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Issue Salience and Lawmaking: How Public Attention Drives Lawmaker Behavior

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Issue Salience and Lawmaking: How Public Attention Drives Lawmaker Behavior

by

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Issue Salience and Lawmaking: How Public Attention Drives Lawmaker Behavior
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The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above mentioned discipline.
This dissertation advances issue salience as a theoretical concept in lawmaking. Often, issue salience is used as a control or omitted from analyses that focus on other concepts in lawmaking such as public opinion, constituent demographics, and lawmaker characteristics. I argue that the field’s theoretical understanding of lawmaking is incomplete without considering issue salience. In order to insert issue salience into current models of lawmaking, the concept must be better defined. I uncover various nuances in issue salience by parsing out differences in issues and the lawmaking entity that is the receiver of the signal. I do so by tracing the path of issue salience to lawmaking considering if the salience was exogenous or created by lawmakers, if the salience was created by a symbolic issue or resource issue, and if the salience is measured nationally or locally. I find lawmaking behaviors like bill sponsorship or the changing of statutes differs depending on how the issue salience was created.

This dissertation also introduces a new data set. Using content from front page articles from 40 state newspapers, the data allow for the tracking of issue salience across time (2001-2016) and states. The result is content from over 580,000 articles used to measure various types of issue salience over time and across states. This is the first project to use data that allow for comparisons of issue salience across sub-national areas that are measured in the name units. The data allow for more specific analyses of issue salience and for models that are built on national level data to be tested at the state level.
Dedication

For my parents Anne and Tom, and Super Bowl Champion Nick Foles
Acknowledgements

For those that read this dissertation, know that it is the result of assistance from a countless number of incredible people. The good sections are a direct result from that assistance, all mistakes are my own.

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Chapter 1

Introduction

This introductory chapter outlines the main contributions and arguments made about issue salience in lawmaking by this dissertation. I argue that issue salience needs more specific definitions to grow as a literature. I identify a guideline for better specifying theories of salience and identify similar concepts that are often incorrectly used as a proxy for salience. There are two main contributions made by this dissertation. First, new theoretical expectations for how different types of salience should affect lawmaking and policy outcomes. Second, new data that allow for the exploration of questions of issue salience at both the national and state level. Combined, this dissertation both treats issue salience as a theoretically complex concept and provides both theoretical and an empirical foundations for future advancements.

1.1 Motivation

Early in political science, fundamental arguments and analyses of American democracy were founded upon what issues were important and why. Key et al. (1966) wrote about the battle for attention as they described the American electorate competent enough to cast a vote for the party or politician that would best represent their most important issues. Schattschneider (1975) wrote about pluralism when describing his displacement of conflicts and lines of cleavages. In order to understand the American political system, political scientists needed to answer fundamental questions such as do issues change from election to
election? Are the amount of issues that voters care about small or large? Do voters cast ballots based on the issues they feel are the most important? Attempts to explain what issue salience is and how to measure it are as common today as they were back then (Epstein and Segal 2000; Wlezien 2005; Wlezien and Soroka 2007; Jones and Baumgartner 2004; Canes-Wrone 2010; Lax and Phillips 2012). Despite advances in measuring issue importance and gathering data on what types of issues political leaders work on, the field still lacks a basic understanding of how salience interacts with lawmaking in a variety of contexts. Without a better and more defined vernacular to discuss salience the field will continue to place issue salience measures in models of lawmaking but not treat it as a variable of theoretical interest.

It is not the aim of this dissertation to provide a single definition of salience that covers all contexts. Rather, this dissertation provides the groundwork for better defining salience within the contexts of specific research areas in lawmaking. Salience is a broad concept that is loosely related to attention. The definition of attention should change to fit the subject and issues within a study. The definition section of this chapter provides a guideline for how researchers should define salience and how far they should claim their research extends based on the audience and issues their study pertains to.

A second contribution is to apply the new definition of issue salience to various law-making actions to show how salience changes policy outcomes. This contribution aims to advance the study of issue salience theoretically. When do lawmakers generate issue salience and when are they forced to react to it? Does salience always lead to large swings in public opinion? How does the level of attention an issue receives affect bargaining on that issue? Do national lawmakers react to salient issues faster than state lawmakers? These questions are addressed through careful theory building and empirical testing using new data.

A third contribution of this dissertation is to provide new data on issue salience that allows for uniform measurement across many forms of salience and different states. I accomplish this by gathering regional news coverage that allows for analysis at both the state and national level. The data are from 40 major state newspapers spanning 2001-2016. These data
allow for empirical tests of more detailed questions regarding salience.

The purpose of this chapter is to provide a background on issue salience in political science, review current measurements of the concept, provide my own definition, show why regional data are needed, and connect issue salience to lawmaking behavior.

1.2 Literature Review on Issue Salience, Past and Present

Wlezien (2005) perhaps best described the current state of salience in political science “It is customary to write about salience but less common to define it.” By demonstrating the lack of specificity when using issue salience in analysis, this section reviews issue salience in political science in the past and present. It also presents how other disciplines like marketing and media studies view salience and why their distinctions are useful for political science.

1.2.1 Early Work

Early political science was interested in why some issues entered the national political debate and why others were omitted. Wlezien viewed the selection of issues in a plural system as the main point of tension between interested groups. According to Schattschneider, the battle over public policy was decided by lines of societal cleavage. He likened the political landscape to a battlefield where opposing forces could change the lines of cleavage by changing the subjects that were in the debate. A losing side could move to change the subject to avoid taking bad policy losses. Often, parties were seen as a linkage institution that decided where the lines would be drawn (McClosky et al., 1960). Others believed that the same main issue, the size and scope of government, would persist across time (Aldrich, 1995). A successful strategy for those losing a battle over public policy was the change the line of cleavage or in the parlance of today change the subject. Pivoting away from a losing subject is a commonly deployed tactic in American politics. Parties in control of Congress purposefully avoid contentious issues, especially those that will split the party (e.g. Cox and McCubbins (2005) in a more modern theory). Really, this line of thought is an early conceptualization of
issue salience. Political outcomes were based on which line of cleavage was salient and which was not. Like most early works, Schattschneider did not produce many specific testable hypotheses or use data. Rather, his aim was to generate more general thoughts on how the American political system worked.

These early ways of thinking about issues and policy making would be picked up by policy scholars (Baumgartner and Jones, 2010; Zahariadis, 2014). These theories took old ideas of pluralism and placed them in models of policy change. “Punctuated Equilibrium” viewed issue salience as an essential ingredient needed for policy change. They saw that large shifts in public opinion and issue definitions were a function of large and often shocking salient events that changed the public’s prior opinion or understanding of a given issue. Their examples ranged from new medical reports on the health risks from smoking to Three Mile Island and a new focus on the safety of nuclear energy. In these examples, exogenous events would redefine the issue, public opinion would shift, and large changes to policy would result. They kept in elements of pluralism. After the salient event, interested groups would mobilize to influence the ensuing policy changes. Political parties also took a role as actors that could transform a policy subsystem by bringing the issue into the national debate.

These early models of issue salience and lawmaking are a foundation to the field’s understanding of dynamics of policy change and public attention. However, there are still many unanswered questions and unexplained processes in the American political system regarding issue salience that require additional theory, data, and methods. There are many contexts left to be explored. Do traditional models of policy change and issue salience apply at the state and local level? Are results robust to various measurements of salience? Is it possible to test these theories with more general empirical models that extend past case studies?

To summarize, issues were an important part of early political science, yet little was done to carefully define what an issue was, what salience meant, and how to measure these concepts. Rather, each early work would pick specific issues that best fit the work’s larger
argument.

1.2.2 Contemporary Work on Issue Salience

Early works, although useful in identifying core questions and defining later lines of literature were intended to be wide reaching. Early research on salience relied less on data and more on narrative. A pioneer in quantitative work in political science, V.O. Key used demographic breakdowns of ballot returns in his work explaining how Americans were sufficiently intelligent enough to vote based on issues (Key et al., 1966). Although an important piece that advanced methodologies in political science, Key was forced to guess which issues were the most important in each election that he studied. The ability to measure which issues were important was not yet possible. Since Key’s analysis, there have been substantial advancements in measuring issue salience. However, there are few advancements in better defining the concept and working it into existing theories of government.

There is surprisingly little work to cover that considers salience at a conceptual level. Perhaps the best analysis is Wlezien (2005) in his critique of “most important problem” (MIP) as a measure of salience. In his review he identifies some that view salience as prominence (Taylor and Fiske, 1978) and others that view it as importance (Baumgartner and Jones, 2010). The most common technique used to define salience is to find synonyms that comport with the measurement later presented in the empirical section of the analysis. For example, Bromley-Trujillo et al. (2014) define salience as “a level of concern, interest or importance placed on a given issue” (2005, 5) and then proceed to cite Wlezien. Conveniently, their measure is survey data that asks the respondent about their level of concern of climate change and the importance of the subject to the respondent. Take Hayes and Bishin (2012), salience “refers to issue visibility or importance” (135). To their credit, they later define visibility and importance but fail to connect their measurement of salience to their definition. Although finding synonyms is better than skipping the definition completely, it still glosses over how salience works in their theory of state government response to environmental concerns.
Although salience appears in many analyses, there is no consensus on how it affects lawmakers or policy outcomes. Lack of consensus is present in many lines of political science literature. However, it is unlikely that a single definition of salience will create a more productive research environment. Later, I will argue that many who write about salience are not exact and treat issue salience the same across contexts.

Defining salience is not a problem isolated to political science (Myers and Alpert, 1977; Ehrenberg et al., 1997). In marketing, is brand salience recognition, how often a person thinks about the product, or even how the person feels about the product? Marketing approaches salience from the individual’s level. Salience in marketing is similar to work in political science on how respondents answer surveys. Marketing often operationalizes salience as how quickly a person recognizes a brand or how often a brand comes to mind during a buying situation (Guido, 2001; Romaniuk and Sharp, 2004). Their concept of salience shares many similarities with theories of top of the head responses to survey questions (Zaller, 1992). Often, studies in marketing separate brand salience and brand valence. Therefore, it is possible for a brand to be highly salient yet have a poor average valence among consumers. For example, when buying a car, a consumer may think of a well known company but choose not to purchase the car because she associates the brand with poor quality. This distinction is useful in political science. Too often, researchers conflate issue salience with issue attitudes, leading to jumbled theories and poorly defined models.

1.3 Defining Issue Salience

The fundamental issue of defining salience is that the concept itself is too large. Imagine trying to provide a single definition of opinion. Political science has long argued over what constitutes an opinion for an individual (Converse, 1964; Zaller, 1992; Taber and Lodge, 2006) much less what constitutes mass public opinion (Erikson et al., 2002). Lessons derived from individual level studies may not apply to macro level opinion. Further, those that study individual level opinion tend not to generalize their findings to macro studies of opinion. In
order to better conceptualize salience, the concept should be broken into different levels and contexts as findings may change according to the subject of the study. For any field to advance, it must specialize. What follows is a guideline to best specialize the field of issue salience in lawmaking.

Any study that uses issue salience should be careful to specify two important aspects of issue salience: what is the issue and what audience is the issue salient to? These two components of issue salience should divide issue salience into many categories. Examples of issues are specific one time issues, issues that generalize over time, issues specific to lawmakers, and issues driven by events. Examples of audiences are individuals, the public, national lawmakers, state lawmakers, or a specific branch of government.

The first, what is the issue? An issue can take on many forms ranging from very specific to very general. A study can concern itself with one very specific issue that will not reoccur over time (Box-Steffensmeier et al., 1997) or create a general framework to categorize specific issues into broader topics that can be measured over years or even decades (Baumgartner et al., 2013; Boydstun, 2013; Boydstun et al., 2014b). Take Box-Steffensmeier et al. (1997) for example. These authors investigated when lawmakers announce vote intentions based on how salient NAFTA was for each lawmaker. The issue in this study was NAFTA. It is possible to generalize NAFTA into a broader category using a framework like the Policy Agendas Project (PAP) (Baumgartner et al., 2010). In this classification system, NAFTA would fall under category 18 (foreign trade). Choosing the level of abstraction presents a trade off. Studies that focus on specific issues should obtain more accurate measurements but findings will likely not transport across many types of issues. Studies that pick many issues and categorize them based upon some predetermined system should generate findings that travel across many types of issues but there should be concerns about measurement accuracy and the quality of the topics used to categorize specific issues.

Choosing the level of abstraction is not the only definition of issue. An issue can take on many forms other than a specific field of policy. Issues can relate to specific actions of law-
makers like scandal (Kiousis, 2003) or how salient individual lawmakers are. Surveys that ask respondents to name their representatives in government are inherently asking about salience. In this example, this issue is a specific lawmaker and the audience is the survey respondent. Findings pertaining to what factors allow for better identification of lawmakers may not travel to other types of issues such as policy specific ones.

The second, what is the audience? For something to be salient, there must be some other individual or group to which the object is visible. What the group or individual is can greatly affect how issue salience changes lawmaking outcomes. For example, Congress tends to show much more sophistication in terms of the number of issues it handles at once and how it breaks those issues apart compared to the public (Jones and Baumgartner, 2004). Therefore, studies of issue salience that focus on a branch or level of government may greatly differ from studies that focus on the public as the audience. Those that study issue salience on an individual level, say a respondent asked to identify the “most important problem” (Wlezien, 2005; Wlezien and Soroka, 2007) would make an ecological fallacy to apply their findings to mass issue salience.

Specific to American politics, studies of issue salience should also be concerned about how issue salience works at different levels of government. In the United States, the actions of lawmakers in national government garner much more attention those the actions of lawmakers in state or local government. There are interesting differences in how salience works at the state level (Lax and Phillips, 2009a, 2012) and how it works at the national level (Baumgartner and Jones, 2010). This interesting variation should be explored and used to discover why issue salience leads to an array of policy outcomes.

I argue that the best way to define issue salience is to break it apart. Before the field of issue salience in policy making can advance, it needs to better define the issues and audiences related to the study. What then should and should not be used to measure issue salience?
1.4 Measuring Issue Salience

In accordance with specifying both the issue and the audience, this section discusses issue salience in the context of lawmaking and both specific and general issues. As this dissertation studies macro salience and its relation to policy outcomes, individual level measurements of salience such as how respondents answer survey questions are not a main focus. Contemporary studies of issue salience in lawmaking use one of four main methods to gauge how much attention a given issue received over a specific period of time. Those four methods are aggregation of MIP, Google Trends, conditions, and the analysis of newspaper coverage. In this section I cover the strengths and disadvantages of each strategy coming to the conclusion that newspaper analysis provides the greatest upside.

1.4.1 Most Important Problem

Perhaps the most widely used, MIP asks survey respondents to identify which issue is most important to them from a predetermined list. MIP offers several advantages if the audience of the study is the public. First, it directly asks citizens for their opinion. There is no need to use proxies. Second, it comports well with the actions of lawmakers. If the MIP question used allows for a respondent to choose from a list of 10 issues, lawmaker action such as bill sponsorship could be categorized into the same 10 issues with some additional work. Finally, MIP has been on surveys like the American National Election Studies for decades so time series data may be constructed further back in time compared to some of the other measures of issue salience.

MIP is not without major measurement problems and other limitations. Wlezien (2005) identified several of those problems, namely that respondents are pushed to identify issues that are a cause for a concern rather than issues that they most pay attention to. Although a later study (Wlezien and Soroka, 2007) quelled some of those concerns, it did show that respondents are pushed toward issues that were an immediate problem.
There are several other limitations of MIP. First, the list respondents have to choose from is rather limited, thus allowing for little issue granularity. Respondents are seldom adept in navigating a complex or long survey. Therefore, most MIP questions are limited to a dozen to 20 issues. Second, getting MIP for sub-national regions requires a large amount of resources. Most surveys that ask about MIP are national samples that cannot be easily split into the state level. These two factors only allow studies to ask national questions and limit those questions to a small number of broad issues. The second two methods, Google Trends and Newspaper content analysis are not limited in these ways.

1.4.2 Google Trends

Google Trends has the potential as powerful tool to measure issue salience. The tool tracks searches from all Google users to show the frequency of searches over time and across areas such as countries and states. It is most useful in tracking specific issues that can be contained within a single search term or phrase (Mellon, 2014). A larger trend such as “the economy” or “healthcare” would require a list of terms a phrases to track over time.

Although Google Trends presents incredible capabilities to track issue salience across time and space, it is unusable to researchers. Google has obfuscated the results so that search terms cannot be compared. In 2011, Google “normalized” results from 0-100. For example, if a researcher were to look at the search trends for “Donald Trump” in the year 2016, it would show a spike after the election at 100 points meaning that time period had the highest searches. This makes multiple terms incomparable as they will be scaled differently. For researchers to use Google search results, they must partner with the company. Should Google Trends revert back to showing the actual number of searches, it could become a powerful tool for measuring issue salience.
1.4.3 Conditions

Most measures of issue salience are national. MIP samples are nationally representative and newspaper coverage has largely been used to get national measures. How then should researchers measure how issue salience varies by sub-national regions? The answer, up until now, has been to collect different state or district conditions that are at best a proxy for issue salience. Examples include using crime rates to measure crime salience or the number employed by the agriculture industry as other proxies for salience (Adler, 2002; Woon, 2009). At the time, conditions were the best measure available, however, they present some issues concerning measure validity and accuracy. On the accuracy, some conditions do not properly capture issue salience variation across time. Take the take employed by the agriculture industry per capita (Woon, 2009). It should capture variation across states as Nebraska has a higher number than New Jersey, but it may not capture important variation over time. There should be more interest in agriculture issues when the “Farm Bill” is up for drafting and votes in Congress. There are likely not meaningful variations in agricultural employment that correspond with Congressional action on agriculture. Second, units are not commensurable. Crime rates are not measured in the same units as number of members of the military in state. It is difficult to compare the relative salience of two issues if those issues are not using the same units.

