beyond county-level criminological correlates?* Overall, findings indicate that NRA campaign contributions indirectly influence the adoption, or lack thereof, of firearm-related policies via the election of Republican legislators. However, these focal policies, which are argued to affect (firearm-related) homicides in various ways depending on one's ideological disposition (i.e., gun rights, gun control) (Steidley and Colen 2017), seem to have no statistical effect on reducing homicides beyond socio-criminological correlates.

Policy adoption has long been conceptualized as a social movement success (Soule and Olzak 2004), yet social movement scholarship has ignored the potential role of campaign contributions as a resource available to SMOs. As I find, campaign contributions do affect movement-related successes, albeit in indirect ways. Campaign contributions from the NRA do not *directly* influence gun policies. Instead, these contributions assist in electing individuals who support gun rights – in this case, Republican legislators – that can shape the policy landscape within a state.

Additionally, I examine the extent to which these four policies (CCW, SYG, CAP, UBC) have been effective in reducing a specific type of gun violence – homicides. Correcting for substantive and methodological shortcomings in previous research on

crime (Wenger 2019a, 2019b), as well as gun policies (Ayres and Donohue 2003, 2011; RAND 2018), this dissertation demonstrates that at least the four firearms-related policies examined here (CCW, SYG, CAP, and UBC laws) do not explain variation in county-level homicide rates. Instead, socio-criminological correlates continue to be the dominant predictors of homicide, including homicides associated with firearms. These results indicate these popular gun policies may not solely be the solution to reducing gun violence but, instead, policies and initiatives aimed at reducing structural inequities and providing community-level opportunities for engagement may address the fundamental attributes of homicide.

In sum, my dissertation details the causes and consequences of gun policies in the United States and showcases the robustness of paradigmatic socio-criminological theories in reducing firearm-related violence. While gun policies are wrapped up in political partisanship and shaped heavily by advocacy organizations, these organizational efforts to adopt state-level gun policies may be negligible in achieving the desired policy-related outcomes. Specifically, gun policies may address the perceived cause (i.e., firearms) but fail to address the fundamental symptoms associated with gun violence, in this case homicides (e.g., social inequality). Activists, policymakers, and researchers should turn their attention towards the localized nature of gun violence and allowing communities to derive policies unique to their geographic and socio-cultural contexts. By doing so, this could reduce firearm-related violence better than policies solely aimed at creating uniform state-level regulations that seem to have a negligible impact.

V. References

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VI. Appendices

Appendix Table A.1: Pooled-Time Series Analysis Results – Effect of SMO Resources, Political Opportunities, and Controls on Legislative Make-Up

	% Republican Legislators		Republican Governor	
	Coef.		OR	
NRA Campaign Contributions	0.375	*	0.955	
NRA Journal Subscriptions	0.007	***	1.001	**
% Republican Legislators			1.076	***
Republican Governor	3.390	***		
Hunting License Rate	1.617	**	0.714	
% Urban	-0.452	***	1.061	*
% Poverty	-0.359		1.253	**
% Black	0.012		1.067	
% Foreign-Born	0.893	***	0.960	
% Female	3.180	*	1.971	
% Evangelical	-0.269		0.955	
% High School Graduates	2.219	***	0.835	**
Median Age	0.192	***	1.029	
Violent Crime Rate	0.001		0.997	**
Incarceration Rate	0.029	***	1.003	*
Citizen Ideology	-0.164	***	0.995	
1.south	5.770		0.385	
South	5.616	***	1.881	*
Year	0.160	**	0.977	
Constant	-275.591	**		
N	1196		1196	
AIC			1389.3	
BIC			1491.1	

Appendix Table A.2: Effect of Resource Mobilization and Political Opportunities on CAP Adoption (1990-2002)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	OR		OR		OR		OR		OR		OR		OR		OR	
Resource Mobilization																
NRA Campaign Contributions	3.809	*	2.379		3.215	*	3.138	*	4.848	*	2.892	**	4.643	**	1.721	
NRA Journal Subscriptions	0.998		0.998		0.998		0.998		0.997		1.000		0.997		0.998	
Political Opportunities																
% Republican Legislators	0.870	**	0.850	***	0.864	**	0.860	***	0.878	*	0.900	*	0.858	***	0.862	**
Republican Governor	2.017		2.513		1.972		2.315		2.357		3.167		2.701		1.727	
Diffusion (CAP)	1.002		1.001		1.001		0.991		1.009		1.011		0.980		1.009	
Controls																
Hunting License Rate	1.000		1.000		1.000		1.000		1.000		1.000		1.000		1.000	
% Urban	1.075		1.125		1.073		1.109		1.082		1.123	*	1.078		1.096	
% Poverty	0.444	*	0.391	**	0.426	*	0.406	*	0.450	*	0.537	***	0.416	**	0.446	*
% Black	0.896		0.843	*	0.888		0.882		0.879		0.919		0.863	*	0.908	
% Foreign-Born	1.074		1.014		1.096		1.087		1.025		0.993		0.988		0.980	
% Female	0.003		0.007		0.006		0.005		0.001		0.073		0.001		0.004	
% Evangelical	1.047		1.022		1.050		1.060		1.034		1.070		1.021		1.010	
% High School Graduates	0.743		0.623	*	0.756		0.672		0.746		0.786	*	0.693	*	0.696	*
Median Age	0.541	***	0.516	***	0.527	***	0.534	***	0.487	***	0.646	***	0.489	***	0.535	***
Violent Crime Rate	0.991		0.991	*	0.991		0.990		0.990		0.993	*	0.991	*	0.990	*
Incarceration Rate	1.003		1.003		1.004		1.003		1.003		1.001		1.006		1.003	
Citizen Ideology	0.996		0.987		0.996		0.989		1.007		0.983		1.010		1.000	
South	2.882		3.075		3.795		3.244		3.890		3.086		4.165		2.120	
Year	1.423	*	1.483	*	1.456	*	1.369		1.491	*	0.824	**	1.609	*	1.475	*
Interaction Terms																