Another issue with conditions is that it actually may measure a concept that is not issue salience. Delegate and trustee models of representation debate if members vote based on what they think their constituents would want or what they think is best based on conditions and additional knowledge (Adler et al., 2018; McCrone and Kuklinski, 1979). If a member of Congress is more aware of district conditions, they may work to address those conditions through various forms of lawmaking. Those actions do not mean that the member is responding to issue salience. That member could be responding to a condition that most constituents are unaware of making claims of issue salience influencing member
1.4.4   Newspaper Analysis

One of the more popular methods to measure issue salience is the analysis of newspaper content (Epstein and Segal, 2000; Baumgartner et al., 2010; Boydstun, 2013; Atkinson et al., 2014; Boydstun et al., 2014b). These techniques allow for researchers to track issues over time based on the frequency of coverage in a given publication or publications. Newspaper analysis has many strengths and a few weaknesses. At this point, it remains the strongest measure of issue salience used in political science.

One of the main concerns about using newspaper coverage is media bias. Does newspaper coverage accurately reflect the issues the average citizen is concerned about or at least pays attention to? One concern is that media attention directs issue salience and is not an exogenous measure. Research from communications scholars shows that online discussions about election topics precede those election topics appearing in various forms of news media (Roberts et al., 2002; Sweetser et al., 2008). Even if media coverage does influence the issues that are salient to the public, they would still be a good measure as they are capturing the topics that are on the mind of citizens.

Newspaper content analysis comes in many forms. Some have used the front page (Boydstun, 2013), others use the editorials (Binder, 1999), and still others use random samples from various sources (Baumgartner et al., 2010). Often, the content of each story is analyzed and counted using some coding system. The most popular is the Policy Agendas Project that categorizes policies into 20 major topics and 240 minor topics. This system is useful as it is used to code both measures of issue salience and various forms of lawmaker behavior such as bill sponsorship (Adler and Wilkerson, 2006) and committee hearings. This system makes linking issue salience and the dependent variable quite easy. Most works using the PAP are general projects that use a variety of policies in the analysis. For example,
Boydstun’s work takes all front page articles of the New York Times and classifies them using the PAP system. Not all work on issue salience uses a general approach.

Another method of measuring salience is to study one area of policy and measure the relative salience using database hits (i.e. [Bromley-Trujillo et al., 2014]). This technique is similar to using Google Trends, but instead of normalized results that are incomparable, the database returns a number of stories. The most common database used is Lexis Nexis. A researcher can choose a publication and a series of key words to search for. Lexis Nexis will return every article in the database that matches a keyword. Although useful for getting a rough estimate of salience for a given issue over time, researchers should be wary using this technique across multiple issues and multiple sources. Databases like Lexis Nexis or Proquest have varying amounts of articles available for given publications. The availability of each source varies year to year or even month to month lead to potential measurement error. If the pool of articles used in a search expands and shrinks over time, that variation could lead to false trends in issue salience as the search should return more of fewer articles based on the size of the pool.

This dissertation uses a variety of newspaper articles from 40 different sources. However, to get around the problem of variability in available articles, this dissertation only pulls articles from the front pages of each source. This technique nearly eliminates issues in fluctuating variability since the availability in front page articles do not vary over time. This dissertation is an expansion of Amber Boydstun’s work on the New York Times. She collected every front page article title and abstract over several decades. My work collects front page articles from papers in 40 different states from 2001-2016[2]. Her work used student research assistants to hand code each article according to the PAP system. I too use the PAP system, but since my project collects over 500,000 articles, human coding is not possible. Instead, I use Boydstun’s articles and some human coded articles from my data to

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1 The New York Times is the most commonly used paper to measure salience. It is considered one of the newspapers of record for the United States

2 More detail on the data used in this dissertation follow in chapter 2
teach a machine to code the rest. Machine coding has long been used to code content for the Policy Agendas Project (Quinn et al., 2010; Grimmer and Stewart, 2013; Burscher et al., 2015). Machine learning allows for an accuracy rate close to what humans can achieve and completes a task on classifying many thousands of documents in a fraction of the time.

1.5 Theoretical Contributions to Issue Salience in Lawmaking

Thus far, I reviewed where issue salience and lawmaking literature began, where it is today, and how the various sub-fields in political science approach the topic empirically. In this section, I address the different ways salience can affect the lawmaking process and how those dynamics require different definitions and measurements of salience.

The expectation of Punctuated Equilibrium and other contemporary models of policy change are for issue salience to spark change in a policy subsystem by changing public opinion, which then through representatives changes policy. However, there is less focus on issues that are endogenous to lawmaking and issues that result in gridlock. Take the Baumgartner and Jones example of nuclear energy. The safety of nuclear energy was not on the minds of a vast majority of Americans before a near core meltdown on Three Mile Island. Compare that subsystem to the subsystem of firearms in America. Mass shootings are a prime example of exogenous shocks to the subsystem, however, there is little evidence that these events result in changes in public opinion. Later, I show that mass shootings do spike public salience in firearm policy, but do not necessarily lead to changes in statutes regulating firearm access. Why do some focusing events lead to policy change and others not? The following subsections consider the relationship between key concepts that reappear throughout this dissertation and lay out general expectations for how various types of issue salience influence the policy making process.
1.5.1 Exogenous Event and Public Salience

For an event to start a policy process, it first must gain the attention of either the public or lawmakers. Issue areas do not operate in a vacuum. There are many competing issues that vie for the attention of both lawmakers and the public. However, the focus of this dissertation is not to determine why a police shooting gains more attention from the public than a humanitarian crisis in Syria. Work that covers media agendas such as (Boydstun, 2008) and other communication literature explain the process of issue attention and media cycles. The aim of this project is to trace the process of an exogenous event through the entire policy process. If a highly salient event occurs that captures a large amount of public and lawmaker attention, other events could go unnoticed. With thousands of policy subsystems, many operate with little attention from the public at most times. Major changes to policy occur as a result of an event that brings attention to a subsystem. With many potential focusing events, the process of which ones garner attention and which ones do not is complicated (Boydstun, 2013). The aim of this dissertation is focused on the impact of public salience and lawmaker salience.

Therefore, the primary objective of this project is to connect analyses of issue salience to policy outcomes. Work on media attention often focuses on media attention as the dependent variable, purposefully leaving policy outcomes out of the analysis. Other broader analyses of the policy making process such as Baumgartner and Jones (2010) do trace the policy making process from the start (some event) to the conclusion (policy change). Although these models are useful to understanding the complete policy making process, they often do not consider the different nuances of salience, choose on the dependent variable when selecting cases to empirically support their models, and often focus on exogenous events that change policy. This dissertation better parses out the process in which an exogenous salience event leads to change in policy or gridlock by more generally selecting issues to study, by considering many different policy outcomes, and by considering the different types of salience and how
those different types change expectations on policy processes.

1.5.2 Public Salience and Lawmaker Action

The literature of dyadic representation, how a representative reflects a constituent’s preferences while in office, is long and well researched (Miller and Stokes, 1963; Ansolabehere et al., 2001; Wlezien, 2017). What is not as known, is how salience affects the relationship between constituent and representative. Knowing how a representative matches with constituent on a certain issue or an array of issues is a flat measure of representation. Knowing how much emphasis the representative and constituent place on each issue among a large set of issues provides a deeper understanding of representation and why certain issues are worked on by lawmakers and why other issues are ignored.

What if an event causes an issue to become more salient, but there is no shift in public opinion? How do lawmakers signal to constituents on important issues that are prevented from becoming policy that is voted on during a roll call vote? Simply casting roll call votes in the manner that coincides with constituent preferences likely does not satisfy constituent concerns that their representative is focused on the issues that matter most to constituents. Much of lawmaking is signaling to voters that the lawmaker is attuned to the problems that are especially important to constituents (Fenno, 1973; Gelman, 2018). Therefore, taking action on a salient issue that does not result in changes in opinion is important. Appearing in tune with constituents is possible without making significant changes to law.

In this project, I twice look at bill sponsorship to measure how issue salience changes lawmaker sponsorship patterns. Although this project does not measure how representatives match up with constituents based on preferences, it does measure how representatives in both Congress and state legislatures appeal to important issues at home and nationally.
1.5.3 Lawmaker Action to Public Salience

There is existing literature that considers the ability of lawmakers to create issue salience (Canes-Wrone 2010). What if lawmakers could change public salience? This creates a more endogenous system that is often ignored by the policy studies literature that treat the process as linear. In classic models of policy making, an event leads to a reaction by various subsets of the electorate, which is followed by mobilization, which then manifests in new policy (Baumgartner and Jones 2010). Exogenous events are not the only force that can increase public salience towards an issue. This endogenous aspect gives lawmakers more power in the lawmaking system. There are plenty of reasons why a lawmaker may want to generate salience on a given issue. It may be a particularly special issue to the lawmaker. It could be used as a wedge issue to strengthen the base or make the opposing party’s executive look bad (Lee 2009). It could be to make a mistake the opposing party made while in power more salient.

This is a type of “endogenous salience” as it is manufactured from within the policy system. There is no exogenous event required. Another similar form could be to take a small exogenous event and bring it to the public’s attention. This type of salience is closely related to the literature on agenda control. Lee (2009), Theriault (2013), Cox and McCubbins (2005), and others argue that lawmakers control the agenda to move current policy closer to the majority’s preference point or fracture the opposite party. A large assumption to all of these works in lawmaking is that the policy making system has endogenous salience as an important component.

Throughout this dissertation, I split news coverage of various issues into news generated by exogenous salient events like a hurricane or flu outbreak and news generated by endogenous lawmaking activity like controversial bills or campaign dynamics. In chapter four, I trace the process of how exogenous events in the form of mass shootings spark change in lawmaking endogenous salience as a way to measure lawmaker reactions to exogenous events.
1.5.4 Lawmaker Action to Policy

The final step is for lawmakers to draft, vote on, and pass changes to existing policy. This is the result of an initial impulse to the policy subsystem. Here, institutional variations could greatly impact the final outcome. The number of veto players (Tsebelis, 2002) and available choke points should dampen the initial disruption to the subsystem. A large focusing event that creates a change in public opinion, but polarizes a small subsection of the population, could result in gridlock and eventually policy stagnation if the representatives of the small portion have the means to block legislation.

There are a few means in the United States to bypass lawmakers in changing policy. Many states have direct democracy measures, however, these are institutions of their own. With different signature requirements and other obstacles to getting an issue on the ballot, there are still ways that political elites and interest groups can influence a process that is supposed to allow people to directly vote on policy. Although an interesting area of research, this dissertation focuses on lawmakers and the ways policy is changed through elected officials. The two main outcome variables used in this project are bill sponsorship and actual changes to policy at both the national and state levels of lawmaking. In later chapters, I discuss the differences between bill sponsorship and changes to laws, as they are quite different outcomes. I argue that sponsorship is a good dyadic measure of how lawmakers signal they are attentive to both national issues and issues at home. In chapter four, I study changes to statutes, which are more meaningful outcomes of the lawmaking process.

1.5.5 State Level Lawmaking

There are few examples of research done to test modern theories of policy change at the state level. Variations in institutional structure, issue salience, ability of lawmakers to affect issue salience, and public knowledge are interesting avenues to explore and test the theory of issue salience in lawmaking proposed by this theory section. The data collected
by this dissertation allow for variation in issue salience across states. This allows for more detailed questions and analysis that allows for state variation.

Congress is currently deadlocked on an array of salient issues. From firearm polices, to immigration, Congress either keeps these types of symbolic issues off the agenda or purposefully places them on the agenda knowing that the result will be gridlock. Therefore, much of the action happens in the states, with state legislatures leading the way for change in some of the most important issues according to voters.

States should provide useful variation in the policy making process that cannot be found with studies that only use national politics. First, the ability for state lawmakers to create salience should be less than their national counterparts. State lawmakers have less media coverage and fewer opportunities to gain a bright spotlight. Second, the sophistication of state lawmaking is lower than lawmaking at the national level (Squire, 2007). The variations in professionalization and lawmaking capacity at the state level is useful for studying how resources spent on lawmaking institutions moderates response speed and quality.

In chapter four, I consider how states take on issues that are gridlocked at the national level by tracking firearm salience and policy changes at the state level. I find that inaction at the Federal level leads to the polarization of firearm policies across the state level, with issue salience as the key ingredient for change.

1.5.6 Conclusion

The purpose of this chapter was to place this project in the larger context of research on issue salience, policy change, and text analysis. This dissertation improves research on issue salience in two main ways. One, I advance the way the field should talk about issue salience by providing more specific definitions based on who is generating the salience, what issue is generating the salience, and who is receiving the signal of salience. Based on better defining the actors involved in a study of issue salience, the field can better create measures and research designs that compliment each other rather than talk past each other. The second
way I advance issue salience is through the use of new data using front page major state newspaper articles. With the use of these articles, I show that the study of issue salience in lawmaking can be extended to the state level, and we can measure dyadic relationships of issue priorities between representatives and constituents.

The following chapter provides a much deeper look at the key piece of data used in this dissertation, the State Newspaper Data (SND). There I explain the advantages over existing issue salience data sources and how it can expand the types of questions asked regarding issue salience. I then compare the SND against existing data sources to demonstrate validity and then show various uses for it.
Chapter 2

State Newspaper Data Chapter

This chapter details the core data collected for this dissertation. The core data are content from front page articles sourced from major state newspapers across 40 states and 16 years. The first section of this chapter provides a step by step guide on how the data were collected and cleaned for analysis. The second section considers the dissertation data versus existing methods of measuring issue salience, the various ways that the data can be used, and why state variation in issue salience data are needed to advance the sophistication of questions we ask about in state and national lawmaking literature. Demonstrations of the data show variation in state data, latent Dirichlet allocation (LDA), and human guided machine learning using the Policy Agendas Project (PAP) framework.

2.1 Data Motivation

The previous chapter described the theoretical focus of this dissertation: to better define issue salience and to create theoretical connections between issue salience and lawmaking at both the national and state level. I argued that the primary way to develop issue salience as a theoretically interesting concept was to better specify different types of both issues and salience. In order to create a new framework on how to think about various forms of issue salience, new data are required as the existing empirical work on issue salience does not have the granularity or generalizeability to answer these deeper theoretical questions. The result is a data set that uses over 500,000 front page newspaper articles from major state
newspapers. What follows is a theoretical justification for creating a new data set needed to both answer new questions in issue salience in lawmaking and to offer better empirical tests of old questions that used old data.

In most models of lawmaking, issue salience is either omitted or incorporated as a control that makes no theoretical contribution to the overall conclusions. Studies that do incorporate issue salience in the theoretical section often use measures that lead to issues of incommensurability or ecological fallacies. The first issue, incomparable units, is common in issue salience data that use conditions as a way to approximate issue salience. These types of measures are popular in studies that match bill sponsorship patterns of individual lawmakers with constituent “demand” for certain issue representation (Highton and Rocca 2005; Harward and Moffett 2010; Rocca and Gordon 2010). Take Harward and Moffett (2010), they compare a state’s demand for education and demand for civil rights by comparing the amount of money a state spent on education per capita in their state budget to the overall liberalness of a state. In addition to several other problems, this technique makes issue comparison logically impossible. The data needed for this dissertation would need comparable units. The second issue, ecological fallacies, occur when national level data are used to answer state level or district level questions. Boydstun (2013) provides national level newspaper data that address the incommensurability problem. Her data allow for a common comparison as each issue may be measured in a similar unit, articles. However, her data may only be used to test national level theories. It is difficult to dis-aggregate Boydstun’s data to answer state or local level questions. As it is not opinion data, Multilevel regression with poststratification are not an option. Lax and Phillips (2012) recognize this problem but proceed anyway claiming that the use of state level salience data would cause endogeniety problems that are worse than the problem of using national data to answer local questions. In this dissertation, the data used address both problems of using local salience in questions of lawmaking.

Ideally, the data used for this dissertation would optimize several criteria. The first is
commensurability meaning the data needed to compare like units. State or district conditions scored low on this criteria. An ideal source would be one that measures citizen interest such as Google searches. Google data are not available to the public or researchers. However, using databases, news articles are available. These allow for different issues to be compared using article counts. The second criteria is granularity. Ideally, the source of data would describe interest in various issues at a county or Congressional district level. Some conditions like median income can be measured at this level, but they fail on the commensurability criteria and are really a proxy for interest, not a measure of actual interest. Newspaper articles satisfy the granularity criteria to the state level. It is possible to find papers that cover the entire state. It was not feasible to amass papers that covered only counties or Congressional districts. The third and final criteria is comparison over time. Here, conditions also score low. Most conditions are measured annually allowing only for panels that are annual. Newspaper data could be measured daily, providing flexible data that possess the capabilities of measuring issue salience from a daily count to an annual count if aggregated. The following section accounts how the state newspaper data were collected and compiled into a usable data source.

2.2 Data Collection

The data required for this dissertation needed to be representative of salient state issues as well as being comparable across states, issues and time. Front page articles from major state newspaper articles were the best available source that satisfied all of the above criteria. Front page news articles allowed for commensurability, granularity, and comparisons across time.

Before detailing the collection process, I will clarify why front page articles were selected over all available articles for each publication. Briefly, front page articles improve comparisons across publications, and improve measurement validity by using only salient articles rather than articles that are read by few. In more detail, various state publications
have different lengths and styles. Comparing the number of articles on banking in a given month from the Denver Post compared to the Philadelphia Inquirer poses a commensurability challenge if all available articles were used. First, it is likely that one paper has more articles available in data bases than the other. It could then appear that all issues are more salient in the publication that contains more articles. Even if some normalization were used\footnote{Such as the number of articles on a given issue over the total available articles in a publication.}, limiting the data to front page articles assists in removing differences due to editorial choices. Front page stories may be influenced by editorial choices, but likely less so than other sections of the paper as the purpose of the front page is to cover the most important issues and sell the rest of the paper. Not covering highly important state issues or events is likely not an editorial option publications will make. Second, using only front page articles limits the sample to highly read articles. Including articles that were buried in lesser read sections may bias measurements of certain issues or publications at the worst, or introduce inefficiency in measurement at the best by adding random error.

Lexis Nexis and ProQuest News and Newspapers served as the two sources for front page article content. Each database provided three pieces of content that allowed for issue identification in each article. Those pieces of content were the article title, an abstract, and keywords. Each database allowed for the search function to sort by publication, page\footnote{front page}, and date. Articles were extracted from the databases by hand to avoid violating terms and agreements of service\footnote{This took a considerable amount of time}. Most articles did not contain key words, an essential data point to identify content, before 2001, therefore the data contain front page articles spanning 2001 to 2016. The articles were then combined in one large data source that contains, the content, publication name, date of publication, state, and database from which it was obtained. The total number of articles is just over 580,000. Various other measures were added to this data set which are described later in this chapter and in other chapters of this dissertation.

The databases had some limitations. Only 40 of the 50 states contained a paper that
had statewide circulation. States that did not have such a paper available were omitted from this analysis. Similarly, front page sections were not constantly available in Lexis Nexis and ProQuest. Therefore, there are some years omitted for certain publications.

2.3 Methods of Analyzing the Newspaper Data

The following subsections of this chapter compare the dissertation data versus existing measures of issue salience and explore the uses of the newspaper data. What follows are not empirical tests of theories of issue salience in lawmaking. Traditional hypothesis testing occurs in the next three chapters. The purpose of this section is to showcase the advantages of these data, demonstrate methods in which they may be used, and to consider future applications of these data in political science and in other fields. The first subsection compares the dissertation data to survey data using most important problem (MIP) questions. Next, I compare the data collected by this dissertation to a widely used data source to measure issue salience, The New York Times. It also demonstrates the usefulness of state level data and the variation it brings. The next subsection thinks about how machine learning can classify newspaper articles in an unguided method using Latent Dirichlet Allocation. A subsection considers guided machine learning follows, which is the opposite approach. For brevity, I use SND (State Newspaper Data) to refer to the data created by this dissertation project.

2.3.1 Newspaper Data Versus Survey Data

As stated in the previous chapter, there are many methods to measure issue salience: conditions, Google Trends, newspapers, and surveys. When using newspaper data, it is important to consider what exactly newspaper content analysis measures. In this subsection, I compare a section of the SNP (state newspaper data) data to most important problem (MIP) survey data obtained from the Colorado Political Climate (CPC) survey. I argue that MIP captures what issues are at the top of the mind of voters while newspaper data measures

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4 A list of papers and availability may be found in appendix A.0.1
what issues voters are exposed to. This subsection helps delineate the differences between two of the more popular measures of issue salience: newspaper content analysis and survey data. To do so, this subsection compares the responses to MIP in a 2017 representative sample of Colorado voters to content from the state’s largest paper, The Denver Post.

Survey data come from The Colorado Political Climate Survey (CPC), a state representative survey conducted by The University of Colorado. Operated by YouGov, 800 total respondents were asked a series of questions that inquired about their background, approval of political figures in Colorado, and general political questions, including most important problem. Respondents were assigned weights based on demographics.

Two MIP questions were included in the survey. The first asked respondents “What is the most important problem facing the U.S. today” and the second “What is the most important problem facing Colorado today”. The ordering of which question a respondent received first was randomized. Respondents had a list of 18 options to choose from that correspond with the Policy Agendas Project framework major topic codes. Two codes were removed as they were feared the true essence of the major topic could not be easily displayed for respondents and likely would be conflated with other topics. Those two topics were “Labor and Employment” and “Government Operations”.

The first was removed as it was feared respondents would conflate the topic with major topic 1, “Economy.” “Government Operations” was removed because the topic cannot be clearly displayed to respondents in a single phrase like the others.

Further, political horse race stories are classified as “Government Operations” according to Boydstun (2013), which would skew distributions.

The respondents were given two questions, MIP for state and nation, for two reasons. One, there is little research that asks how people differentiate between state and national issues. Second, the Denver Post reports on both state and national issues. In the proceeding analysis, distributions of both state and national responses are compared to overall coverage

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5 These correspond with PAP major topics 5 and 20 respectively

6 The 18 available responses can be found in the appendix section A.0.2, which contains the major topic codes for the PAP
from the Denver Post.

Denver Post coverage was collected from Lexis Nexis from January 1st to November 8th\textsuperscript{7} in 2017. Only front page articles were used. This decision was made to assure that only articles covering salient events were included in the analysis, similar to\textsuperscript{Boydston (2008, 2013).} Typically, page one is reserved for a large local or national issue rather. Each article was coded in the Policy Agendas framework so that it was measured in the same units as the CPC data. In total the newspaper data includes 996 articles to use after topics 5, 20, and 99\textsuperscript{8} were removed.

Articles from the entire year were used because the calendar year provided a fair demarcation point and enough data to get accurate estimates of how frequently the 18 topics were covered. Each article was classified for the PAP major topic code. The articles were coded twice by two different human coders. Any disagreement was arbitrated by a third coder who broke the tie.

The below two figures (2.1 & 2.2) compare Denver Post coverage (in gray) to the CPC responses from rural (orange) and urban respondents (blue). The five issues chosen for each figure were the top five responses to the CPC question. For example, in figure 2.1 relating to state topics, crime, the economy, education, health, and immigration were the top five most popular responses out of the 18 possible choices. For national issues, crime was substituted for energy. The gray bars are identical in figure 2.1 and 2.2. The orange and blue bars change as they are generated from two different questions (state and national most important problem. 60\% of the CPC sample named two different issues for national and state most important problems. There appear to be some large differences in Denver Post coverage compared to issues identified by CPC respondents. The Post covers crime at a much higher rate than how respondents name it as the most important state or national problem. CPC respondents view health care as a highly important national issue though it receives little

\textsuperscript{7} The first day the survey went out to respondents
\textsuperscript{8} A topic code for articles that contain no policy content
coverage from the Denver Post.

I split the respondents into these two categories to show that there were no large differences in how rural and urban voters give attention to various issues. One potential critique of using major state newspapers is that each is associated with a major urban area within the state. Therefore, coverage may skew towards the issues that urban residents pay attention to rather than the issues that occupy the minds of rural voters. This analysis shows that rural and urban respondents (in the state of Colorado) largely have similar trends in issue attention.

Figure 2.1: 5 Most Popular Topics, State Level

![Bar Chart](image)

To formally identify differences between CPC MIP results and Denver Post coverage, each were placed in a $\chi^2$ test of independence. This test measures the difference between two discrete distributions. Typically the test is used to determine if two distributions come from a different data generating process. Since it is known that the two data sources come from different processes, the intent of using the $\chi^2$ test is to determine which major topics drive the differences between CPC responses and Newspaper coverage.
A $\chi^2$ test is based on a table of values from each source. The table is 2xk, with k representing the number of topics. Although the data contain 18 major topics, some are too sparse for a $\chi^2$ test as the expected value is less than five. Therefore, any topic that produces a cell in the table that is expected to be less than 5 was removed. Equation 1 shows the formula to determine the $\chi^2$ statistic. For each cell in the table, the observed value was subtracted from the expected, squared, then divided by the expected. The total value for each cell is then summed to get the $\chi^2$ statistic. The degrees of freedom are determined by the number of cells.

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$  \hspace{1cm} (2.1)

In order to determine which topics drive the divergence between the two distributions I look at the residual in each cell. The residual is the difference between the predicted count and the actual count. Equation 2.2 shows how to calculate the residual for each cell to

9 (R-1)(C-1). For example, when all the data are used for national issues, two rows and eleven columns are produced. (2-1)(11-1)=10 degrees of freedom.
determine which category is the largest contributor to the $\chi^2$ statistic.

$$r = \frac{O - E}{\sqrt{E}}$$  \hspace{1cm} (2.2)

Figure 2.3 is a visual representation of the residual size for each major topic included in the $\chi^2$ test. The color of each circle corresponds to if the residual in each cell was negative or positive. Blue circles show that the residual was positive, red is negative. The size of the circle corresponds to the size of the residual. Looking at the crime residual in the top table (national), the Denver Post covers crime at a much higher rate compared to the expected value while the CPC respondents named crime at a much lower rate than expected. The four topics that produced the most difference in national issues were crime, social welfare, health care, and immigration. For state issues, although more topics are included, the story remains largely the same. Crime is over-covered, and welfare is under-covered. Immigration is still an issue more important to CPC respondents compared to Denver Post coverage and banking is over-covered by the Denver Post.

Figure 2.3: Chi Squared Residuals by Major Topic, National Top, State Bottom
Going back to the original theory, that newspapers measure what citizens are exposed to and surveys measure what issues occupy the minds of citizens, results appear to conform to this line of thinking. The Denver Post covers flashier issues like crime while respondents appear more interested in less attention grabbing issues like health care and welfare. These differences are similar when comparing newspaper coverage to MIP responses at both the state and national level.

Further researcher into more specific issues, and expanding this type of analysis to other states and even a national level may reveal more differences in the issues covered by news and the issues that come to the mind of survey respondents.

2.3.2 Data Validation and State Variation

The data used in this dissertation (SNP) provide many advancements in issue salience measurement compared to prior measures already detailed in this chapter and the preceding chapter. These new data are compared to existing data in this subsection to demonstrate their reliability. The most similar existing source of issue salience data is the New York Times. Used by Binder (1999) and Boydstun (2013) among others, The New York Times is a popular publication to obtain salience measures. It is the country’s paper of record and has a national focus in its main section.

Figure 2.4 shows one way of comparing the SND with data collected by the New York Times (NYT). The dotted line shows the percentage of NYT data devoted to firearm related issues\textsuperscript{10} on a monthly basis from 2001 to 2016. The New York Times data come from Lexis Nexis and are not Boydstun’s data as her data do not extend past 2008. The solid line shows the same trend for using averaged SND. This trend constructed by finding the percentage of all front page articles for each state that had available data during a given month and averaging those states.

Although just one issue, the two trends seem related through time with a correlation of

\textsuperscript{10} An issue that appears several times in this dissertation.
0.73. Other issues, firearms, hurricanes, the Iraq War, immigration, and unemployment were measured and their correlations are reported in table 2.1. All issues show a positive monthly correlation between the New York Times and State Newspaper Data. Unemployment and firearms produced the highest correlations while immigration produced the lowest. Although the purpose of the SND data are not to be aggregated and used at a national level, the shared trends between SND and the NYT data demonstrate that the articles of state newspapers are following national trends on average. This bodes well for the measurement validity of the papers used to construct the SND.

Table 2.1: Correlations between SND and NYT

<table>
<thead>
<tr>
<th>Issue</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firearms</td>
<td>0.73</td>
</tr>
<tr>
<td>Hurricanes</td>
<td>0.51</td>
</tr>
<tr>
<td>Iraq War</td>
<td>0.60</td>
</tr>
<tr>
<td>Immigration</td>
<td>0.41</td>
</tr>
<tr>
<td>Unemployment</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Figure 2.4: Newspaper Data vs. New York Times
One of the primary uses of the SND data is to show variation in issue salience across the states. As detailed in the previous chapter, heterogeneous interest in topics across states should assist in explaining differences in lawmaking style and what issues lawmakers address while in office. Figure 2.5 shows this variation. The solid line is a repeated from Figure 2.4, showing the average percent of firearm issue related articles appearing on the front page on a monthly basis. Each gray line shows the trend for one of the 40 states contained in the SND. What is shown is large variation across both time and states. For example, many states see a spike during 2012 and 2013 (the largest spike in the average) during the Sandy Hook shootings. However, there are many regional spikes in firearm coverage during times when there are no national spikes. This variation could help inform why certain lawmakers own certain issues in the lawmaking process, what committees members serve on, how policy ideas spread, and many other interesting questions in lawmaking research.

The potential uses for the SND are vast. This dissertation shows many of these uses. At the state level, I pair the SND with laws and bills produced by state legislators. Research
on state representation is common in state politics literature (e.g. Lax and Phillips (2012)). With these data, more work can be done to incorporate issue salience in these analyses of representation in state policy. Taking Lax and Phillips (2012) as an example, instead of relying on national measures of issue salience, it would be possible to now incorporate state level data to determine how it interacts with public opinion to form state policy outcomes. At the national level, the SND provide more granular data to use with representatives from Congress. These data will be best used in the Senate, where lawmakers are beholden to the entire state. For members of the House, these data are the best measure available to use to measure what issues occupy the minds of their constituents. Although these papers may better represent lawmakers from urban districts, analysis from the previous section shows that rural and urban issues may not be so different.

2.4 Unsupervised Machine Learning

Topic modeling is a common way to classify a group of documents, much like the state newspaper data (SND) used in this dissertation. Unlike supervised machine learning, topic modeling allows a computer algorithm to determine topics in which to sort words and documents into. This section explores topic modeling and the SND. First, I present a brief introduction into topic modeling. Next, I show different attempts to used topic modeling on the SND. Finally, I discuss the advantages and disadvantages to using topic modeling on state newspaper data.

2.4.1 Topic Modeling and LDA

Topic modeling accomplishes two tasks simultaneously. One, it creates $K$ topics into which documents are sorted. It creates the topics using the words contained in each document (in the case of SND, each article is a topic) to best separate the words in the entire

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11 Also referred to as unsupervised machine learning
12 $K$ is determined by the researcher
The first result from topic modeling are the K topics. Words strongly associated with the topic may be used by researchers to determine what subject is related to each of the K topics. The second result are assigned topics for each document. Each document receives a vector of percentages associated with one to all of the K topics based on the words contained by the document. For example, if K = 10, the first document in a corpus may contain 50% of topic 1, 30% of topic 2, and 20% of topic 5.

The underlying method that is used in most topic modeling is Latent Dirichlet Allocation (LDA). Using the Dirichlet distribution, documents and words are sorted into K groups. A computer algorithm first begins randomly assigning words to the K topics. The algorithm then assesses how well it separated each document based on the uniqueness of words associated with a given topic. The algorithm repeats this process, keeping results that creates separation and ignoring results that do not improve separation. For a more detailed discussion on how LDA works, please read [Blei et al. (2003)].

When using LDA to separate documents into K topics, there is no guarantee that the topics created will adhere to any type of logic. It falls to the researcher to make sense of each group (or some of the groups) that is created. Although an interesting practice, this atheoretical aspect of LDA is one of its limits to standard inductive academic research. The results seldom can be used to test a hypothesis. Rather, LDA is at its best to create a non-human biased classification system. Later, I compare LDA results to the Policy Agendas Project (PAP) classification system to show how LDA can assist amending the PAP schema in reducing the number of topics. What follows are various attempts to classify the SND into groups, if any sense can be made out the analysis, and then what can be done to make LDA of newspaper data more useful to research.

It is highly likely that not every group will be a discernible topic.
2.4.2 Topic Models of SND

Choosing an integer for $K$ is the most important choice when conducting LDA. For the first round of LDA, I chose $K = 20$. I chose this to correspond with the number of major topics associated with the Policy Agendas Project (PAP) scheme. The following analysis uses the LDA package in R, which allows for standard topic modeling on a series of documents. This section uses every available article in the SND. Words from the articles were stemmed meaning similar words were condensed into one word. For example, “economy” and “economic” were stemmed to “econ.” and words contained fewer than three words were omitted. Standard “stop words” such as “the” and “and” were also excluded. These text data cleaning techniques are common and are used in each analysis of this dissertation.

Figure 2.6 shows the 20 topics produced by the first LDA. The top seven most common words associated with each topic (meaning that they were the words most appeared in each topic) are reported. If more than 7 words are shown reported for a given topic, that means the 7th and subsequent words tied for the number of appearances.

Some topics create unique and logical groupings based on the top seven words. Take for example, topic 13. Words like “cancer,” “medical,”, and “hospital” relate to medical topics, similar to major category three in the PAP scheme which is called “Health.” Out of the 20 topics created 1, 6, 8, 9, 10, 11, 13, 18, and 19 all have three or more words that fit nicely into the same topic for a total of 9 of the 20. Some topics are repeated. As stated above, topic 13 related to medical issues. Topic 11 also appears related to medical issues, although it may have more to do with health insurance than topic 13. These LDA results show why LDA may not be a perfect tool for creating a classification system. The topics often appear to have a general topic, but many do not clearly fit into a discernible issue.

In LDA, each document (article) is considered to be made up of each of the $K$ topics. In this case, each article has 20 percentages associated with each topic adding to 1. Take the first document, “iraq town mourns quinton soldier buried deaths obituaries armies
farmers ranchers war conflict armed forces cemeteries iraq war high schools vietnam war motor vehicles clergy religious.” LDA determined that 46% of the words in this article were generated from topic 1. This result can be used later when combinations of unsupervised and supervised learning are discussed.

Expanding K does not necessarily make results fit into discernible patterns. Figure 2.7 shows the results from a LDA using the same corpus, but increasing K to 40. Due to space, only the three most common words associated with each topic are reported. Some make perfect sense such as topic 11, 19, 27, and 38. Others, like 20, 28, 31, and 33 result in no clear issue associated with the topic. These results are shown to demonstrate that the choice of K is subjective and often requires trial and error. Further, the proper K for one corpus may not be the best choice of K for another. Comparing LDA results across different text data sets associated with policy such as Boydust et al. (2014b) or Adler and Wilkerson (2006), could yield interesting results. LDA could show if newspapers cover a broader array of topics
than Congressional bills or if bills cover more. Similarly, a LDA comparison between New York Times data and SND can determine how much wider the array of topics covered are for regional stories compared to a more narrowly focused newspaper like the New York Times.

Figure 2.7: LDA 40 Topics

Figure 2.8 shows a comparison of LDA for Oklahoma\textsuperscript{14} and Washington\textsuperscript{15} state newspaper content in 2016. Although not necessarily useful for hypothesis testing, this technique could be used to compare issue attention across states in a given year. Oklahoma and Washington are two very different states. They are located in different regions, have vastly different economies, and are on the opposite side of the ideological spectrum. One example that highlights a potential difference in issue attention is the energy topic for each state in 2016. The three most common words for topic one in Oklahoma are “gas,” “natural,” and “oil.” For Washington, their energy topic was 18 with “energy,” “policy,” and “nuclear”

\textsuperscript{14} The Oklahoman  
\textsuperscript{15} Spokesman Review
as the most common words associated with each topic. Although not a formal statement derived from a hypothesis and corresponding statistical test, this suggests that more standard forms of energy are a greater concern in Oklahoma compared to Washington where nuclear energy was a greater topic of concern in 2016.
Figure 2.8: LDA for Oklahoma and Washington in 2016
The next section presents how supervised machine learning techniques were applied to the SND. At the end, a discussion on the use of a medley of unsupervised and supervised techniques is presented focusing on how the two can be combined to improve how scholars that study lawmaking separate data into issues.