NRA Campaign Contributions X % Republican Legislators		0.942						
NRA Campaign Contributions X Rep. Gov			1.467					
NRA Campaign Contributions X Diffusion (CAP)				1.020				
NRA Journal Subscriptions X % Republican Legislators					1.000			
NRA Journal Subscriptions X Rep. Gov						1.001		
NRA Journal Subscriptions X Diffusion (CAP)							1.000	*
NRA Campaign Contributions X NRA Journal Subscriptions								0.998 *
N	366	366	366	366	366	688	366	366
AIC	125.8	125.7	127.4	126.6	126.2	143.7	125	125.4

Appendix Table A.3: Multi-Level OLS Results for Homicide Rates

	Overall Homicides		Firearm-Related Homicides		Handgun-Related Homicides		Long Gun-Related Homicides	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	b	b	b	b	b	b	b	b
Focal Independent Variables								
CCW Law	-0.045		-0.142		-0.139		-0.050	
SYG Law	0.467 *		0.166		0.144		0.023	
CAP Law	-0.190		-0.078		-0.048		0.018	
UBC Law	-0.100		-0.055		-0.030		-0.003	
Time since CCW Adoption		0.001		-0.006		-0.003		-0.002
Time since SYG Adoption		0.040		0.011		0.010		0.003
Time since CAP Adoption		0.000		0.000		0.000		0.001
Time since UBC Adoption		-0.005		-0.005		-0.002		-0.001
Level 1 (County) Controls								
% Rural Geographic Mobility	0.333 *	0.327 *	-0.048	-0.046	-0.107	-0.106	0.044	0.048
% Black	-0.006	-0.005	0.027 ***	0.027 ***	0.021 ***	0.021 ***	-0.001	-0.001
% Foreign-Born	0.728 ***	0.727 ***	0.616 ***	0.615 ***	0.512 ***	0.512 ***	-0.014	-0.013
% Poverty	-0.001	-0.001	-0.002	-0.002	-0.009 *	-0.009 *	0.000	0.000
% Unemployed	0.016 *	0.016 *	0.012 **	0.012 **	0.008 *	0.008 *	0.002	0.002
Median Age	-0.001	-0.001	-0.006	-0.006	-0.002	-0.002	-0.003	-0.003
% BA or more	-0.005	-0.006	-0.003	-0.003	-0.003	-0.003	0.000	0.000
% Married	0.009	0.009	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001
% 16-24 Mainline Protestant Rate	-0.031 ***	-0.031 ***	-0.023 ***	-0.023 ***	-0.010 ***	-0.010 ***	-0.003 *	-0.003 *
	-0.048 ***	-0.049 ***	-0.039 ***	-0.039 ***	-0.021 ***	-0.021 ***	-0.002	-0.002
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Decomposed Crime Rate	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	0.000
Neighboring County Homicide Federal Firearm Licensees	0.003	***	0.003	***	0.004	***	0.004	***	0.004	***	0.004	***	0.010	* 0.009 *
Level 2 (State) Controls	0.008	*	0.008	*	0.000		0.000		0.000		0.000		0.000	0.000
South NRA Journal Subscriptions % Republican Legislators	0.613	***	0.610	***	0.386	***	0.400	***	0.260	***	0.271	***	0.009	0.011
Hunting Licenses	0.132		0.136		-0.014		0.001		-0.032		-0.018		-0.003	-0.001
Suicide Rate	-0.009		-0.009		0.000		0.001		0.000		0.000		0.000	0.000
CCW Diffusion	-0.134		-0.134		-0.042		-0.058		0.001		-0.014		0.005	0.000
SYG Diffusion	0.017		0.024		-0.008		-0.005		-0.009		-0.008		0.003	0.003
CAP Diffusion	0.002		0.002		0.001		0.000		0.001		0.001		0.000	0.000
UBC Diffusion	0.005		0.004		0.002		0.002		0.001		0.001		0.000	* 0.001 *
Constant	-0.001		0.001		-0.001		-0.001		-0.001		-0.001		0.000	0.000
Variance (State)	0.002		0.003		-0.001		-0.001		0.000		0.000		-0.001	* -0.001 *
ICC	1.185		0.855		1.340	***	1.292	**	0.800	**	0.765	**	0.024	0.060
N	0.168		0.174		0.058		0.059		0.023		0.024		0.000	0.000
AIC	0.102		0.105		0.084		0.085		0.065		0.069		0.007	0.006
BIC	2999		2999		2997		2997		2999		2999		2999	2999
	9833.2		9834.7		7283.3		7283.3		5317.9		5320.2		-261	-263.6
	10013.4		10014.9		7463.5		7463.5		5498.1		5500.3		-80.81	-83.41

Appendix Table A.4: Multi-Level OLS Results for Number of Reported Homicides

	Overall Homicides		Firearm-Related Homicides		Handgun-Related Homicides		Long Gun-Related Homicides	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	b	b	b	b	b	b	b	b
Focal Independent Variables								
CCW Law	-20.348		-13.206		-15.774	**	-0.167	
SYG Law	11.763		8.805		5.317	*	0.623	
CAP Law	-0.441		2.233		3.773		-0.180	
UBC Law	-3.823		-5.093		-3.945		-0.406	
Time since CCW Adoption		-0.525		-0.439			-0.337	*
Time since SYG Adoption		1.147		0.803			0.630	
Time since CAP Adoption		-0.134		0.003			0.005	
Time since UBC Adoption		-0.215		-0.288			-0.194	
Level 1 (County) Controls								
% Rural Geographic	40.375	***	41.671	***	30.633	***	31.136	***
Mobility	2.338	***	2.282	***	2.121	***	2.097	***
% Black	10.495	*	10.631	*	7.986	*	8.015	*
% Foreign-Born	2.776	***	2.791	***	1.923	***	1.931	***
% Poverty	0.590		0.601		0.519		0.524	*
% Unemployed	-1.249	*	-1.273	*	-0.889	*	-0.899	*
Median Age	0.903	*	0.940	*	0.597		0.612	*
% BA or more	0.385		0.349		0.247		0.234	
% Married	-2.115	***	-2.116	***	-1.713	***	-1.714	***
% 16-24	-2.324	***	-2.288	***	-1.844	***	-1.830	***
Mainline Protestant Rate	0.047	*	0.049	*	0.037	**	0.037	**
					0.020		0.022	
							0.002	***
							0.002	***

Decomposed Crime Rate	0.004	***	0.004	***	0.002	***	0.002	***	0.001	***	0.001	***	0.000	***	0.000	***
Neighboring County Homicide	0.823	***	0.818	***	0.870	***	0.868	***	0.818	***	0.808	***	0.808	***	0.809	***
Federal Firearm Licensees	0.394	*	0.407	*	0.316	**	0.320	**	0.189	*	0.209	*	0.015	***	0.015	***
Level 2 (State) Controls																
South NRA Journal Subscriptions	-7.663		-5.429		-5.873		-4.080		-4.349		-2.860		-0.408		-0.343	
% Republican Legislators	-9.860	*	-8.820		-7.722	*	-6.287	*	-4.631	*	-4.242	*	-0.276		-0.219	
Hunting Licenses	0.311		0.279		0.213		0.197		0.075		0.027		0.013		0.016	
Suicide Rate	-7.700		-9.443	*	-4.244		-5.943	*	-1.852		-3.190		-0.339		-0.393	*
CCW Diffusion	-1.807	*	-1.915	*	-1.188	*	-1.184	*	-0.719	*	-0.901	**	-0.060		-0.052	
SYG Diffusion	0.019		0.005		0.016		-0.009		-0.007		-0.014		0.001		0.000	
CAP Diffusion	0.145		0.147		0.119		0.108		0.071		0.074		0.008		0.007	
UBC Diffusion	-0.021		-0.069		-0.027		-0.056		0.020		-0.026		-0.002		-0.002	
Constant	-0.247		-0.216		-0.178		-0.174		-0.138	*	-0.115		-0.014	*	-0.016	*
	272.791	***	283.800	***	180.108	***	188.467	***	108.177	***	123.508	***	9.112	***	9.275	***
Variance (State)	127.862		152.041		64.631		67.084		5.553		13.913		0.468		0.467	
ICC	0.030		0.035		0.028		0.029		0.004		0.009		0.134		0.134	
N	2999		2999		2997		2997		2999		2999		2999		2999	
AIC	33629.7		33630.9		31739.3		31738.8		30504.7		30508.9		11988.1		11987.3	
BIC	33809.9		33811.1		31919.4		31919		30684.9		30689.1		12168.2		12167.5	

Appendix Table A.5: Results from Two-Level Negative-Binomial Regressions on Homicides in All Counties (n=2,999)

	Total Homicides		Total Firearm-Related Homicides				Total Handgun-Related Homicides		Total Long Gun-Related Homicides	
	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	
Focal Policies										
CCW Law	1.347		1.634				1.450		1.606	
SYG Law	0.963		0.919				0.863		1.058	
CAP Law	1.179		1.331				1.393		1.040	
UBC Law	0.975		0.958				0.968		1.101	
Time since CCW Adoption		0.984		0.986				0.991		0.990
Time since SYG Adoption		0.961		0.952				0.935		0.976
Time since CAP Adoption		1.012		1.018				1.021		1.006
Time since UBC Adoption		0.990		0.989				0.990		0.991
County (Level 1) Controls										
Federal Firearm Licensees	0.996	0.996	0.990	0.990	0.992	0.992	0.997	0.997	0.997	0.997
% Rural	0.941	0.941	0.998	0.997	0.837	0.837	2.458 ***	2.511 ***	2.458 ***	2.511 ***
Geographic Mobility	1.031 ***	1.030 ***	1.036 ***	1.036 ***	1.038 **	1.038 **	1.026	1.025	1.026	1.025
% Black	1.400 ***	1.397 ***	1.577 ***	1.574 ***	1.639 ***	1.635 ***	1.259	1.258	1.259	1.258
% Foreign-Born	1.000	1.000	1.005	1.005	1.001	1.001	0.955 ***	0.955 ***	0.955 ***	0.955 ***
% Poverty	1.016 **	1.016 **	1.019 **	1.019 **	1.015	1.015	1.042 ***	1.042 ***	1.042 ***	1.042 ***
% Unemployed	0.998	0.999	0.996	0.996	1.002	1.002	0.956 *	0.956 *	0.956 *	0.956 *
Median Age	1.002	1.002	1.006	1.006	1.004	1.004	0.991	0.992	0.991	0.992
% BA or more	0.978 ***	0.978 ***	0.976 ***	0.977 ***	0.977 ***	0.977 ***	0.994	0.994	0.994	0.994
% Married	0.966 ***	0.966 ***	0.959 ***	0.959 ***	0.958 ***	0.958 ***	0.985	0.985	0.985	0.985
% 12-24 Mainline Protestant Rate	0.958 ***	0.958 ***	0.953 ***	0.953 ***	0.950 ***	0.950 ***	0.966 *	0.967 *	0.966 *	0.967 *