2.5 Supervised Machine Learning

The previous section, on topic modeling, takes a raw data set and creates topics based on the words contained in each document. Topic modeling is a completely inductive process with few standards to measure the effectiveness of the modeling. Supervised machine learning has several differences. One, documents are separated into human imposed topics that are introduced into the machine learning process before the algorithm begins to separate documents. Two, human provided data are necessary for the process meaning that a substantial amount of work is conducted by human coders before any work by the algorithm is conducted. Three, there are clear metrics in which to grade the machine learning process at the end. Despite these differences, both unsupervised and supervised machine learning is an inductive process. This section shows efforts to classify State Newspaper Data (SND) into the Policy Agendas Project (PAP) classification system. Discussion will follow on how to improve this process, how to improve the PAP system using machine learning, and how the SND can be integrated into various lawmaking research projects once it is classified in the PAP system.

2.5.1 Classifying the SND into the PAP System

This subsection demonstrates how the SND were classified in the existing PAP system. The PAP classification system is the most widely used system to classify political text data into issue areas. The PAP is split into 20 major topics and over 240 minor topics. This section shows efforts to sort SND articles into one of the 20 major topics.

\footnote{Major topics are in Appendix A.0.2}
The first step in any guided machine learning project is to collect human coded data. A guided process uses what humans coded to feed the machine. Typically, the human coded data are split into “training” and “testing” data. Training data are used by the machine to pick up on patterns later used to classify “virgin” documents. The testing data are withheld from the machine to use latter to assess accuracy. A team of three undergraduate research assistants double classified 10,000 SND articles using the PAP system. Each article was classified by two different research assistants without communication. Double classification assists in several ways. One, it allows the researcher to determine the ceiling for machine classification. The inter-coder reliability is the percent of articles that each of the two researchers tag as the same major topic. For example, if two assistants coded five articles as 1, 1, 2, 2, 3 and 1, 1, 2, 2, 4, their inter-coder reliability would be 80%. The overall coder reliability with the SND was 83%. In machine learning, a “good” inter-coder reliability score is dependent on the complexity of the data, the richness of the text, and the number of topics available. The PAP data have 21 possible outcomes which is a large number of topics. Many projects use only two topics such as spam and not-spam for email screening. Their mark of 83% is in line with similar projects used in the broader Comparative Agendas Project. Therefore, when using machine learning on the SND, 83% is the ceiling.

To create the training data, I combined Amber Boydstun’s New York Times Data with data coded from the SND by the undergraduate researchers. Boydstun’s data are similar to the SND data and were useful as a “free” resource in order to boost the amount of data the machine had to classify virgin documents. In machine learning projects such as this one, the validity of using outside documents to code SND data is decided by the end results. I tried coding virgin documents using a smaller corpus of SND articles only and achieved worse results. Through trial and error, I concluded that using 5,000 SND articles combined with 15,000 Boydstun NYT articles created the best results on roughly 5,000 withheld articles.

17 The 20 major topics as well as “99” which is a topic for non-policy related content
18 The broader project that now contains the Policy Agendas Project
with an average machine accuracy rate of 78%.

In order to machine learn the articles, I used the R Text Tools Package from Collingwood et al. (2013). Pre-processing methods were standard with the removal of stop words, numbers, punctuation, sparse words, and the stemming of words. Additionally, any articles that contained fewer than 10 characters were removed, meaning that the article was either improperly uploaded to the database or the article was a snippet of a different article contained on a different page. The actual algorithm used was a Support Vector Machine (SVM) (Joachims, 1998). SVM learning is similar to logit or probit link functions in inferential statistics, but instead of two outcomes, there are K outcomes\(^{19}\).

Below in table 2.2 is a result of two combined trials to code the SND articles. In each, 5,000 SND articles were withheld from the machine for testing. Table 2.2 shows a confusion matrix, a more in depth analysis of where the machine coding missed and where it was accurate. The rows represent actual, and the columns predicted. The row names correspond to the 21 major topics in the PAP, the columns refer to the numerical code for each major topic. For example, economics (Econ.) corresponds to 1 in the PAP code. In 279 instances, the machine correctly classified a virgin document as belonging to the economics topic. Going horizontally, seven times the machine coded a economics article as health (3), four times as labor (5) and had the most misclassifications of 38 times as miscellaneous (99). Going vertically, once did the algorithm classify a civil rights (2) as economics, one actual health (3) article as economics and misclassified 72 miscellaneous articles as economics for the most in that column.

A confusion matrix is useful for identifying trouble spots in a machine classification system. Cells that are off diagonal signify two topics that often overlap. For example, 220 times there was an instance of an article that humans coded as defense that was coded by the machine as international affairs. This incorrect classification is logical. Often, defense articles contain key words associated with other countries and international bodies, which are the

\(^{19}\) In the case of this project, \( K = 21 \), the number of available major topics in the PAP.
|                | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 99  |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Econ.          | 279 | 0   | 7   | 0   | 4   | 3   | 0   | 1   | 0   | 4   | 8   | 3   | 4   | 14  | 8   | 2   | 3   | 17  | 21  | 0   | 38  |
| Civil Rights   | 2   | 184 | 8   | 0   | 1   | 3   | 0   | 0   | 0   | 1   | 0   | 22  | 1   | 0   | 8   | 12  | 9   | 0   | 14  | 22  | 0   | 16  |
| Health         | 1   | 7   | 527 | 2   | 4   | 0   | 5   | 0   | 0   | 0   | 42  | 6   | 1   | 6   | 9   | 5   | 1   | 27  | 31  | 0   | 11  |
| Agriculture    | 1   | 0   | 10  | 53  | 1   | 0   | 1   | 2   | 1   | 1   | 1   | 0   | 0   | 1   | 4   | 1   | 0   | 10  | 2   | 1   | 10  |
| Labor          | 8   | 2   | 6   | 0   | 88  | 3   | 0   | 2   | 0   | 12  | 8   | 6   | 5   | 5   | 6   | 2   | 2   | 10  | 13  | 0   | 8   |
| Education      | 0   | 9   | 9   | 0   | 1   | 342 | 0   | 0   | 0   | 0   | 10  | 0   | 2   | 1   | 2   | 0   | 0   | 5   | 5   | 0   | 19  |
| Environ.       | 0   | 0   | 1   | 1   | 0   | 0   | 98  | 1   | 0   | 2   | 6   | 0   | 2   | 5   | 5   | 1   | 0   | 14  | 5   | 8   | 14  |
| Energy         | 1   | 0   | 1   | 0   | 0   | 1   | 6   | 85  | 0   | 3   | 0   | 0   | 0   | 3   | 6   | 0   | 2   | 14  | 5   | 0   | 6   |
| Immigration    | 0   | 1   | 0   | 0   | 1   | 1   | 0   | 0   | 73  | 0   | 6   | 2   | 0   | 0   | 4   | 0   | 0   | 5   | 3   | 0   | 2   |
| Transportation | 2   | 2   | 3   | 0   | 9   | 1   | 2   | 0   | 0   | 191 | 17  | 0   | 1   | 5   | 18  | 6   | 0   | 19  | 3   | 4   | 28  |
| Crime          | 0   | 40  | 9   | 0   | 3   | 9   | 0   | 0   | 2   | 3   | 677 | 5   | 3   | 5   | 54  | 5   | 2   | 50  | 32  | 1   | 60  |
| Soc. Welfare   | 0   | 2   | 3   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 13  | 69  | 0   | 0   | 0   | 0   | 0   | 5   | 2   | 1   | 3   |
| Com. Dev.      | 3   | 2   | 3   | 2   | 3   | 3   | 0   | 0   | 1   | 1   | 7   | 2   | 80  | 13  | 4   | 1   | 0   | 6   | 5   | 4   | 25  |
| Banking        | 11  | 2   | 10  | 1   | 9   | 2   | 1   | 1   | 0   | 11  | 42  | 0   | 7   | 275 | 8   | 14  | 9   | 19  | 14  | 3   | 27  |
| Defense        | 1   | 16  | 0   | 0   | 2   | 1   | 2   | 1   | 0   | 9   | 8   | 0   | 0   | 3   | 1010| 3   | 1   | 220 | 29  | 3   | 11  |
| Tech.          | 0   | 6   | 12  | 0   | 1   | 8   | 3   | 1   | 0   | 1   | 13  | 0   | 0   | 6   | 18  | 144 | 4   | 10  | 17  | 0   | 20  |
| Trade          | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | 6   | 0   | 41  | 4   | 2   | 5   | 2   |
| Intl. Affairs  | 5   | 4   | 18  | 1   | 4   | 2   | 0   | 4   | 4   | 9   | 23  | 3   | 2   | 6   | 135 | 6   | 22  | 1249| 11  | 3   | 28  |
| Gov. Ops.      | 13  | 8   | 4   | 1   | 2   | 3   | 3   | 1   | 1   | 3   | 10  | 4   | 0   | 2   | 36  | 3   | 1   | 36  | 1086| 2   | 53  |
| Pub. Lands     | 0   | 1   | 3   | 0   | 0   | 4   | 1   | 0   | 0   | 2   | 5   | 0   | 4   | 1   | 13  | 2   | 0   | 7   | 5   | 40  | 9   |
| Misc.          | 72  | 52  | 40  | 12  | 16  | 58  | 31  | 12  | 12  | 64  | 76  | 18  | 79  | 56  | 45  | 35  | 2   | 107 | 103 | 44  | 1407|

Table 2.2: Confusion Matrix
key words associated with the international relations category. Another common conflation was between crime (12) and civil rights (2). This confusion for the machine occurred during the later articles (closer to 2016) as the practice of policing minority populations became a heated topic that gather large coverage from various news sources.

Those wishing to improve on the PAP results can use confusion matrices from this project and others to amend the framework to better fit their project. Although a general framework is useful, not every source of lawmaking text data need to be classified in the full PAP framework. Take the SND. Very few articles cover foreign trade. That topic is of low salience nationally, and of even lower salience in these major state newspapers. Other topics, like defense, trade, and international relations are closer in likeness to each other than they are to other major topics. Researchers interested in comparing the time a president’s agenda spends on domestic matters to international matters may be willing to reduce those three topics into a broader topic. Reducing the number of topics improves overall accuracy, but reduces the granularity of the data. Based on research conducted in this dissertation, a significant amount of time should be spent thinking about balancing the granularity and generalizability of the data before any human coding or machine learning is conducted.

2.5.2 Using Supervised and Unsupervised Machine Learning Together

Not all machine learning research projects need to use either supervised or unsupervised methods. With supervised LDA (Aggarwal and Zhai 2012) it is possible to combine the flexibility of topic modeling with the usefulness of guided machine learning.

Supervised LDA works as an interactive process between researcher and algorithm. With pure LDA, the computer decides how to best fill the K topics based on separating documents using unique words. In a guided LDA, the computer acts with the researcher in an iterative process to make adjustment to the standard LDA process. For this method, the researcher is able to introduce words as priors to create a new topic. This process is called “seeding” words, meaning that words selected by the researcher grow into more meaningful
topics than what would have been created by a simple LDA approach. Take for example figure 2.8, where the topics in 2016 were compared between Oklahoma and Washington. A seed could be introduced to assure that energy appears as a topic in both LDA results. Seeding with just one word, such as “energy,” could lead to the inclusion of related words like “nuclear” or “oil.” The rest of the 19 topics would fall under the standard LDA process.

How then could guided LDA improve classification schemes like the Policy Agendas Project? One, it could speed up the time it takes to classify documents. Instead of having research assistants classify thousands of documents to later feed to a machine, a researcher could choose to use a list of words associated with each major topic instead in a guided LDA process. Although this approach may not deliver the same accuracy as standard guided machine learning, it would produce interesting results to compare to the standard process. First, based on the key words used to seed the process, the distribution across the K topics could yield different distribution across major topics than what are observed using the guided process. In the SND, law and crime (major topic 12) is the most common major topic. Using guided LDA may result with a different major topic as the most prevalent topic. This result would not be wrong, but rather would provide a different way to classify documents.

Guided LDA would also allow researchers to use different versions of the PAP or create new major topics. If a researcher wanted to collapse two similar major topics, she could explore the results of doing so using guided LDA. More, since the PAP expanded into the wider Comparative Agendas Project\textsuperscript{20} guided LDA could serve as a way to more easily and more quickly explore differences between schemes. Many of the projects in the expanded CAP universe use slightly different schemes than the standard PAP. Instead of employing research assistants at high costs, guided LDA is a ready to use method to compare findings using different schemes.

\textsuperscript{20} a classification system meant to expand to regions outside of the United States
2.6 Conclusion

The purpose of this chapter was to describe the State Newspaper Data, the process in which it was collected, and demonstrate various methods of analysis using the data. As shown in this chapter, there are many different ways to use the SND. When aggregated, the SND compare well to New York Times data, which is a commonly used source to measure national issue salience. Topic modeling, although not an effective tool for inductive analysis, can lead to interesting descriptions. When used in conjunction with guided machine learning, topic modeling can be used to make amendments to the Policy Agendas Project framework. Pure guided machine learning yields accurate results when measuring accuracy rates against similar projects.

These data have more applications outside of political science. They could be used as a corpora to test machine learning methods, they could be used in communications studies to show how media agendas vary across states, and could be used by those that study political journalism. The next three chapters engage with these data in a more formal fashion, using the SND to test theories of lawmaking.
Chapter 3

Salience and Bill Sponsorship

How do members of the House of Representatives balance their duties to both party and constituents? This chapter proposes that depending on the nature of the issue, members will weigh demands from party and constituents differently. The two types of issues analyzed in this chapter are symbolic and resource issues. I theorize that lawmakers will be motivated to follow their party on symbolic issues and motivated to appease their constituents on resource issues. I find that for symbolic issues, members take action based on national attention. For resource issues, members act on behalf of their constituents. This chapter uses four issues as a case study. For symbolic issues: gun control and immigration. For resource issues: farming and energy. Using major state newspapers, both local issue salience and national issue salience are placed into models of bill sponsorship. Findings show that local newspaper coverage predicts sponsorship for the two resource issues while aggregate national coverage better predicts sponsorship for the two symbolic issues. Findings have implications for fields of agenda control in Congress, ambition and lawmaking, and existing models of policy making.

3.1 Introduction

The existing narratives in political science connecting public issue salience to the issues that consume the attention of lawmakers are largely the same for both national and local issues. In popular theories of issue salience and policy making (Baumgartner and Jones...
large shifts in policy are preceded by steep increases in public attention. The standard process in modern theories of policy change begin with a focusing event that changes public opinion which then changes the laws that govern the regulations for that policy area. The narrative is similar at the member level. Members of Congress from states with high crime rates should work on crime while members from states with economies that are reliant on the agriculture industry should work on farm subsidies. This chapter argues that local and national salience should be treated as different forces that influence lawmakers and how they allocate their attention. I argue that members are able to manage the cross pressures of constituents and party by responding to different stimuli given the nature of the issue. On issues that directly affect government allocation of resources, members respond to local issue salience. On symbolic issues that do not directly affect the allocation of resources to constituents, lawmakers will respond to national issue salience. This approach allows lawmakers to appease both constituents and their party. Their constituents are reassured that their lawmakers are attentive to the issues that most directly affect them. The party is reassured that the member is on the same page as the rest of the party on the issues that are most likely to change party group benefits.

Traditional views on issue uptake in Congress show that district or state conditions predict what types of issues a member will work on while serving in Congress. However, existing work on issue uptake is not complete without considering both local and national issue salience. This chapter updates the field of issue uptake research in several ways. First, existing work on issue uptake only considers local pressures. This chapter considers both local and national issue salience as inputs that explain why members specialize in different issues. Second, existing work treats issues as uniform. This chapter considers four separate issues in a representative case study. Two of the issues, gun control and immigration, are symbolic. The other two, farming and energy, are issues that distribute large amounts of government resources. Results show that national and local salience work differently across the four different issues. Third, existing work on issue uptake use measures of issue salience
that contain validity and comparability problems. This chapter introduces a new method using new data on regional issue salience that provides a better measure of issue salience at the local level.

The chapter proceeds as follows. First, the current state of issue uptake literature is presented to better situate the research contained in this chapter. Second, a section on theoretical expectations for why different types of issues should depend on different types of issue salience situates this chapter in existing work. Third the rationale for the case study selection is made. Fourth, the data and empirical strategies are laid out. Fifth, model results are reported. Finally, The findings from this chapter as well as how they impact the field of issue uptake and policy making are discussed.

3.2 Existing Work on Issue Uptake

Issue uptake is the study of what policy areas lawmakers devote energy and resources to. As theorized in early political science, there are seemingly an infinite set of issues available to fill the agenda of lawmakers (Erikson et al., 2002; Baumgartner and Jones, 2010; Sabatier and Weible, 2014). How do lawmakers pick from such a large set of issues? At the aggregate level, lawmakers tend to be responsive to the issues that occupy the minds of the public (Erikson et al., 2002; Baumgartner and Jones, 2010; Sabatier and Weible, 2014). The existing understanding is that as an issue gains attention from the public, interest groups try to control the definition of the issue, lawmakers make changes in accordance with public sentiments. This is not a one way story. Most of these views of policy change begin with some exogenous event that is filtered through public opinion and linkage groups like interest groups and political parties and eventually result in new policy. Sometimes, the change in the system can come from within. Lawmakers may make certain policy with sunset provisions that requires them to revisit the issue during a predetermined point in the future (Adler and Wilkerson, 2013). Other times, lawmakers try to draw public attention to specific issues in order to awaken a silent majority (Canes-Wrone et al., 2002; Canes-Wrone, 2010). This work on lawmaker agenda setting suggests the causal arrow be-
between public attention and lawmaker attention points in both directions.

Especially in contemporary sessions of Congress, increased issue attention from the public does not always result in new policy. Much of the contemporary work on policy change focuses on issues that has consensus support for change. Take for example the Baumgartner and Jones (2010) examples of nuclear energy, smoking, and drunk driving. In their narrative, public attitudes towards these topics changed as the issues came into the public focus. The result was new policy that added more regulations to these issue areas.