Decomposed Crime Rate	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***
Neighboring County Homicide	1.000		1.000		1.000		1.001		1.000		1.000		1.000		1.000	
State (Level 2) Controls																
Federal Firearm Licensees	1.048		1.050		1.038		1.039		1.046		1.055		0.993		1.004	
% Rural	0.498		0.922		1.011		2.126		0.525		1.205		7.978		11.421	*
Geographic Mobility	1.117		1.070		1.187		1.122		1.135		1.068		1.066		1.033	
% Black	0.140		0.101	*	0.171		0.119	*	0.202		0.110	*	0.741		0.521	
% Foreign-Born	0.913		0.879		0.936		0.898		0.915		0.854		0.984		0.955	
% Poverty	1.080		1.084		1.083		1.088		1.117	*	1.125	*	1.016		1.021	
% Unemployed	0.915		0.990		0.875		0.954		0.898		0.974		0.843	*	0.897	
Median Age	0.965		0.984		0.978		0.991		0.993		0.970		0.974		1.005	
% BA or more	1.025		1.026		1.021		1.019		1.018		1.027		1.012		1.000	
% Married	0.875	*	0.887	*	0.858	**	0.873	*	0.887	*	0.901		0.926		0.937	
% 12-24	0.779		0.862		0.789		0.878		0.784		0.847		0.805		0.898	
Mainline Protestant Rate	1.000		1.000		1.000		0.999		1.000		0.999		0.998		0.997	
Decomposed Crime Rate	1.000		1.000		1.000		1.000		1.000		1.000	*	1.000		1.000	
Neighboring County Homicide	1.012		1.011		1.023	*	1.021	*	1.033	**	1.033	**	1.577	***	1.491	***
South	1.725		1.602		1.908	*	1.746		1.748		1.688		1.475		1.369	
NRA Journal Subscriptions	0.704		0.779		0.624	*	0.707		0.677		0.768		0.778		0.826	
% Republican Legislators	1.010		1.022		1.012		1.025	*	1.017		1.028	**	1.002		1.013	
Hunting Licenses	1.243		1.124		1.324		1.170		1.230		1.084		1.242		1.163	
Suicide Rate	0.940		0.950		0.929		0.943		0.924		0.926		0.983		0.985	
CCW Diffusion	0.998		0.996		0.999		0.996		0.999		0.997		0.999		0.997	
SYG Diffusion	1.002		0.999		1.002		0.998		1.000		0.995		1.002		0.999	
CAP Diffusion	0.992	*	0.992	*	0.993	*	0.993	*	0.992	*	0.993	*	0.995	*	0.995	
UBC Diffusion	1.002		0.999		1.002		0.999		1.001		0.999		0.998		0.995	

var(State)	1.267 ***	1.246 ***	1.245 ***	1.226 ***	1.218 ***	1.191 ***	1.070 *	1.068 *
N	2999	2999	2999	2999	2999	2999	2999	2999
AIC	12394	12390.4	10488.3	10485.3	8828.2	8824	4323.7	4322.9
BIC	12658.2	12654.6	10752.5	10749.5	9092.4	9088.3	4588	4587.1

Appendix Table A.6: Results from Negative-Binomial Regression using State Clustered Standard Errors

	Total Homicides		Total Firearm-Related Homicides		Total Handgun-Related Homicides		Total Long Gun-Related Homicides			
	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR		
Focal Policies										
CCW Law	0.860		0.631		0.609		0.618			
SYG Law	1.547	**	1.469	*	1.702	**	1.412	*		
CAP Law	0.793	*	0.899		0.935		0.940			
UBC Law	0.855		0.898		0.876		0.900			
Time since CCW Adoption		1.001		0.991		0.992		0.984	*	
Time since SYG Adoption		1.043	*	1.034		1.046	*	1.031		
Time since CAP Adoption		0.997		1.004		1.006		0.999		
Time since UBC Adoption		0.994		0.994		0.993		0.991		
Controls										
Federal Firearm Licenses	1.001	1.000	0.997	0.997	1.001	1.001	0.999	1.000		
% Rural Geographic Mobility	1.069	1.084	0.982	1.011	0.816	0.843	2.275	***	2.394	***
% Black	1.016	1.015	1.043	***	1.040	***	1.043	**	1.039	**
% Foreign-Born	1.233	*	1.230	*	1.614	***	1.617	***	1.671	***
% Poverty	1.022	**	1.021	**	1.009	1.009	1.003	1.002	0.946	***
% Unemployed	1.022	**	1.021	**	1.021	1.022	1.018	1.019	0.946	*
Median Age	0.994	0.994	0.995	0.993	0.999	0.996	0.946	*	0.944	*
% BA or more	0.996	0.995	1.003	1.000	1.003	1.000	0.987	0.984	0.987	0.984
% Married	0.982	***	0.981	***	0.978	***	0.977	**	0.973	**
% 12-24 Mainline Protestant Rate	0.969	***	0.969	***	0.967	**	0.967	**	0.967	**
	0.953	***	0.953	***	0.950	***	0.948	***	0.950	***
	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963
	1.000	1.000	0.999	1.000	1.000	1.000	0.999	1.000	1.000	1.000

Decomposed Crime Rate	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***
Neighboring County Homicide	1.000		1.000		1.001		1.001		1.002		1.002		1.128		1.123	
South NRA Journal Subscriptions	1.743	***	1.656	***	1.938	***	1.885	***	1.992	***	1.950	***	1.362	*	1.390	*
% Republican Legislators	0.929		0.945		0.909		0.954		0.842		0.899		1.002		1.032	
Hunting Licenses	0.993		0.992		0.999		0.998		0.999		0.998		0.998		0.998	
Suicide Rate	0.938		0.919		0.932		0.877		0.986		0.915		1.068		1.018	
CCW Diffusion	1.013		1.013		1.019		1.020		1.012		1.011		1.062	**	1.057	**
SYG Diffusion	1.001		1.001		1.001		1.000		1.003		1.002		0.999		0.998	
CAP Diffusion	1.003		1.004		1.003		1.003		1.003		1.002		1.004		1.004	
UBC Diffusion	0.998		1.000		0.997		0.999		0.997		0.999		0.998		0.998	
	0.997		0.998		0.996		0.997		0.998		0.999		0.989	**	0.990	**
N	2999		2999		2999		2999		2999		2999		2999		2999	
Pseudo R2	0.088		0.086		0.085		0.084		0.089		0.087		0.062		0.062	
AIC	13444.6		13469.9		10922.2		10933.9		9128.9		9145.4		4352.5		4352.5	
BIC	13618.8		13644.1		11096.3		11108		9303		9319.6		4526.7		4526.7	