Today at the national level, tremendous amounts of attention by the public and lawmakers alike are paid to issues like gun control and immigration but that attention resulted in few substantive changes to public policy. There are many explanations of the current gridlock found in Congressional literature (Binder, 1999; Jones, 2001; Binder, 2004). Parties, through their use of agenda control tend to focus on issues that emphasize the divide between the parties (Lee, 2009; Theriault, 2013). This strategy results in the salience of issues that have little chance of resulting in meaningful policy change. Most of the issues picked have little to do with actual governance. They are more symbolic than they are pressing. Other issues that may have a chance of resulting in a majority of members approving a change to the policy status quo are kept off the agenda by the majority party who does not want a majority of its members outvoted (Cox and McCubbins, 2005). This process describes the outcome of most national issues. Are the same processes at work for dyadic issue uptake?

Macro issue uptake is concerned with how the entire political system takes issue salience as an input and produces policy. Dyadic issue uptake refers to the relationship between individual lawmakers and the issue salience among their constituents. One of the most popular studied form of dyadic issue uptake is bill sponsorship (Wawro, 2001; Hayes et al., 2010; Lazarus, 2013; Woon, 2008; Rocca and Gordon, 2010). In these studies, district or state conditions are measured and compared to determine if those conditions are indeed driving the actions of the representatives from a given area. For example, the Woon (2008) study of bill sponsorship in the Senate is done using state level conditions for a basket of issues.
Woon proposes that a Senator’s portfolio of sponsored bills should reflect the needs of her state. For example, a state with a high unemployment rate relative to other states should have Senators sponsoring legislation that deals with jobs programs. The study of dyadic issue uptake is less complicated by political factors than macro issue uptake. There are no barriers to sponsoring legislation. The majority party cannot prevent an individual Senator or Representative from sponsoring legislation. The freedom to sponsor in Congress is one of the reasons why bill sponsorship is such a popular means to study why members specialize in different issues. Other ways of representation, like committee membership are dependent on decisions made by the party (Adler and Lapinski 1997).

Quantifying what issues are important to a given state or district is difficult. Until now, most studies use conditions to measure which issues are most important. For example, to compare which states most value energy as an issue, (Woon 2009) uses the percent of a state’s GSP produced by energy industries. Without access to consistent polling in each state, the use of a proxy is required. However, issue salience and district or state conditions are and should be considered different concepts. Their distinction is important for a literature tracing back to the beginning of political science research on representation in Congress (Jones 1961; Miller and Stokes 1963). It is possible that constituents are not concerned about the most pressing matters in their area or that members take a particular focus on certain issues that are not a concern to constituents. Therefore, a measure of conditions inherently opens any analysis to the possibility that the member is ignoring signals of attention from constituents and instead is shaping his agenda based on pre-selected conditions, in other words, a trustee. Measuring conditions also leads to an incommensurability problem. Similar to regression coefficients measured in different units cannot be compared based on magnitude, measuring one issue in a percentage and the other in a count lead to incomparable measures. For example, the crime rate and median income are popular measures for gauging the importance of crime and economic issues. Although these are acceptable proxies when used on their own, they make for poor comparisons. Finding a method to measure all
issues on the same scale is crucial for consistent analysis.

Despite the progress in macro and dyadic issue representation, there is little work that analyzes how theories of issue uptake at the micro level scale to the macro level and vice versa. The next section sets up theoretical expectations for why lawmakers should respond to different types of issue salience based on the nature of the issue.

3.3 Theory

In the single member district system used by the United States, members are expected to serve their constituents as well as the country. Given that the issues that concern constituents will not always perfectly correlate with the needs of the nation, members are forced to weigh their attention between the two. Some members aspire for national attention (and promotion) and others remain focused on their constituents (Bernhard et al., 2017). What political factors cause members to reweigh their approach to handling national and local pressures?

The theoretical argument of this chapter is based on the fundamental problem lawmakers face as a member of a political party. Established theories of Congress argue that members of parties obtain group benefits for supporting the goals of the party (Aldrich, 1995; Cox and McCubbins, 2005, 2007). These theories state that as a party makes changes in policy favorable to those that support the party, members will benefit from the positive party brand. However, these group accomplishments come at a price. Lawmakers must at times vote against the preferences of their constituents in order to secure these diffuse party benefits (Carson et al., 2010). It is in this trade off that this chapter attempts to reconcile micro and macro views on issue uptake.

How can a member appear as faithful to both her party and her constituents? Most of the research on this trade off focuses on roll call voting, where a member must choose a side if the constituents and party prefer different policy outcomes (Lebo et al., 2007; Carson et al., 2010). This chapter looks at a different area of representation, bill sponsorship. I argue that
bill sponsorship may help members of Congress alleviate some of the tension caused by roll call votes. Members should use bill sponsorship to show constituents that they recognize the issues that most directly affect them and show their party that they support them on the issues that are most important to the overall party brand.

What exactly is bill sponsorship? Is it a purely symbolic act that equates to political cheap talk or is it a meaningful action? Several theories of bill sponsorship argue that it is not cheap talk, rather that sponsoring a bill is costly and formally locks a member into a position. Rocca and Gordon (2010) argue that sponsored bills signal to interest groups intent and ideological position. Highton and Rocca (2005) claim that although members are not as locked into a position as they are in a roll call vote, members still show considerations about what a sponsored bill demonstrates to constituents before taking action. Woon also considers sponsorship as costly, but argues that it is a signal to party leadership and constituents. Additionally, there is evidence that even cosponsorship is seen as meaningful communication between member and constituents (Koger, 2003). All of the previously mentioned theories point to bill sponsorship as costly and meaningful communication between legislator and constituent. This chapter considers bill sponsorship similar to Woon (2008), that bills are meaningful communication to both constituents and the party. Unlike Woon, I expect the signal to differ depending on the issue.

Why then should the nature of the issue determine which type of salience (local or national) the lawmaker responds to? I argue that symbolic issues should see an increase in bill sponsorship when they become salient nationally and that resource issues should see increased attention from a given lawmaker when that issue becomes salient in his constituency.

Symbolic issues are increasingly becoming the core identity of both American major political parties (Lee, 2009, Theriault, 2013). These issues commonly make their way onto the political agenda in order further the divide between the parties. Although little policy progress is made on these issues, their presence in the national political conversation is a boon for the reelection chances for most lawmakers. In today’s polarized political environ-
ment, a lawmaker can easily establish the need for her reelection among her core constituents by pointing to the largest differences between the parties. Many of the issues that appear on Congressional agendas have little impact on the federal budget or the distribution of government resources. Issues like abortion, gun control, immigration, and voting laws are seen as crucially important by voters but large policy changes would require a relatively small reallocation of government resources. For these issues a lawmaker can signal her willingness to support key party positions on symbolic issues by crafting legislation that signals the party line. This is to say that bill sponsorship on symbolic issues should be a signal to the party [Woon (2009)] first and constituents second. In this case, the ideal time to sponsor legislation on symbolic issues is when that issue is nationally salient. This is not to say that local salience should be completely irrelevant in determining when a lawmaker issues a bill on a symbolic issue. Lawmakers may want to signal to key supporters when local issue salience is high.

Lawmakers who support the party on symbolic national issues should try to make up for their party support by paying special attention to issues that directly affect government resources to their district. On these issues, there should be less party pressure and more direct benefits that the lawmaker can claim. These issues are not as salient as symbolic issues. Examples of these resource driven issues are farming subsidies, energy policy, transportation appropriations, and the location of military facilities. These issues act as a way for lawmakers to make up for unpopular decisions made on symbolic issues or further their standing with constituents. For these issues, local salience should dictate lawmaker response. When there is a local need, the lawmaker should respond with a bill that appropriately addresses the salient issue. National issue salience towards these issues should not have a direct effect on bill sponsorship for these issues.

To sum, this chapter tests the idea that symbolic issues and resource issues respond to different types of salience. The expectation is that lawmakers will sponsor legislation related to symbolic issues when those issues become nationally salient. They will do this to signal
to their party that they are on the same side for these important issues. For resource issues, lawmakers will respond to local salience. They will do this to show constituents that they are attuned to local conditions and to make up for roll call votes where the lawmaker voted the party line against constituent preferences. The next section introduces the four cases used to test this theory.

3.4 Case Selection

This analysis uses four cases. The two symbolic issues are immigration and gun control. The two resource issues are farming and energy. These cases were selected for comparability and generalizability. These cases are not a mix of specific and broad issues. Rather, all four issues are salient over the time span of the analysis (2001-2014). They are also not broad issues such as domestic issues or foreign affairs issues. They are neatly defined which allows for consistent detection using a key word search. The issues are also generalizable. They are not so small that their comparability to larger issues would be doubted. For example, instead of using the regulation of certain pesticides, this chapter uses farming issues in general in hopes that the findings can be applied to other issue areas.

Congress does not officially designate issues as “symbolic” or “resource driven.” To make this distinction, I use the way in which Congress appropriates funds to the four issues to make the distinction. Although immigration and gun control played a large part in the 2016 debate, the amount of federal funds directed towards these issues are dwarfed by the amount of funds appropriated to energy and farming. In 2017, the Department of Energy received 35.3 billion dollars to carry out its mission “to ensure America’s security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.” The department of Homeland Security received 42.4 billion dollars but only 3.2 billion was allocated to Immigration and Customs Enforcement (ICE). The Farm Bill is a large piece of legislation renewed roughly every five years that largely determines subsidies to farmers and Supplemental Nutrition Assistance Program (SNAP). These bills
are quite large, totaling nearly 5 billion dollars in direct payments to farmers alone in the 2010 version of the bill.

### 3.5 Data

The data span from the 107th to the 113th Congress. The unit of analysis is House member-term. Accounting for missing data, each model uses 2,010 member-terms. Together, the data used in this analysis combine information from three separate sources. To measure the dependent variable, bill sponsorship on specific issues, the Congressional Bills Project data [Adler and Wilkerson 2006] provides a comprehensive set of bills introduced from 2001-2014. The information on these bills includes the title and information on the bill’s sponsor. The second source, used to measure local and national issue salience comes from the core data created by this dissertation project. It is front page titles, abstracts, and keywords from major state newspapers across 40 states between 2001 and 2016. The information on front page articles were extracted from the Lexis Nexis and ProQuest databases. Each database contained the title and keywords while Proquest also included article abstracts\(^1\). For each state, the requirement was that the paper must be circulated across the entire state. The largest paper by circulation was chosen for each state. If the largest circulating paper was not available, the next was chosen. States that did not have a fully circulated paper available were omitted from this analysis. The final source, information on the members of the House of Representatives, is largely provided by Volden and Wiseman (2014) from their data on legislative effectiveness. These data include information about a member’s demographics, their standing in the chamber, and their ideology using NOMINATE scores (Poole and Rosenthal 1991).

To identify news articles and bills that contain subject matter relating to the four issues, a dictionary approach was used. Each bill title and article title/abstract/key words

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\(^1\) Several years for each publication were not available. Please see appendix A.0.1 to see sources for each of the 40 states.
were passed through a dictionary\textsuperscript{2} containing key words for each issue area. The key words took a conservative approach rather than an aggressive approach\textsuperscript{3} meaning that fewer key words were preferred to a large number of key words. This technique reduces type one errors where articles or bills not associate with the four topics are tagged as such. This measurement strategy should produce more consistent measurements of each topic.

One concern with this approach is creating an endogenous measure. National lawmakers can generate salience around any topic. Therefore, issue uptake could be covered by state publications which would then inflate the influence that local and national salience has on lawmaking. To address this problem, articles tagged as containing policy were sent through a second dictionary containing keywords that relate to salience generated by the House\textsuperscript{3}. Articles that contained these lawmaking keywords were removed from the numerator leaving only articles that were generated by events or the actions of other lawmakers.

The dependent variable, bill sponsorship, was measured two separate ways. The first method used a binary dependent variable that resulted in a one if the member sponsored a bill related to the given issue and zero if the member did not. The second method accounts for the variation caused by a member sponsoring multiple bills in a given issue area. This method resulted in a count of bills rather than a binary indicator. Table 3.1 shows the total number of bills for each issue area. For the binary dependent variable, a logistic model was chosen. For the count dependent variable, a negative binomial model was chosen as $\lambda$ (the parameter for inflation) was above one, suggesting the variance was larger than the mean. AIC and BIC tests also preferred the addition of the parameters introduced by the negative binomial model.

The independent variables of focus, local salience and national salience, are measured using a percentage. Each of the 576,323 front page articles were passed through the dictionaries for each issue. Each article was marked as a one if it contained a key word and zero if

\textsuperscript{2} See key words for bills and newspaper articles in appendix A.0.3

\textsuperscript{3} Please see appendix A.0.3 for a list of the lawmaking keywords
it did not. This process was repeated for each of the four topics. The total articles for each issue are presented below in table 3.1.

The final measure of the independent variable is a percent for both local salience and national salience. In the numerator is the total number of articles that contained an issue key word. The denominator is the total number of articles available in the search for the given time period. The time span that corresponds with the member term is a three year span. The time period includes the two years of the member-session and the year prior to the member-session. This decision was made to account for the total amount of time the session was ongoing and for the election pressures that occur in the year prior. The three year time span results in some years being used in multiple member-terms.

Local salience is measured by taking the three year percentage for each issue using the lawmaker’s home state newspaper. For example, Nancy Pelosi’s (D-CA) local immigration salience measure for the 113th Congress was constructed by counting each article that contained an immigration key word from the Los Angeles Times between 2012 and 2014, placing that count in the numerator, then counting all articles from the Los Angeles Times between 2012 and 2014, placing that count in the denominator, and calculating a final percentage. National salience was the same for each member for each term. The national score was derived by averaging the local score for each state available for a given term.

The formal hypotheses are stated below:

**Hypothesis 1:**

For symbolic issues (gun control and immigration), the effect of national issue salience will have a positive effect on both the choice to sponsor legislation and the count of sponsored legislation in those issue areas.

**Hypothesis 2:**

4 Meaning that the national salience measure is identical for each member in a given term but the measure changes for each term
For resource issues (energy and farming), the effect of national issue salience will have no effect on both the choice to sponsor legislation and the count of sponsored legislation in those issue areas. Local salience will have a positive effect on both the choice to sponsor legislation and the count of sponsored legislation in those issue areas.

Table 3.1: Bills and Articles by Issue

<table>
<thead>
<tr>
<th>Issues</th>
<th>Total Bills</th>
<th>Total News Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>1,534</td>
<td>32,011</td>
</tr>
<tr>
<td>Farming</td>
<td>704</td>
<td>13,255</td>
</tr>
<tr>
<td>Gun Control</td>
<td>425</td>
<td>1,245</td>
</tr>
<tr>
<td>Immigration</td>
<td>747</td>
<td>11,554</td>
</tr>
</tbody>
</table>

Figure 3.1 shows each of the four national series placed on the same plot, monthly. The plot shows a different unit of analysis (monthly) than used to construct the local and national issue salience scores (three year average) in order to present more variation. Energy articles are the most prevalent while gun issues are the least. These issues provide interesting variance in issue salience. One of the resource issues, energy, and one of the symbolic issues, gun issues, appear to be driven by shocks in issue salience while the other two show less variation over time. Qualitative analysis of the articles show that the spikes in energy coverage relate to sudden changes in the price of oil. The shocks in gun coverage result from mass shootings such as Sandy Hook and Pulse Nightclub. This variation in time series shocks speak to the generalizability of the findings in this chapter.

The below figure (figure 3.2) shows the correlation between states measured at the yearly level. Green dots indicate that the changes in coverage between two states are positively correlated over time and red dots indicate that the coverage in negative over time. The correlation to the second decimal point is shown inside the dot. The two issues that contained spike in their monthly series, gun control and energy, exhibit strong positive

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5 Not all 40 states are included due to limitations from missing years for some publications
correlation across the states. The two issues that do not contain large random shocks, immigration and farming, show more independence across the states. Out of the four issues, farming appears to show the most independence across states over time.

Immigration, one of two symbolic issues does not show a strong positive correlation over time while energy, one of the two resource issues does. This trend shows that there is good variation across the sample of issues used for the case studies. There is one symbolic issue and one resource issue that contain many spikes in their series. The other two issues do not contain large fluctuations in interest.

The models of issue uptake (in binary and count form) contain additional covariates. The first is a dependent variable lag to account for lawmakers that sponsored legislation on an issue in the previous term. These lags account for temporal autocorrelation and the tendency for lawmakers to specialize in certain policy areas (Bernhard et al., 2017). Since the models are member-term, several aspects of the lawmaker are captured to account for differences in legislative style. The party and majority status are included to control for dif-

Figure 3.1: Four Issues over Time
Figure 3.2: Correlation Heat Maps for Issues Across States
ferences both across Democrats and Republicans as well as any shifts in behavior that occur when changing majority status. Although Volden and Wiseman (2014) show little difference in the proclivity for sponsorship across major and minor party status, there is little work on the types of issues that members work on depending on their party status.

The gender of the lawmaker is included as there are noted differences in legislative style between men and women. Women are found to be bridges between parties (Volden et al., 2013) and sponsor bills on different types of issues compared to men (Rocca and Gordon, 2010). In addition to the lawmaker’s gender, several variables on their status in the House are also included: a variable for committee chair status and subcommittee chair status. Members in these types of positions produce more legislation. Although not relevant for this analysis, the bills produced by members in these types of leadership positions are also more successful on average. This finding suggests that chairs of committees and subcommittees are more tasked to sponsor needed legislation that may already be on the legislative agenda.

A member’s committee membership has a large influence on the type of legislation that member produces (Adler and Lapinski, 1997; Volden and Wiseman, 2014). A relevant committee variable was included to capture bill sponsorship explained by the type of work a member’s committee is responsible for. For immigration and gun control, a member received a one for their relevant committee if they were a member of the Judiciary Committee or the Committee on Education and Labor. For the energy model, a member received a one if they were a member of the Committee of Energy and Commerce. For the issue of farming, a one was given to members who were a member of the Committee on Agriculture. Members not on a relevant committee received a value of zero for this variable.