Appendix Table A.7: Results from Zero-Inflated Negative-Binomial Regression using State Clustered Standard Errors

	Total Homicides		Total Firearm-Related Homicides		Total Handgun-Related Homicides							
	IRR	IRR	IRR	IRR	IRR	IRR						
Focal Policies												
CCW Law	0.848		0.603		0.574							
SYG Law	1.533	**	1.497	*	1.715	***						
CAP Law	0.792	*	0.863		0.909							
UBC Law	0.863		0.864		0.849							
Time since CCW Adoption		1.001		0.993		0.993						
Time since SYG Adoption		1.043	*	1.036		1.047	*					
Time since CAP Adoption		0.997		1.003		1.005						
Time since UBC Adoption		0.995		0.994		0.993						
Controls												
Federal Firearm Licensees	1.001	1.001	1.004	1.004	1.008	1.007						
% Rural	1.079	1.099	1.104	1.125	0.889	0.917						
Geographic Mobility	1.016	1.015	1.039	***	1.035	**	1.040	**	1.035	*		
% Black	1.226	*	1.224	*	1.856	***	1.870	***	1.913	***	1.909	***
% Foreign-Born	0.999	1.000	1.015	1.014	1.009	1.008						
% Poverty	1.022	**	1.022	**	1.024	1.024	*	1.020	1.021			
% Unemployed	0.995	0.994	0.994	0.991	0.998	0.995						
Median Age	0.995	0.994	1.002	1.000	1.002	1.000						
% BA or more	0.982	***	0.981	***	0.981	**	0.979	**	0.976	**	0.976	**
% Married	0.969	***	0.969	***	0.969	**	0.970	**	0.969	**	0.969	**
% 12-24	0.952	***	0.951	***	0.948	***	0.947	***	0.949	***	0.947	***
Mainline Protestant Rate	1.000	1.000	1.000	1.000	1.000	1.000						
Decomposed Crime Rate Neighboring County Homicide	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***	1.000	***
South	1.001	1.000	1.001	1.001	1.002	1.002						
NRA Journal Subscriptions	1.756	***	1.670	***	1.989	***	1.908	***	2.019	***	1.962	***
	0.939	0.955	0.916	0.969	0.850	0.913						

% Republican Legislators	0.993	0.992	0.998	0.996	0.999	0.997
Hunting Licenses	0.939	0.920	0.954	0.891	1.012	0.932
Suicide Rate	1.015	1.015	1.025	1.024	1.016	1.014
CCW Diffusion	1.001	1.001	1.001	1.001	1.003	1.002
SYG Diffusion	1.003	1.004	1.003	1.003	1.002	1.002
CAP Diffusion	0.998	1.000	0.998	1.000	0.997	0.999
UBC Diffusion	0.997	0.999	0.996	0.998	0.998	1.000
Inflate						
Total Population (Logged)	0.512	0.530	0.487 ***	0.495 ***	0.462 **	0.449 **
N	2999	2999	2999	2999	2999	2999
AIC	13413.5	13440.6	10849.6	10873	9105.1	9128.6
BIC	13599.7	13626.8	11035.8	11059.2	9291.3	9314.8

Appendix Table A.8: Results from Two-Level Logistic and Negative-Binomial Regressions on Overall Homicides without Aggregated County-Level Measures

	Binary Homicide		Total Homicide			
	Model 1	Model 2	Model 3	Model 4		
	OR	OR	IRR	IRR		
<i>Focal Independent Variables</i>						
CCW Policy	1.95		0.82			
SYG Policy	3.55		1.12			
CAP Policy	1.12		1.00			
UBC Policy	0.68		0.96			
Time since CCW Passage		0.99			0.99	
Time since SYG Passage		1.03			1.00	
Time since CAP Passage		1.02			1.00	
Time since UBC Passage		0.99			1.00	
<i>Level 1 Controls</i>						
Federal Firearm Licensees ³	1.00		1.00		1.00	
% Rural	0.84	0.85	1.06		1.07	
Geographic Mobility	1.02	1.02	1.03	***	1.03	***
% Black	0.79	0.79	1.31	***	1.31	***
% Foreign-Born	1.01	1.01	1.01		1.01	
% Poverty	1.05	**	1.05	**	1.01	**
% Unemployed	0.99	0.99	1.01		1.01	
Median Age	1.05	*	1.05	*	1.00	
% BA or more	1.01		1.01		0.98	***
% Married	0.97	*	0.97	*	0.96	***
% 12-24	1.00		1.00		0.96	***
Mainline Protestant Rate ³	1.00		1.00		1.00	
2015 Decomposed Crime Rate ³	1.00	***	1.00	***	1.00	***
Neighboring Homicide Rates ¹	1.00		1.00		1.00	
Binary Probability ²			0.21	***	0.22	***
<i>Level 2 Controls</i>						
South	0.55		0.76	*	1.24	*
NRA Journal Subscriptions ⁴	0.33	*	0.39		0.93	
% Republican Legislators	1.00		1.02		1.01	**
Hunting Licenses ⁴	0.53		0.46		1.00	
Suicide Rate ⁴	0.89		0.94		1.00	
Diffusion (CCW)	0.99		0.99		1.00	
Diffusion (SYG)	1.03	*	1.02		1.00	
Diffusion (CAP)	0.99		0.99		1.00	
Diffusion (UBC)	0.99		0.99		1.00	
N	3101	3101	2078		2078	

N (States)	50	50	50	50
AIC	2350.40	2350.94	10815.60	10814.47
BIC	2525.55	2520.05	10990.41	10989.29

Note: OR=Odds Ratio, IRR=Incidence Rate Ratio, * $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed test

¹ Measure refers to average rate of overall homicides in neighboring counties.

² Measure refers to predicted probability of each observation based on logistic regression results.

³ Measure is operationalized per 10,000 residents.

⁴ Measure is operationalized per 100,000 residents.

Appendix Table A.9: Results from Two-Level Logistic and Negative-Binomial Regressions on Firearm-Related Homicides without Aggregated County-Level Measures

	Binary Homicide		Total Homicide			
	Model 1	Model 2	Model 3	Model 4		
<i>Focal Independent Variables</i>	0.25		1.12			
CCW Policy	3.32		0.83			
SYG Policy	1.58		1.11			
CAP Policy	0.66		0.94			
UBC Policy		0.95		0.99		
Time since CCW Passage		1.10		1.00		
Time since SYG Passage		1.00		1.01		
Time since CAP Passage		0.99		1.00		
Time since UBC Passage						
<i>Level 1 Controls</i>	0.99	0.99	1.00	1.00		
Federal Firearm Licensees ₃	0.99	0.97	1.12	1.13		
% Rural	1.03	1.03	1.03 ***	1.03 ***		
Geographic Mobility	1.16	1.14	1.43 ***	1.42 ***		
% Black	1.00	1.00	1.02 **	1.02 **		
% Foreign-Born	1.02	1.02	1.01 *	1.01 *		
% Poverty	1.01	1.01	1.00	1.01		
% Unemployed	1.02	1.02	1.01	1.01		
Median Age	0.98	0.98	0.98 ***	0.98 ***		
% BA or more	0.98	0.98	0.95 ***	0.95 ***		
% Married	0.99	0.99	0.95 ***	0.95 ***		
% 12-24	1.00	1.00	1.00	1.00		
Mainline Protestant Rate ₃	1.00 ***	1.00 ***	1.00 ***	1.00 ***		
2015 Decomposed Crime Rate ₃	1.00	1.00	1.00 **	1.00 **		
Neighboring Homicide Rates ₁			0.23 ***	0.24 ***		
Binary Probability ₂						
<i>Level 2 Controls</i>	0.92	1.32	1.31 **	1.37 **		
South	0.18 ***	0.11 ***	0.82 *	0.88		
NRA Journal Subscriptions ₄	1.00	1.02	1.01 **	1.01 ***		
% Republican Legislators	3.01 *	1.81	1.06	1.00		
Hunting Licenses ₄	0.94	0.86	1.00	1.01		
Suicide Rate ₄	1.01	1.01	1.00	1.00		
Diffusion (CCW)	1.03 *	1.03 *	1.00	1.00		
Diffusion (SYG)	0.99	0.99	1.00	1.00		
Diffusion (CAP)	1.01	1.01	1.00	1.00		
N	3101	3101	1702	1702		
N (States)	50	50	50	50		
AIC	2641.35	2655.34	8419.533	8416.775		

BIC	2816.50	2830.49	8588.159	8585.401
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Note: OR=Odds Ratio, IRR=Incidence Rate Ratio, * $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed test

¹ Measure refers to average rate of overall homicides in neighboring counties.

² Measure refers to predicted probability of each observation based on logistic regression results.

³ Measure is operationalized per 10,000 residents.

⁴ Measure is operationalized per 100,000 residents.

Appendix Table A.10: Results from Two-Level Logistic and Negative-Binomial Regressions on Handgun-Related Homicides without Aggregated County-Level Measures

	Binary Homicide		Total Homicide	
	Model 1	Model 2	Model 3	Model 4
<i>Focal Independent Variables</i>				
CCW Policy	0.85		0.73	
SYG Policy	2.03		1.17	
CAP Policy	1.34		1.14	
UBC Policy	0.66		0.92	
Time since CCW Passage		0.96		0.99
Time since SYG Passage		1.03		1.00
Time since CAP Passage		1.02		1.01
Time since UBC Passage		0.98		1.00
<i>Level 1 Controls</i>				
Federal Firearm Licensees ₃	0.99	0.99	1.00	1.00
% Rural	0.54 *	0.54 *	0.94	0.96
Geographic Mobility	1.06 *	1.06 *	1.04 ***	1.04 ***
% Black	1.40	1.39	1.40 ***	1.40 ***
% Foreign-Born	0.98	0.98	1.01	1.01
% Poverty	1.02	1.02	1.01	1.01
% Unemployed	1.00	1.00	1.02	1.02
Median Age	1.02	1.03	1.00	1.00
% BA or more	0.97	0.97	0.99 *	0.99 *
% Married	0.99	0.99	0.95 ***	0.95 ***
% 12-24	0.97	0.97	0.94 ***	0.94 ***
Mainline Protestant Rate ₃	1.00 *	1.00 *	1.00	1.00
2015 Decomposed Crime Rate ₃	1.00 ***	1.00 ***	1.00 ***	1.00 ***
Neighboring Homicide Rates ₁	1.00	1.00	1.00 ***	1.00 ***
Binary Probability ₂			0.20 ***	0.20 ***
<i>Level 2 Controls</i>				
South	1.48	1.85	1.37 **	1.44 ***
NRA Journal Subscriptions ₄	0.29 **	0.33 **	0.85 *	0.90
% Republican Legislators	1.03	1.04 *	1.01 **	1.02 ***
Hunting Licenses ₄	0.79	0.67	1.07	1.01
Suicide Rate ₄	0.88	0.92	0.99	0.99
Diffusion (CCW)	1.01	1.00	1.00	1.00
Diffusion (SYG)	1.02	1.01	1.00	1.00
Diffusion (CAP)	0.98	0.99	1.00	1.00
Diffusion (UBC)	1.00	1.00	1.00	1.00
N	3101	3101	1491	1491
N (States)	50	50	50	50
AIC	2687.45	2686.78	7163.14	7163.30

BIC 2862.60 2861.93 7327.66 7327.82

Note: OR=Odds Ratio, IRR=Incidence Rate Ratio, * $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests

¹ Measure refers to average rate of overall homicides in neighboring counties.