Lastly, the absolute value of a member’s DW-NOMINATE score was included to account for their ideology extremity. Using theories of partisan warfare (Theriault, 2013) it can be expected that certain members may be responsible for producing bills that are meant

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6 Note, some committee names change over time but the jurisdiction of these committees remained constant during the time span of this analysis.
to emphasize the distance between parties on certain ideological and non-ideological issues. This variable should have more predictive power on the symbolic issues of gun control and immigration. Table 2.2 shows the model results for the binary dependent variable and table 2.3 shows the model results for the count dependent variable.
### 3.6 Results

Table 3.2: Model Results

<table>
<thead>
<tr>
<th></th>
<th>Farming</th>
<th>Energy</th>
<th>Immigration</th>
<th>Gun Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lagged DV</strong></td>
<td>2.290***</td>
<td>1.863***</td>
<td>2.557***</td>
<td>3.352***</td>
</tr>
<tr>
<td></td>
<td>(0.186)</td>
<td>(0.137)</td>
<td>(0.183)</td>
<td>(0.286)</td>
</tr>
<tr>
<td><strong>Local Salience</strong></td>
<td>24.403***</td>
<td>8.417**</td>
<td>28.338***</td>
<td>39.120</td>
</tr>
<tr>
<td></td>
<td>(8.065)</td>
<td>(3.597)</td>
<td>(5.389)</td>
<td>(25.888)</td>
</tr>
<tr>
<td><strong>National Salience</strong></td>
<td>−25.164</td>
<td>13.918</td>
<td>70.950**</td>
<td>291.773***</td>
</tr>
<tr>
<td></td>
<td>(30.961)</td>
<td>(9.445)</td>
<td>(35.979)</td>
<td>(56.086)</td>
</tr>
<tr>
<td><strong>Democrat</strong></td>
<td>0.367*</td>
<td>0.216</td>
<td>0.235</td>
<td>0.782***</td>
</tr>
<tr>
<td></td>
<td>(0.190)</td>
<td>(0.141)</td>
<td>(0.183)</td>
<td>(0.289)</td>
</tr>
<tr>
<td><strong>Majority Status</strong></td>
<td>0.533***</td>
<td>0.478***</td>
<td>0.098</td>
<td>−0.115</td>
</tr>
<tr>
<td></td>
<td>(0.175)</td>
<td>(0.134)</td>
<td>(0.177)</td>
<td>(0.270)</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>0.224</td>
<td>−0.560***</td>
<td>−0.090</td>
<td>−0.183</td>
</tr>
<tr>
<td></td>
<td>(0.187)</td>
<td>(0.169)</td>
<td>(0.195)</td>
<td>(0.284)</td>
</tr>
<tr>
<td><strong>Absolute DWS</strong></td>
<td>0.038</td>
<td>0.365</td>
<td>0.919**</td>
<td>1.462**</td>
</tr>
<tr>
<td></td>
<td>(0.452)</td>
<td>(0.336)</td>
<td>(0.430)</td>
<td>(0.627)</td>
</tr>
<tr>
<td><strong>Chair</strong></td>
<td>−0.691*</td>
<td>−0.241</td>
<td>0.233</td>
<td>0.138</td>
</tr>
<tr>
<td></td>
<td>(0.411)</td>
<td>(0.261)</td>
<td>(0.303)</td>
<td>(0.471)</td>
</tr>
<tr>
<td><strong>Subchr</strong></td>
<td>−0.080</td>
<td>−0.254*</td>
<td>−0.061</td>
<td>0.378</td>
</tr>
<tr>
<td></td>
<td>(0.196)</td>
<td>(0.154)</td>
<td>(0.203)</td>
<td>(0.289)</td>
</tr>
<tr>
<td><strong>Relevant Committee</strong></td>
<td>1.045***</td>
<td>0.641***</td>
<td>0.290*</td>
<td>0.065</td>
</tr>
<tr>
<td></td>
<td>(0.191)</td>
<td>(0.151)</td>
<td>(0.173)</td>
<td>(0.255)</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>−3.039***</td>
<td>−3.228***</td>
<td>−4.325***</td>
<td>−5.017***</td>
</tr>
<tr>
<td></td>
<td>(0.688)</td>
<td>(0.518)</td>
<td>(0.532)</td>
<td>(0.501)</td>
</tr>
</tbody>
</table>

| Observations         | 2,210    | 2,210   | 2,210       | 2,210       |
| Log Likelihood       | −669.709 | −1,020.300 | −694.021 | −391.836   |
| Akaike Inf. Crit.    | 1,361.418 | 2,062.600 | 1,410.043 | 805.672    |

*Note:* $^*p<0.1; ^{**}p<0.05; ^{***}p<0.01$
Table 3.3: Model Results, Sponsorship Count

Dependent variable: Sponsorship Count

<table>
<thead>
<tr>
<th></th>
<th>Farming</th>
<th>Energy</th>
<th>Immigration</th>
<th>Gun Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged DV</td>
<td>1.094***</td>
<td>0.617***</td>
<td>1.092***</td>
<td>1.856***</td>
</tr>
<tr>
<td></td>
<td>(0.089)</td>
<td>(0.044)</td>
<td>(0.075)</td>
<td>(0.171)</td>
</tr>
<tr>
<td>Local Salience</td>
<td>25.625***</td>
<td>11.003***</td>
<td>23.105***</td>
<td>32.121</td>
</tr>
<tr>
<td></td>
<td>(6.838)</td>
<td>(2.969)</td>
<td>(4.574)</td>
<td>(24.336)</td>
</tr>
<tr>
<td>National Salience</td>
<td>−12.579</td>
<td>4.868</td>
<td>70.812**</td>
<td>281.913***</td>
</tr>
<tr>
<td></td>
<td>(27.786)</td>
<td>(7.771)</td>
<td>(32.066)</td>
<td>(50.720)</td>
</tr>
<tr>
<td>Democrat</td>
<td>0.359**</td>
<td>0.138</td>
<td>0.190</td>
<td>0.787***</td>
</tr>
<tr>
<td></td>
<td>(0.174)</td>
<td>(0.118)</td>
<td>(0.163)</td>
<td>(0.267)</td>
</tr>
<tr>
<td>Majority Status</td>
<td>0.577***</td>
<td>0.362***</td>
<td>0.056</td>
<td>−0.116</td>
</tr>
<tr>
<td></td>
<td>(0.158)</td>
<td>(0.112)</td>
<td>(0.162)</td>
<td>(0.252)</td>
</tr>
<tr>
<td>Female</td>
<td>0.174</td>
<td>−0.456***</td>
<td>−0.007</td>
<td>0.037</td>
</tr>
<tr>
<td></td>
<td>(0.170)</td>
<td>(0.142)</td>
<td>(0.172)</td>
<td>(0.244)</td>
</tr>
<tr>
<td>Absolute DWS</td>
<td>0.074</td>
<td>0.019</td>
<td>0.849**</td>
<td>1.642***</td>
</tr>
<tr>
<td></td>
<td>(0.414)</td>
<td>(0.283)</td>
<td>(0.386)</td>
<td>(0.568)</td>
</tr>
<tr>
<td>Chair</td>
<td>−0.455</td>
<td>−0.148</td>
<td>0.560**</td>
<td>0.109</td>
</tr>
<tr>
<td></td>
<td>(0.340)</td>
<td>(0.216)</td>
<td>(0.250)</td>
<td>(0.448)</td>
</tr>
<tr>
<td>Subchr</td>
<td>−0.097</td>
<td>−0.097</td>
<td>0.077</td>
<td>0.361</td>
</tr>
<tr>
<td></td>
<td>(0.173)</td>
<td>(0.128)</td>
<td>(0.179)</td>
<td>(0.269)</td>
</tr>
<tr>
<td>Relevant Committee</td>
<td>0.982***</td>
<td>0.596***</td>
<td>0.477***</td>
<td>−0.006</td>
</tr>
<tr>
<td></td>
<td>(0.168)</td>
<td>(0.122)</td>
<td>(0.148)</td>
<td>(0.239)</td>
</tr>
<tr>
<td>Constant</td>
<td>−3.159***</td>
<td>−2.491***</td>
<td>−4.044***</td>
<td>−4.871***</td>
</tr>
<tr>
<td></td>
<td>(0.619)</td>
<td>(0.425)</td>
<td>(0.473)</td>
<td>(0.458)</td>
</tr>
</tbody>
</table>

Observations    | 2,210      | 2,210      | 2,210       | 2,210       |
Log Likelihood   | −863.250   | −1,476.550 | −937.091    | −512.157    |
θ                | 0.682***   | 0.864***   | 0.619***    | 0.441***    |
|                | (0.129)    | (0.120)    | (0.099)     | (0.113)     |
Akaike Inf. Crit.| 1,748.501  | 2,975.101  | 1,896.182   | 1,046.315   |

Note: *p<0.1; **p<0.05; ***p<0.01
The above results show overall support for the both hypotheses. The two resource driven issue areas, farming and energy, show a statistically significant positive effect of local salience on lawmaker issue uptake in both models. National salience does not have a statistically significant effect on those two issues across both models. For the two symbolic issues, immigration and gun control, national salience has a statistically significant positive effect on issue uptake across both models. Local salience has a statistically significant positive effect on immigration, but no such effect on gun control.

Before moving to visual interpretation of the salience results, several other variables in the model show interesting effects on issue uptake. First, relevant committee is a strong predictor of who sponsors farming, energy, and immigration legislation. Interestingly, leadership positions such a chair positions on full or sub committees do not show statistical differences in issue uptake for most issues. Volden and Wiseman’s work concludes that the bills from committee chairs advance further than rank and file members. Results from this chapter show that chairs are no more prolific sponsors on these issues than rank and file members. This suggests that issue uptake is a different factor than legislative success completely. Finally, majority status appears to have an affect on sponsorship on the two resource issues. Majority partisans sponsor more on farming and energy than members of the minority party. One possible explanation for this finding is that the majority party hold greater responsibilities in dividing government resources, which incentivizes majority members to sponsor legislation that would benefit their constituents. Although their bill may not pass or even make it to a floor vote, sections of their bill may be used in the final omnibus bill that allocates resources (Casas et al., 2018).

3.6.1 Visual Interpretation of Results

Since each model does not present linear results, visual interpretations of model simulations are presented below to provide a clearer understand of the effect sizes.

The below are simulated effect sizes across the range of both the national and local
salience variable. Four simulations are done for each issue area: once for local salience on binary issue uptake, once for local salience on count issue uptake, once for national salience on binary issue uptake, and once for national salience on count issue uptake. In total, sixteen simulations were run (two from each of the eight models). National salience is shown on the right two cells and local salience on the left. Results from the logistic models are shown on the top and results from the negative binomial models are shown on the bottom. For each model, continuous variables were set to their means and categorical variables were set to their medians. The program simulated 1000 values of the dependent variable for 50 values of the independent variable using coefficient sizes as the mean and standard errors as the standard deviation. The solid lines are the median of the simulation and the shaded ribbon shows the 95% confidence intervals.

For the issue of gun control, national salience (shown in the two simulations on the right) has a statistically significant effect. The predicted effect of going from the minimum of national salience to the maximum brings the chance of a representative sponsoring a bill from 0.35 to 0.5, a 15 percentage point increase. Although the predicted effect of local salience is positive, it is not statistically significant at the 95% level. In the count models, the predicted change from the minimum national salience to the maximum national salience is 0.25 additional bills.
Out of the four issues, immigration is the only one that is influenced by both national and local salience. The below simulations show that local salience appears to have a more drastic effect than national salience. Although the time span of this study (2001-2014) does not cover the time period during the 2016 election where immigration was a central focus, it does cover several periods where immigration became a national issue such as the Gang of Eight proposal and several attempts by President Obama to achieve a permanent solution to those affected by the Deferred Action for Childhood Arrival decision. These results show that national issues indeed increase the count of bills national lawmakers offer on the issue. One explanation for the larger effect size of local salience is that there is a much larger range on local salience than national salience. The amount of national attention paid to immigration remains fairly constant over the time span of this study leaving little variation. These effects are smaller than the effects that national gun control salience has, which has a much larger amount of national salience. Local salience has a larger effect.
Moving to resource issues, farming greatly demonstrates the predictions made in hypothesis two. Local salience has a strong effect on the propensity of a member to introduce a bill regarding farming, even controlling for membership on the Agricultural committee. National salience has a predicted effect close to zero with a large 95% confidence interval. For local salience in the count model, a move from minimum of local salience to the mean brings the predicted value from roughly zero to 0.4. An increase to the maximum value of local salience brings the predicted value to just below two bills on farming. Given that there are roughly 100 bills per Congressional term, this increase is substantial.
The effects of local and national salience on energy bills is largely the same as the effects on farming bills. Local salience has a positive effect on the number of energy bills a lawmaker introduces. Moving from local salience’s minimum to maximum value brings the predicted number of bills introduced from 0.25 to just over 1. National salience does not have a statistically significant effect.

The combined results from energy and farming suggest that resource issues respond to local salience, not national salience. The consistency across both issues, one that appears to stay relatively constant and one that sees large fluctuations, speaks well for the robustness and generalizability for these findings. The mixed findings on immigration and gun control suggest that both local and national salience can be in play for symbolic issues.
3.7 Conclusion and Discussion

This chapter proposed that bill sponsorship was a signal to both a member’s party and a member’s constituents. This argument advances existing theories of issue uptake by explaining which issues result in a lawmaker responding to pressure from the party and which issues result in a lawmaker responding to constituents. I argue that members will be attentive to constituent issue salience (local issue salience) for resource issues as those issues have the greatest immediate impact on constituents and do not lead to high profile breaks with the party. For symbolic issues, members are more attuned to national pressure as these issues result in the greatest benefits from partisan victories. Results from the four cases (gun control, immigration, energy, and farming) largely support these theories of issue uptake. On the two resource issues, local issue salience drives bill sponsorship while the two symbolic issues see a confluence of both local and national salience as motivators to sponsor legislation.
One of the broadest reaching conclusions of these findings are on legislative style and how members balance the difficult relationship between constituents and party, especially in the polarized lawmaking environment of today. The cross pressures of party and constituents on roll call voting is well documented (Carson et al., 2010; Lebo et al., 2007). However, roll call voting is not the only form of lawmaking behavior in which members are evaluated (Harden, 2013, 2015). Although roll call votes force lawmakers to sometimes make a difficult decision that pits constituents against party, bill sponsorship is a less restrictive form of legislative expression. Lawmakers are free to sponsor on issues that best help their reelection chances. This way, lawmakers can demonstrate their attentiveness to important resource issues to constituents and their adherence to core party believes to leadership.

This chapter also speaks to how Congress continues to work despite seemingly overwhelming partisan gridlock. The failings of national lawmakers is well documented in contemporary media reports of failed legislative attempts. However, political science shows that although the number of passed bills has decreased, lawmakers still function at their core job of renewing laws and keeping the government running (Adler and Wilkerson, 2013). This chapter shows that although the most combative types of issues gain national attention (Lee, 2009), lawmakers are still hard at work on issues that resonate with their constituents.

The data contributions from this chapter also advance research in issue salience and issue uptake in three key areas. First, the corpus of news articles allows for the measurement of all issues at the state level. Previously, work on state issue salience was limited to measuring issues that could be captured by state level conditions. By searching through front page article text and keywords, researchers have a wider selection of issues available to track across different states over time. The second data contribution is for more comparable measures across issues. By tracking two issues in a given state over time, relative salience is comparable as the two issues are measured in the same unit. More, this strategy allows for more comparable cases which would eliminate measurement problems that make time series cross sectional analysis on issue salience difficult. Third, this chapter used a two stage
keyword search. The first identified articles that fit into one of the four case studies and the second identified articles that were written in response to action by Congress. By filtering out articles tagged in the second step, concerns of endogeniety (similar to those identified by Lax and Phillips (2009b, 2012) were ameliorated. This technique has not been used before in measuring issue salience and allows for state level measures of issue salience.

The findings from this chapter lead to several extensions that would improve the field’s knowledge of issue uptake and issue salience. Some extensions would take the work from this chapter and place them in different contexts such as the United States Senate and state legislative issue uptake as well as expanding the set of issues used. This chapter focused on the micro level form of issue uptake, how individual members chose the issues they sponsor based on issue salience at home and national issue salience. Future research on legislative agendas, both at the state and national level, could further this type of research to see what types of salience determine which issues enter the national agenda.

The main contribution from this chapter suggests that political science should consider different types of issues and issue salience. A broad theory that explains how different issues receive attention is unlikely. Rather, the nuances in issues and salience alike will explain a more complex picture of lawmaking. Continued work on this subject should better the discipline’s understanding of issue attention that began long ago with the seminal work by Schattschneider.
Chapter 4

State Salience and Firearm Policy: How State Governments Respond to Salient Issues

How do state governments respond to salient events that go unaddressed by national lawmakers? This analysis uses shooting related news coverage and the debate on gun control to study how salience changes state lawmaker behavior. The theory predicts that state specific issue salience acts as a catalyst for lawmaker activity, while national level salience does not. The result is polarized state firearm laws resulting from salient state events. This study combines two unique sources of data. The first, a comprehensive list of gun policies enacted by the states gathered by the State Firearm Laws Project. The second, a new collection of front-page state newspaper articles spanning 2001-2016 (the SND). Combined, these data show that salient shooting events bring lawmakers in all states to action, resulting in polarized firearm policies across the United States.

4.1 Introduction

In the past 24 years, the Federal Government has done little to amend the nation’s existing firearm laws. The 1994 Violent Crime Control and Law Enforcement Act included a provision that banned assault weapons in the United States. Since then, the only changes to national firearm laws were the expiration of the assault weapons ban and the Protection of Lawful Commerce in Arms Act that shields firearm manufacturers from lawsuits. Is this inaction a result of low interest in the topic, or failure to find middle ground? Considering the
public outcry after events like Virginia Tech in 2007, Sandy Hook in 2012, Pulse Nightclub in 2016, and Las Vegas in 2017, low interest is likely not the reason behind national government inaction. Rather, the issue has appeared on the national agenda several times highlighting the starkly different ideas on how the national government should approach an individual’s right to own a firearm.