² Measure refers to predicted probability of each observation based on logistic regression results.

³ Measure is operationalized per 10,000 residents.

⁴ Measure is operationalized per 100,000 residents.

Appendix Table A.11: Results from Two-Level Logistic and Negative-Binomial Regressions on Long Gun-Related Homicides without Aggregated County-Level Measures

	Binary Homicide		Total Homicide	
	Model 1	Model 2	Model 3	Model 4
<i>Focal Independent Variables</i>				
CCW Policy	1.28		0.88	
SYG Policy	1.66		0.96	
CAP Policy	1.12		1.05	
UBC Policy	0.91		1.04	
Time since CCW Passage		0.99		0.99 **
Time since SYG Passage		1.02		1.00
Time since CAP Passage		1.01		1.00
Time since UBC Passage		0.99		1.00
<i>Level 1 Controls</i>				
Federal Firearm Licensees ³	1.00	1.00	1.00	1.00
% Rural	1.64	1.65	4.12 ***	4.13 ***
Geographic Mobility	1.03	1.03	1.05 **	1.05 **
% Black	1.02	1.01	1.38 **	1.39 **
% Foreign-Born	1.00	1.00	0.98	0.98
% Poverty	1.03	1.03	1.04 ***	1.03 ***
% Unemployed	0.97	0.97	0.95 ***	0.95 **
Median Age	1.02	1.02	0.97 *	0.98
% BA or more	0.99	0.99	0.99	0.99
% Married	0.98	0.97	0.99	0.99
% 12-24	0.99	0.99	0.94 ***	0.95 ***
Mainline Protestant Rate ³	1.00	1.00	1.00	1.00
2015 Decomposed Crime Rate ³	1.00 ***	1.00 ***	1.00 **	1.00 **
Neighboring Homicide Rates ¹	1.32 ***	1.32 ***	1.08 ***	1.08 ***
Binary Probability ²			0.63	0.62
<i>Level 2 Controls</i>				
South	0.85	0.93	1.08	1.11
NRA Journal Subscriptions ⁴	0.40 ***	0.42 **	1.33 ***	1.32 ***
% Republican Legislators	1.01	1.02	1.00	1.00
Hunting Licenses ⁴	0.92	0.88	1.03	1.02
Suicide Rate ⁴	0.93	0.94	1.06 ***	1.07 ***
Diffusion (CCW)	1.00	1.00	1.00	1.00
Diffusion (SYG)	1.01 *	1.01	1.00 *	1.00 *
Diffusion (CAP)	0.99	0.99	1.00	1.00
Diffusion (UBC)	0.99	0.99	1.00	1.00
N	3101	3101	776	776
N (States)	50	50	50	50

AIC	2654.90	2655.45	2511.99	2502.96
BIC	2830.04	2830.59	2651.61	2642.59

Note: OR=Odds Ratio, IRR=Incidence Rate Ratio, * $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed test

¹ Measure refers to average rate of overall homicides in neighboring counties.

² Measure refers to predicted probability of each observation based on logistic regression results.

³ Measure is operationalized per 10,000 residents.

⁴ Measure is operationalized per 100,000 residents.

Appendix Table A.12: Mediation Effect of NRA Campaign Contributions on Firearm Policy Adoption via Republican Governorships

	CCW		SYG		CAP		UBC	
	Republican Governor	CCW Adoption	Republican Governor	SYG Adoption	Republican Governor	CAP Adoption	Republican Governor	UBC Adoption
	b	b	b	b	b	b	b	b
NRA Campaign Contributions	-0.08	0.66	-0.154	0.20	-0.24 **	1.04 *	-0.299 ***	1.30
Republican Governor		-0.29		0.08		0.89		-1.37
Direct Effect		0.66		0.20		1.04 *		1.30
Indirect Effect		0.02		-0.01		-0.21		0.41
N	545		991		688		1075	

Note: CCW=Concealed Carry Weapons; SYG=Stand Your Ground; CAP=Child Access Prevention; UBC=Universal Background Checks; All models control for all other political opportunities and controls outlined in Table 2.1.; * p<.05, ** p<.01, *** p<.001, two-tailed test

Appendix Table A.13: Results of Event History Analyses using Republican Majority Measure