The same story does not apply at the state level. Gridlocked at the national level, interest groups like ALEC and others focused resources to change state policy (Garrett and Jansa, 2015). States passed laws that restrict gun ownership such as more stringent background checks in Connecticut after the Sandy Hook shootings. However, some states have lowered restrictions on the ownership and use of firearms such as Florida passing a “stand your ground” law that lowered the burden of proof in cases of self defense. Have state firearm laws really polarized? What causes state lawmakers to act on policies like firearm ownership?

This chapter uses firearms as a case study to answer two questions regarding state policy in the face of national government inaction. One, do state lawmakers respond to state focusing events or national focusing events? Two, why do states polarize policy in response to national government inaction? I show, using two new data sources, that lawmakers in both Republican and Democratic controlled states react to salient state firearm news. The result is polarized state firearm policy. This chapter advances models of policy change in a federal system by showing that federally ignored issues are handled by the states and that salience is a key ingredient needed for state level policy change.

To test the new theories of policy making, this chapter uses two new sources of data to create three key measures. The first source is a corpus of front page state newspaper article titles and keywords from 2001-2016. These articles are used to measure annual state level firearm salience. That measure is then broken into two distinct types of salience: exogenous event driven salience and endogenous lawmaker driven salience. By breaking the type of salience apart, the chapter avoids issues of endogeniety highlighted by Lax and Phillips
It also traces the relationship between unpredictable firearm salience like reaction to a mass shooting and salience driven by lawmaker action that is a response to a salient event.

The third data source is from Siegel et al. (2014) which tracks 132 state firearm provisions over time allowing for a measure of how conservative or liberal a state’s firearm laws are in a given year. Combined, these data sources tell a complete narrative of how states address issue areas that are largely ignored at the national level. What follows is a description of how this work fits with existing work in issue salience in lawmaking.

4.2 Models of Policy Change

Two established theories of policy change, Baumgartner and Jones (2010) and Kingdon and Thurber (1984) share many similarities. One, they focus on policy areas that have undergone large changes at the national level. Take the examples from Baumgartner and Jones (2010), smoking, nuclear energy, drunk driving laws and others that were addressed by the national government. These models of policy change begin with some focusing event (Birkland, 1998) (or in the Kingdon model, a problem stream) changing public attention towards an issue. Eventually, public perception of the issue changes, which creates a chain reaction through linkage institutions to lawmakers that eventually results in new policy for that issue area. More research is needed on what occurs after a focusing event that results in gridlock. We know less about what happens after a failed attempt to change a policy status quo.

Congress literature placed a larger emphasis on gridlock. Newer theories of lawmaking point out that most of the issues that occupy the national agenda are intended to cause gridlock (Lee, 2009; Theriault, 2013). Many members of the majority party are better off using issues that will not cause a difficult vote (Cox and McCubbins, 2003) rather opting for issues that allow members to make symbolic gestures towards constituents. Although Congress scholars have detailed the causes of gridlock, the aftereffects of gridlock is a lesser explored topic. What happens to issues that generate large amounts of salience, but do not
result in policy change at the national level?

In a federal system like the United States, policy demanders like interest groups have more than one avenue to change policy. If the process is stalled at one level, interest groups and policy entrepreneurs can attempt to influence the lawmaking process at a different level. We know that in certain areas, the national government can dictate a unified policy across the United States. Supreme Court hearings dictate that all states recognize same sex marriage[^1] and Federal funding for highways require states adopt a hard drinking age of 21.[^2] However, when the national government is prohibited or fails to make unified policy, states have much more freedom to implement their own laws. Sub-national levels of government act as laboratories of democracy (Berry and Berry 1990; Shipan and Volden 2006, 2008; Sabatier and Weible 2014). This experimentation story focuses more on trying out the technical aspects of lawmaking and less on the strategic decision to influence policy at a lower federal level of government. Most models of state policy change rely on stories of competition or emulation (Berry and Berry 1990; Volden 2002; Baybeck et al. 2011). These narratives show that policy often converges across the states. When one state adopts a good idea, the neighbor then adopts the idea eventually ending with many states implementing similar policy. However, states often adopt ideas based on ideological similarities (Grossback et al. 2004; Garrett and Jansa 2015). If states are indeed learning about policy through ideology, state policy will likely be heterogeneous as a result. Liberal states will learn from other liberal states while conservative states learn from conservative states resulting in polarized state policy. This chapter expands on the conditions needed for polarized state policy by finding out when state lawmakers begin to work on policy areas that are gridlocked at the national level.

Much of the recent work considering salience in the context of state policy making has come from Lax and Phillips Lax and Phillips (2009a, 2012). The reception to their work

[^1]: Obergefell v. Hodges
[^2]: National Minimum Drinking Age Act of 1984
has largely been methodological regarding their use of Multi-Level Regression with Post-Stratification (MRP) (Pacheco 2011; Warshaw and Rodden 2012). Caughey and Warshaw (2016) show that state policy liberalism has polarized over time. There has been little to incorporate issue salience in models of state policy. Less attention is given to the larger theoretical contributions of these articles. There is little to understand how issue salience plays a role in the relationship between public opinion and policy representation in the states. State governments do not share the same bright national spotlight with the Federal Government. How do focusing events work across many governments that respond to different populations that pay varying attention to the events?

4.3 Theory

Salience is often thrown into models of lawmaking and representation but more often it is considered a control rather than a variable of substantive interest. This section treats salience as a variable of theoretical interest and one that is needed to spark lawmaker action. What follows is the model for how this chapter expects lawmaking to work at the state level when national lawmakers take little to no action on a given issue.

4.3.1 Issues that Polarize

The theory presented in this chapter is not intended to fit all types of issue areas. Rather, it is best tailored for issues that are both salient and polarizing. In this chapter I consider firearm policy but the theory explained in this section could extend to many other important areas such as immigration, abortion, criminal justice and more. These types of issues have become increasingly popular to place on legislative agendas at the national level (Lee 2009; Theriault 2013) and in presidential campaigns (Hillygus and Shields 2014).

Not all issues are highly salient and polarizing. Lawmakers frequently work on issues that are not under the national spotlight. Expiring legislation largely determines the legislative agenda (Adler and Wilkerson 2013) and often is voted upon with little attention
from the public. Much of what Congress does is appropriate funds to various government programs that are then distributed to the states. Examples include farm bills, highway bills, and Medicaid and Medicare. Although gridlock has increased over time in Congress (Binder 2015), Congress eventually appropriates funds to key government programs. Additionally, state budgets are quite small in comparison to the Federal Government’s. Should the national government eventually fail to renew a large distributive program for a substantive amount of time, the ability for the states to step in and polarize policy would be difficult.

The types of issues that fall under the scope of this analysis have the following qualities: they require small amounts of funding, they are salient, and the national government has done little to address them through policy change. How then does local and national salience influence state laws to polarize?

4.3.2 State Salience or National Salience?

What type of attention should state lawmakers react to? News does not stop at state boarders. An event that happens in Connecticut could impact the actions of lawmakers in New York. In fact, shared news may be one of the drivers of geographical diffusion (Berry and Berry 1990). Do state lawmakers react to national media attention, state media attention or both?

This chapter argues that state lawmakers should react to state news, not national news. It is the job of state lawmakers to take care of the concerns of their constituents, not people in other states. A large focusing event, like a mass shooting, may act as a small catalyst for action across several states, it likely will have the largest impact in the state where it occurs. Assuming that state lawmakers are reelection motivated like their counterparts in Congress (Mayhew 1974), state lawmakers should focus on issues that they can take action on that directly affects their constituents. Addressing issues from other states should have little impact on reelection given that most voters are motivated to vote in ways that best benefits themselves. Voters are keenly aware of the issues that most impact themselves.
Many of these issues are local: funding for schools, policing, environmental laws and others. State lawmakers that ignore local issues for national ones will likely fail to win reelection.

4.3.3 Exogenous and Endogenous Salience

This chapter argues that a sharp change in salience is a necessary part of the state policy polarization process similar to a focusing event (Birkland, 1998) or media storm (Boydston et al., 2014b). Therefore, if the national government fails to change policy, and public interest in that issue wanes, it is possible that states will not change policy. This chapter explores how state lawmakers respond to state interest in an issue that did not spark change at the national level. Baumgartner and Jones (2010) explain salience as the initial public reaction to some event that changes their perspective on an issue. They use the near disaster at Three Mile Island as an example of an unforeseen event changing how people feel about a particular policy area, in that case, nuclear energy. This chapter extends their concept of salience. The salience around a given issue does not begin and end with some sudden event like Three Mile Island. Any issue salience that occurs from an event will reverberate around the issue subsystem. Pundits, interest groups, and lawmakers react to sudden events, which therefore create their own issue salience. Lax and Phillips (2012) briefly touch on this measurement issue. They felt they were unable to properly measure issue salience at the state level since state newspapers would cover both the initial event that increased public attention towards an issue. This study separates salience into event driven (exogenous) and lawmaker driven (endogenous) salience. Dividing the two concepts allows for more accurate modeling of exogenous salience and the lawmaker reaction to it.

I argue that the link between exogenous and endogenous salience is key in order for policy to change at the state level. Without some motivation, lawmakers will not organize to craft meaningful legislation on these polarizing issues. This argument is akin to a focusing event or problem stream in longstanding theories of policy change (Kingdon and Thurber, 1984; Baumgartner and Jones, 2010). Without some catalyst, lawmakers will focus their
energy on other issues. In order to appear attentive, lawmakers focus on the issues that are most salient to the public.

4.3.4 Lawmaker Action

Not all lawmaker action results in changes to a policy status quo. Many actions result in no substantive change to statutes. Bill introduction (Woon, 2009; Rocca and Gordon, 2010; Volden and Wiseman, 2014), speeches (Hill and Hurley, 2002), and hearings all demonstrate that lawmakers are attentive to public concern but do not necessarily result in changes to policy. In the United States Congress, most bills do not become laws. Although there is variation in states as some limit introductions, the chance of a state bill becoming law is still small. Rocca and Gordon (2010) and Woon (2009) view introduction in Congress as a means to communicate with both the party and constituents. Members can show attentiveness to issues at home or that they are focused on issues that are pertinent to their committee assignment.

Even attention to an issue from party leadership does not mean that policy will change. The majority party may use that issue as a wedge issue to reinforce the differences between the two parties or purposefully force vulnerable members of the minority party to go on the record about an issue that pits their constituents against the majority of their party. There are several modern examples that demonstrate that not all salient lawmaking actions leads to change. The Gang of Eight generated a large amount of media attention on immigration but American policy remained. On gun control, Barbra Feinstein (D-CA) introduced legislation to ban assault weapons in the aftermath of Sandy Hook likely knowing that it had little chance of becoming law. Rather, she wanted to highlight members of her own party that were against it in hopes that the electorate would notice and eventually replace them with members that would be more likely to vote in favor of legislation increasing restrictions on accessing firearms.
4.3.5 Lawmaker Action Leading to Policy Change

When then does lawmaker action actually translate to substantive policy changes at the state level and when should those changes polarize state policy? I argue that several factors must be present. First, the national government must not have set policy in the issue area. As Federal policy trumps state policy, the national government has the ability to change state policy. Even in areas not covered by the Commerce or Elastic Clause, the Federal Government has the ability to force states into submission by only allocating funds if states comply with national standards. Withholding highway funding unless a state raised the minimum drinking age to 21 is one of many examples of this practice.

Second, the issue must be salient or experience some salient event that draws public attention. National lawmakers may react, but that reaction may not result in Federal policy changes. At the Federal level, inaction may be a purposeful choice as it allows the states to decide policy. Although constituents would prefer their ideal policy solution to be national law, allowing the states to decide often results in fewer policy losers. This national lawmaker inaction results in state policymakers mobilizing. A shock to an issue subsystem should first result in a wave of interest, then a reverberation of action from the rest of the system. In the context of firearms, a mass shooting should draw public attention to the issue, followed by lawmakers taking actions such as introducing bills, making speeches, and conducting hearing on firearms.

Lastly, the political conditions for policy change must be present in a state for their policy to polarize. The idea of certain conditions being met for policy change is akin to Kingdon and Thurber (1984) and his idea of windows. An open window requires the correct lawmakers being present. In today’s polarized political environment, unified (or even veto-player proof (Tsebelis, 2002)) government may be necessary to make any substantive change. With all these conditions met, policy should polarize across the states. The following sections present data and models to test this process.
4.4 Data

The purpose of this section is to apply new data to model the process explained in the theory section. First, tests show that news from events precede news from lawmaker action regarding firearms. Second, results show that states with Republican governors see less action than states with Democratic governors in response to firearm event related news. Finally, tests show that lawmaker action only leads to substantive policy change in states controlled by Democrats.

4.4.1 State Firearm Laws

The national government accomplished little in changing the status quo of national firearm laws since the Federal Assault Weapons Ban of 1994. Any attempt from Democratic lawmakers to make laws more restrictive is met with strong opposition from mostly Republican lawmakers, many of which are backed by the National Rifle Association. Attempts by Republicans to lower the barriers to owning a firearm typically fail to gain enough support in Congress to make substantial changes. This inaction by national lawmakers leaves gun ownership law reform to the states. The inaction by national government on a high profile issue is an ideal testing ground to measure the affect of salient events on state lawmaker activity. As there is little action from government, there should also be little outside noise interfering with the mechanisms at play in the state lawmaking subsystem. Although national lawmakers may speak about the existing nature of firearm policy in the United States, the states themselves do not have to react to actual policy originating from the Federal Government. Using the political, institutional, and cultural variation across states, more general conclusions on issue salience and lawmaking are made than studies can that only focus on national lawmaking.

The data come from the public health field. Siegel et al. (2014) track 132 firearm

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3 This act expired in 2004
provisions across all fifty states during the entire times span of this analysis. Provisions are common laws regarding restrictions to firearm access. Examples include mandatory training for concealed carry permits, universal background checks, and restrictions to owning assault weapons for those under 21. A variable is marked as 1 if the state has the restriction in the books in a given year. Tracking the number of restrictions each state has per year allows for a measure of how restrictive (liberal) or open (conservative) the state’s firearm policies are.

Figure 4.1 shows that restrictions towards firearm ownership have polarized from 2001 to 2016. The first plot shows each state’s number of gun restrictions on the y axis and the state’s mean legislator’s NOMINATE score (Shor and McCarty, 2011) on the x axis. States higher on the y axis have more restrictions and states further to the right on the x axis have more conservative legislators. This plot is repeated for each year of the study. Note how many states have very few restrictions on firearms around 2001. That cluster spreads as time progresses with many states adding restrictions to firearm ownership. The bottom plot shows the mean number of restrictions by year. Overall, the average state added three restrictions in the 16 years of the study with much variation around that mean. The rate at which states added restrictions increased towards the end of the study.

The change in state gun provisions follows a pattern of punctuated equilibrium as observed by Baumgartner and Jones (2010). Figure 4.2 shows the density of state year changes in gun provisions in density form. The large spike around zero denotes that most states do not change their laws regarding firearm policy in most years. However, states that do change their policy in a given year often change several of the 132 possible provisions at a given time. These changes in provision serve as one of the dependent variables in this analysis. It is a measure of substantial change to laws in each state. Has news coverage of salient gun related events changed over time and have those changes resulted in changes to policy?
Figure 4.1: Polarization of Firearm Provisions

(a) Facet Plot

(b) Over Time
4.4.2 State Firearm Salience

To measure firearm issue salience, two databases contained front-page news coverage were used: Lexis Nexis and ProQuest News and Newspapers. This strategy is similar to the work by Boydstun (2013) that classifies front page New York Times articles using the Policy Agendas Project scheme. The data used throughout this dissertation can be used in keyword searches or classified using more sophisticated techniques like machine learning. In this chapter, a simpler dictionary approach is used that produce sensible results.

Each database allows users to filter on articles that were front page. The reason for this decision is that front page coverage should be a fair representation of the important issues in a state and less prone to editorial bias. Each article from Lexis Nexis included the headline along with a series of keywords generated by the Lexis Nexis topic modeling algorithm. ProQuest contained the same two pieces of information about the article but also included an abstract. Combined, these sources cover 40 major publications from 40 states from 2001-2016.
Using newspaper coverage is a common way to measure issue salience in American and policy research (Kiousis, 2004; Boydstun, 2013; Wolfe et al., 2013; Boydstun et al., 2014b,a). Although more consumers of news are moving to online formats, newspapers continue to be an accurate source to measure which stories are occupying the attention of Americans. Front page stories especially capture what is important and typically have less editorial bias than other pages of the paper. Further, most articles that are included in print editions also are viewed on publication’s websites.

What then does gun coverage look like in the United States? Using a combination of 40 news sources, the below figure aggregates their coverage to show what percent of news was devoted to covering news related to mass shootings and debate on gun control. Figure 4.3 shows that mass spikes in coverage occur during time periods proceeding mass shooting events. For example, the large spike at the end of 2012 and the beginning of 2013 is largely from increased coverage relating to the Sandy Hook shootings. After time passes, the trend appears to be mean reverting as the nation loses interest and coverage of mass shootings and gun control reverts to its equilibrium. Figure 4.3 shows that legislative driven news and event driven news are closely related (a monthly correlation of 0.84). To determine which articles contained news on shootings and of those articles, which were legislative driven, a two stage dictionary approach was used. Each article was passed through a dictionary that contained words about shootings and the overall firearm debate. Of the 572,939 articles used in this analysis, 3,295 were marked as articles about mass shootings or gun control (0.6%). Of the articles that were about mass shootings or gun control, 2099 (63.7%) were legislatively driven.

Before connecting state firearm news coverage to policy, it is important to know which type of coverage precedes the other. Does event driven news lead to news created by lawmakers or does lawmaking news create event driven news? Theoretically, it makes sense that events lead to lawmakers taking action which then creates legislatively driven news.

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4 Words used in the dictionary for shootings and legislation may be found in A.0.4
Lawmakers are often reactive and seize the opportunity to portray themselves as active in the aftermath of a focusing event like a mass shooting. However, there is the possibility that lawmaker action somehow drives event driven news. To formally test this, both series are placed in a Granger causality test. Ideally, Each state’s series would be placed in their own Granger causality test, but due to the test’s sensitivity to missing periods, the average of the 40 states were condensed into the two series shown in figure 4.3. The aggregation allowed for no missing time periods. The series are monthly data, more granular than data that appear later in the analysis. This monthly test should provide insight into temporal ordering for models that must be run on annual data because of measurement constraints.