	CCW		SYG		CAP			UBC	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	
	OR	OR	OR	OR	OR	OR	OR	OR	
Campaign Contributions	1.40	2.44	1.67	4.92 *	4.66	7.37 **	2.52	2.47	
NRA Journal Membership	0.46	0.34	0.75	0.82	0.28	0.27	33.89 **	29.51 **	
Republican Majority	3.17	4.68	8.50 **	24.32 **	0.04 **	0.06 *	1.30	0.94	
Republican Governor	1.32	1.43	0.95	1.01	4.76	5.31 *	0.09	0.09	
Diffusion Measure	1.01	1.01	0.97 *	0.96 *	1.00	1.00	1.13	1.13	
Gun Policy Mood	0.95	0.95	1.16	1.16	1.46 ***	1.48 ***	0.74	0.74	
Hunting Licenses	2.04	2.05	0.57	0.46	0.82	0.64	86.80	89.43	
% Urban	0.98	0.99	1.05	1.08	1.17 ***	1.21 ***	1.79	1.79	
% Poverty	1.20	1.23	1.42	1.53 *	0.51 ***	0.49 ***	0.22	0.23	
% Black	0.93	0.95	0.97	0.97	0.96	0.96	0.68	0.68	
% Foreign-Born	0.86	0.83	0.86	0.83	0.99	0.95	0.69	0.69	
% Female	0.03	0.02	2.97	2.90	0.03	0.02	0.76	0.77	
% Evangelical	0.90	0.89 *	0.99	0.99	1.06	1.07	0.49	0.49	
% HS or more	0.97	0.95	1.14	1.14	0.71 **	0.67 **	1.88	1.88	
Median Age	1.00	1.00	0.95	0.94	0.68 ***	0.67 ***	2.14	2.12	
Violent Crime Rate	1.00	1.00	1.00	1.00	0.99 **	0.99 *	1.00	1.00	
Incarceration Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.02	1.02	
Citizen Ideology	0.95	0.96	1.03	1.05	1.02	1.03	0.92	0.92	
South	4.56	3.56	12.65	21.54	13.20 *	13.91 *	1372.00	1196.90	
Year	0.85	0.84	1.47 **	1.52 **	1.02	1.04	1.32	1.30	
Campaign Contributions X Republican Majority		0.43		0.23		0.13 **		1.43	
N	545	545	991	991	688	688	1075	1075	
Pseudo R2	0.187	0.193	0.264	0.281	0.487	0.502	0.477	0.477	
AIC	221.6	222.2	208.3	206.4	134.8	134.2	89.37	91.32	
BIC	311.9	316.8	311.1	314.2	230	233.9	189	195.9	

Note: OR=Odds Ratio; two-tailed tests; * p<.05, ** p<.01, *** p<.001

Appendix Table A.14: Mediation Results Using Republican Majority Measure

	Gun Rights Policies				Gun Control Policies			
	Rep. Maj.	CCW	Rep. Maj.	SYG	Rep. Maj.	CAP	Rep. Maj.	UBC
	OR	OR	OR	OR	OR	OR	OR	OR
Campaign Contributions	1.237	2.049	1.557 ***	1.15	1.547 ***	2.031	1.424 ***	2.649
Republican Majority		1.13		3.053		0.186		0.273
		Coef.		Coef.		Coef.		Coef.
Direct Effect		0.717		0.14		0.708		0.974
Indirect Effect		0.026		0.494		-0.734		-0.459
N	545		991		688		1075	

Note: OR=Odds Ratio; two-tailed tests; * p<.05, ** p<.01, *** p<.001; Rep. Maj.=Republican Majority; CCW=Concealed Carry Weapons; SYG=Stand Your Ground; CAP=Child Access Prevention; UBC=Universal Background Checks

¹ All models control for NRA Journal Subscriptions, Republican Governor, Policy-Specific Diffusion, Hunting Licenses, % Urban, % Poverty, % Black, % Foreign-Born, % Female, % Evangelical, % High School or more, Median Age, Violent Crime Rate, Incarceration Rate, Citizen Ideology, Southern Census Region, and Year

Appendix Table A.15 : Effect Firearm-Related Policies were Adopted on Odds of Reported Homicide without Confounding Factors

	Overall Homicides		Firearm-Related Homicides		Handgun-Related Homicides		Long Gun-Related Homicides	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	OR	OR	OR	OR	OR	OR	OR	OR
CCW		0.177 *		0.160 **		0.179 **		0.305 **
SYG		1.285		1.331		1.388		1.291
CAP		1.371		1.689		1.699		1.285
UBC		1.049		0.744		0.755		0.909
Time since CCW Adoption	0.999		0.983		0.983		0.991	
Time since SYG Adoption	0.973		0.996		1.005		1.000	
Time since CAP Adoption	1.026		1.033 *		1.034 *		1.019	
Time since UBC Adoption	1.016		0.998		0.996		0.998	
N	3131	3131	3131	3131	3131	3131	3131	3131
AIC	3396.40	3391.10	3754.60	3747.00	3872.60	3865.00	3275.20	3269.50
BIC	3432.70	3427.40	3790.80	3783.30	3908.90	3901.30	3311.50	3305.70

OR=Odds Ratio; * p<.05, ** p<.01, *** p<.001; CCW=Concealed Carry Weapons; SYG=Stand Your Ground; CAP=Child Access Prevention; UBC=Universal Background Check

Appendix Table A.16: Effect of Firearm-Related Policies on Number of Reported Homicides without Confounding Factors

	Overall Homicides		Firearm-Related Homicides		Handgun-Related Homicides		Long Gun-Related Homicides	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR
CCW		0.703		0.706		0.657		1.557
SYG		1.331		1.357		1.472		1.396
CAP		1.144		1.256		1.338		0.992
UBC		0.930		0.910		0.915		0.953
Time since CCW Adoption	0.991		0.990		0.989		1.003	
Time since SYG Adoption	1.018		1.021		1.030		1.035	
Time since CAP Adoption	1.011		1.014		1.017		1.000	
Time since UBC Adoption	0.986		0.985		0.987		0.989	
N	3131	3131	3131	3131	3131	3131	3131	3131
AIC	13667.00	13668.30	11658.20	11659.80	9777.40	9778.00	4529.90	4527.50
BIC	13709.40	13710.70	11700.60	11702.10	9819.80	9820.40	4572.30	4569.90

Note: IRR=Incidence Rate Ratio; * p<.05, ** p<.01, *** p<.001; CCW=Concealed Carry Weapons; SYG=Stand Your Ground; CAP=Child Access Prevention; UBC=Universal Background Check