First, to run a Granger causality test, the series should be stationary. To test for stationarity, both series were sent through multiple Dickey-Fuller tests that used a series of lags and also accounted for the possibility of a drift or trend. All tests showed no indication of a unit root, strongly suggesting that the series were stationary and fit for a Granger causality test. To verify the augmented DF test, KPSS tests also showed no evidence of a unit root.
the results of the Granger causality show evidence that event related news Granger causes legislative driven news. The table below shows little evidence that legislative news Granger causes event driven news but it does show substantial evidence that event driven news Granger causes legislative driven news. Of course, Granger tests do not demonstrate formal causality, rather, the tests provide evidence that shooting events help explain lawmaker driven firearm news when controlling for different properties in the dependent series.

<table>
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<td>Legislation → Event, 4</td>
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<td>0.306</td>
</tr>
<tr>
<td>Legislation → Event, 5</td>
<td>1.23</td>
<td>0.297</td>
</tr>
<tr>
<td>Event → Legislation, 1</td>
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<td>3.81e-05</td>
</tr>
<tr>
<td>Event → Legislation, 2</td>
<td>9.28</td>
<td>0.0001</td>
</tr>
<tr>
<td>Event → Legislation, 3</td>
<td>6.27</td>
<td>0.0004</td>
</tr>
<tr>
<td>Event → Legislation, 4</td>
<td>4.69</td>
<td>0.001</td>
</tr>
<tr>
<td>Event → Legislation, 5</td>
<td>3.77</td>
<td>0.003</td>
</tr>
</tbody>
</table>

### 4.5 Models of Firearm Issue Salience and Lawmaker Action

The above analysis suggests that events lead to lawmaker action. To better understand how events lead to lawmaker action and the political contexts, the state series are placed in a full model. The purpose is to understand in what contexts does firearm related events lead to actions from lawmakers. Is this action limited to Democratic states or do all states see activity after these events?

The dependent variable in this model is the proportion of lawmaker driven firearm news in state i during year y. Years instead of months were selected to fit with later models that link news coverage to actual policy change, which is measured annually. The key independent
variables are the proportion of event driven news in state i during year y and the proportion of event driven news in state i during year y-1. The event driven news (and the lagged event driven news) are interacted with dummy variables for the type of institutional control in the state. The model is shown in three different forms: with only legislature control interacted, only governor control interacted, and both legislature and governor party control interacted with event driven firearm news. The formal hypothesis:

H1: an increase in state event driven news in year y and in year y-1 will lead to an increase in legislative driven news in year y

To fully specify the model, several other variables were included. First were national measures of legislative and event driven news to rule out spurious causation from a national trend regarding firearm activity. The national average was calculated by taking the average event and legislative driven news across all 40 states in year y. Next, political climate was controlled for using the Cook Index. The index calculates the state’s partisanship by comparing the state’s presidential vote in the previous two elections to the national average. A positive score indicates a state that leans more Republican than the national average and a negative score indicates the state is more Democratic. To account for interplay between the legislature and government a unified government indicator was included if both chambers of the state legislature and the state executive branch were controlled by the same party. Factors about the state legislature were also included. State fixed effects\(^5\) should account for much of the variance caused by differences in legislative professionalization but elements that vary year to year were included. Session length, the salary of the average legislator in the state and her salary from Bowen and Greene (2014) were included. Finally, an indicator for states that had articles from Lexis Nexis opposed to Proquest was included to account for any differences between the two sources.\(^6\)

\(^5\) Not reported in the tables
\(^6\) Although validation tests showed no substantial differences in the properties of the two sources, a dummy variable was included for thoroughness
### Table 4.1: Model Results, Legislative Driven News

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislative Driven News</td>
<td>-0.040</td>
<td>-0.032</td>
<td>-0.039</td>
</tr>
<tr>
<td>(0.052)</td>
<td>(0.052)</td>
<td>(0.052)</td>
<td></td>
</tr>
<tr>
<td>Event Driven News</td>
<td>0.997***</td>
<td>0.981***</td>
<td>1.065***</td>
</tr>
<tr>
<td>(0.076)</td>
<td>(0.080)</td>
<td>(0.080)</td>
<td></td>
</tr>
<tr>
<td>Lagged Event Driven News</td>
<td>0.105</td>
<td>0.064</td>
<td>0.079</td>
</tr>
<tr>
<td>(0.099)</td>
<td>(0.099)</td>
<td>(0.100)</td>
<td></td>
</tr>
<tr>
<td>Legislative Driven News National</td>
<td>0.906***</td>
<td>0.814***</td>
<td>0.889***</td>
</tr>
<tr>
<td>(0.251)</td>
<td>(0.254)</td>
<td>(0.252)</td>
<td></td>
</tr>
<tr>
<td>Event Driven News National</td>
<td>-0.596</td>
<td>-0.438</td>
<td>-0.589</td>
</tr>
<tr>
<td>(0.501)</td>
<td>(0.506)</td>
<td>(0.501)</td>
<td></td>
</tr>
<tr>
<td>Cook Index</td>
<td>-0.00001</td>
<td>-0.00001</td>
<td>-0.00002</td>
</tr>
<tr>
<td>(0.00003)</td>
<td>(0.00003)</td>
<td>(0.00003)</td>
<td></td>
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<tr>
<td>Session Length</td>
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<td>0.00001*</td>
<td>0.00001*</td>
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<tr>
<td>(0.00001)</td>
<td>(0.00001)</td>
<td>(0.00001)</td>
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</tr>
<tr>
<td>Salary</td>
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<td>-0.00000</td>
<td>0.00000</td>
</tr>
<tr>
<td>(0.00002)</td>
<td>(0.00002)</td>
<td>(0.00002)</td>
<td></td>
</tr>
<tr>
<td>Expenditures per Legislator</td>
<td>0.00000</td>
<td>0.00000</td>
<td>0.00000</td>
</tr>
<tr>
<td>(0.00000)</td>
<td>(0.00000)</td>
<td>(0.00000)</td>
<td></td>
</tr>
<tr>
<td>GOP Governor</td>
<td>-0.0002</td>
<td>-0.001*</td>
<td>-0.0003</td>
</tr>
<tr>
<td>(0.0005)</td>
<td>(0.0004)</td>
<td>(0.0005)</td>
<td></td>
</tr>
<tr>
<td>GOP Legislature</td>
<td>0.001</td>
<td>0.001*</td>
<td>0.001</td>
</tr>
<tr>
<td>(0.001)</td>
<td>(0.001)</td>
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</tr>
<tr>
<td>Dem. Legislature</td>
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<td>0.0003</td>
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<td>(0.001)</td>
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<tr>
<td>United</td>
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<td>-0.001</td>
<td>-0.001</td>
</tr>
<tr>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td></td>
</tr>
<tr>
<td>Event News x GOP Governor</td>
<td>-0.522***</td>
<td>-0.423**</td>
<td></td>
</tr>
<tr>
<td>(0.109)</td>
<td>(0.168)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lagged Event X GOP Governor</td>
<td>0.91</td>
<td>-0.154</td>
<td></td>
</tr>
<tr>
<td>(0.117)</td>
<td>(0.163)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Event News x GOP Legislature</td>
<td>-0.414***</td>
<td>-0.107</td>
<td></td>
</tr>
<tr>
<td>(0.110)</td>
<td>(0.167)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lagged Event News X GOP Legislature</td>
<td>0.208</td>
<td>0.304</td>
<td></td>
</tr>
<tr>
<td>(0.117)</td>
<td>(0.191)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.004</td>
<td>-0.004*</td>
<td>-0.003</td>
</tr>
<tr>
<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.002)</td>
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</table>

<table>
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<th>Observations</th>
<th>401</th>
<th>401</th>
<th>401</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²</td>
<td>0.810</td>
<td>0.805</td>
<td>0.811</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.780</td>
<td>0.774</td>
<td>0.780</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.003 (df = 346)</td>
<td>0.003 (df = 346)</td>
<td>0.003 (df = 344)</td>
</tr>
<tr>
<td>F Statistic</td>
<td>27.241*** (df = 54; 346)</td>
<td>26.416*** (df = 54; 346)</td>
<td>26.354*** (df = 56; 344)</td>
</tr>
</tbody>
</table>

*Note: p<0.1; **p<0.05; ***p<0.01
Results strongly suggest that event driven news has a positive effect on legislative driven news. Both the contemporaneous and lagged event driven news leads to an increase in legislative driven firearm news in states controlled by Democrats. A one percentage point increase of event driven coverage in year y leads to a 1.005 percentage point increase in legislative driven news in year y, an almost 1:1 increase, given that the governor and state legislature are controlled by Democrats. The effect in year y+1 is not statistically significant. The lagged dependent variable is not significant. The interactive effects show mixed support for the conditional effects. In specification 3, Republican legislatures suppress the effect of event driven news in year y by 0.423. Therefore, states with Republican legislators only see roughly 60% of the legislative driven news regarding firearms in the same year given a one percentage point increase in event driven firearm coverage compared to states with a Democratic governor. Republican versus Democratic governors do not show the same effect. There is no statistically significant moderation effect of Republican legislatures.

Figure 4.4 is a visual interpretation of the results from specification 3. The simulated results keep control variables at their means if the variable is continuous and at their median if the variable is categorical. The differences in the simulation are the values for Republican and Democratic control of the state legislature and Governor. The blue line is the effect of event driven news in year y on legislative driven news across the range of event driven news for states with unified Democratic control in year y. The red line is the same effect but for states with unified Republican control. The ribbons around the lines are 95% confidence intervals. When event driven news is close to zero, there is no discernible difference between the two simulations. However as event driven news begins to account for over 1.5% of total news in a given state, the expected effects statistically differ as Democratic states see more legislative action as a result in the increase in news.

When local event driven news is replaced with national event driven news, the above results are not replicated. Figure A.1 in appendix A.0.5 replicates the above simulation, but
Figure 4.4: Legislative Driven News Model Results
substitutes local event driven news with national event driven news. The resulting simulation is noisy and does not produce a slope that is statistically significantly different from zero for both blue and red states. This result suggests that lawmakers are not responding to national news, rather, they are responding to state level news.

The indication of action does not necessarily lead to policy change. News coverage of lawmaker action on gun related issues is not the same as a change in policy resulting from their actions. Moving to the final stage of the theory, the next models explores how legislative action leads to changes in a state’s firearm policies.

In order to better understand the outcomes of lawmaker effort, it is necessary to link these actions to actual policy outcomes. To do so, this analysis uses work from Siegel et al. (2014) that tracks the status of 132 gun provisions across all 50 states from year to year. Each provision is a restriction on gun ownership. A value of 1 indicates that the provision existed in that state at some point for the given year. This analysis tracks the changes over time (2001-2016). A positive value for a state from year y-1 to year y means the state adopted more restrictions. A negative value indicates the state loosened restrictions on access to firearms. The following models will use the change in firearm restriction provisions for each state. A positive number indicates that the state added restrictions, a negative number indicates that the state reduced the number of restrictions, and zero denotes that either no changes were made or that the number of provisions added equaled the number of provisions taken away.

The independent variables in this model are legislative action shown through legislative driven news and the political parties that control the levers of state government. The final stage of the theory predicts that policy will polarize during increased firearm issue salience in a given state. Legislative driven news in year y and in year y-1 is included in the model. These measures of activity are interacted with an indicator variable that marks which party controls the executive and legislative branches of the state. Here are the formal hypotheses:

\footnote{7 For both the contemporaneous and lagged interactions.}
H3: Legislator driven news will lead to polarized firearm policy outcomes. Legislative action salience will have a positive effect on firearm provisions in states controlled by Democrats. Legislative action salience will have a negative effect on firearm provisions in states controlled by Republicans.

Other variables are included to fully specify the model. Event driven news is also included to account for a direct effect that does not go through legislative news. National measures for event driven news and legislative driven news in year y are also included. Those variables are measured by taking the average across all 40 states for year y. These measures should account for variance produced by national pressures. Additionally, the Cook Index and a marker for united government are also included in the model. To account for temporal autocorrelation, the lagged dependent variable was included. This is the number of provisions changed in year y-1. Finally, to account for the cross sectional nature of the data, state fixed effects were included. Table 4.2 shows results for three different specifications.

There is overall support for the hypotheses. The specification in column three were used to create simulated outcomes based on the range of legislative gun news. The simulation was run twice. Once for a hypothetical state with a Democratic controlled legislature and governor and a second time for Republican control. Other variables were held at their mean if the variable was continuous and median if the variable was categorical. The below simulated effects in figure 4.5 show that legislative action coverage drives polarization in firearm provisions across the 40 states in the sample.

At low levels of lawmaker salience, there is little divergence in laws. Once coverage rises above roughly 2% of total news stories, policy begins to diverge. Looking back at the time series of gun salience in figure 4.3, salience greater than 2% occurs during mass shootings such as Sandy Hook and Pulse Nightclub. This is similar to the findings by Boydstun et al. (2014b). These large shooting events act as media storms that gather large amounts of attention, but inevitably fall back to equilibrium over time. However, these storms do

---

8 Results for the fixed effect parameters are not included in table 4.2
Table 4.2: Model Results, Firearm Provisions

<table>
<thead>
<tr>
<th></th>
<th>Provision Change</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Lagged Change</td>
<td>−0.148***</td>
<td>−0.166***</td>
<td>−0.164***</td>
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<tr>
<td></td>
<td>(0.053)</td>
<td>(0.053)</td>
<td>(0.053)</td>
</tr>
<tr>
<td>Legislation News</td>
<td>106.721***</td>
<td>150.765***</td>
<td>154.697***</td>
</tr>
<tr>
<td></td>
<td>(33.121)</td>
<td>(36.500)</td>
<td>(36.679)</td>
</tr>
<tr>
<td>Lagged Legislation News</td>
<td>70.830***</td>
<td>90.481***</td>
<td>91.148***</td>
</tr>
<tr>
<td></td>
<td>(26.353)</td>
<td>(27.965)</td>
<td>(28.279)</td>
</tr>
<tr>
<td>Event News</td>
<td>64.764</td>
<td>41.605</td>
<td>38.645</td>
</tr>
<tr>
<td></td>
<td>(41.174)</td>
<td>(41.258)</td>
<td>(41.347)</td>
</tr>
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<td>152.690</td>
<td>131.337</td>
<td>139.450</td>
</tr>
<tr>
<td></td>
<td>(137.850)</td>
<td>(135.490)</td>
<td>(135.718)</td>
</tr>
<tr>
<td>National Event News</td>
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<td>−263.381</td>
<td>−269.940</td>
</tr>
<tr>
<td></td>
<td>(270.959)</td>
<td>(266.496)</td>
<td>(266.732)</td>
</tr>
<tr>
<td>Cook Index</td>
<td>0.004</td>
<td>−0.003</td>
<td>−0.004</td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
<td>(0.018)</td>
<td>(0.018)</td>
</tr>
<tr>
<td>GOP Governor</td>
<td>−0.228</td>
<td>−0.610***</td>
<td>−0.447*</td>
</tr>
<tr>
<td></td>
<td>(0.267)</td>
<td>(0.233)</td>
<td>(0.270)</td>
</tr>
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<td>GOP State Legislature</td>
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</tr>
<tr>
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<td>(0.349)</td>
<td>(0.361)</td>
<td>(0.368)</td>
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<tr>
<td>Democratic State Legislature</td>
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<td>−0.020</td>
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<tr>
<td></td>
<td>(0.469)</td>
<td>(0.461)</td>
<td>(0.462)</td>
</tr>
<tr>
<td>United Government</td>
<td>−0.419</td>
<td>−0.492</td>
<td>−0.454</td>
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<td></td>
<td>(0.512)</td>
<td>(0.503)</td>
<td>(0.504)</td>
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<tr>
<td>Legislative News x GOP Governor</td>
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<td>−53.476</td>
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<td></td>
<td>(38.891)</td>
<td></td>
<td>(49.274)</td>
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<td>−11.877</td>
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<tr>
<td></td>
<td>(41.060)</td>
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<td>(54.995)</td>
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<td>Legislative News x GOP SL</td>
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<td></td>
<td>(38.019)</td>
<td></td>
<td>(49.008)</td>
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<td>−94.512**</td>
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<td></td>
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<tr>
<td></td>
<td>(0.711)</td>
<td>(0.699)</td>
<td>(0.700)</td>
</tr>
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</table>

Observations 401 401 401
R² 0.289 0.312 0.315
Adjusted R² 0.182 0.209 0.208
Residual Std. Error 1.580 (df = 348) 1.555 (df = 348) 1.555 (df = 346)
F Statistic 2.716*** (df = 52; 348) 3.032*** (df = 52; 348) 2.946*** (df = 54; 346)

Note: *p<0.1; **p<0.05; ***p<0.01
lead to policy change by acting as a catalyst for change, mostly in Democratic controlled states. The effect of legislative salience in Democratic states is positive, meaning those states adopt more firearm restrictions during high salience years. The Republican controlled states simulation has an effect that is not statistically significant from zero. This does not necessarily mean that salience has no effect on Republican states. Looking at figure 4.1, most states, especially conservative ones, began with very few restrictions on firearms. Since the measure cannot fall below zero, the best conservative lawmakers could do was prevent restrictions from becoming law. Therefore, the roughly zero effect of lawmaker salience in Republican states is likely more a result of intentional gridlock than it is of having no effect. 

Figure 4.5: Simulation

This simulation is repeated in figure A.2 in appendix A.0.5, substituting national legislative driven news for state legislative news. The result is different from figure 4.5. The

9 This model also works with elements of ideological diffusion included. Appendix A.0.6 contains models that include an ideological diffusion variable. Although the diffusion variables are significant across different measurements as described in that appendix, the effect of legislative driven news does not change.

10 Like in figure A.1, the national level variable is substituted for the state level variable in all four
simulation shown in figure A.2 shows that there is little difference in the effect of legislative
gun news on predicted policy changes between red and blue controlled states. This again
supports the claim that state level news is special.

4.6 Discussion and Conclusion

This chapter advances models of policy making by creating new theories of lawmaking
that consider how inaction by the federal government changes policy at the state level. I posit
that failure from national lawmakers to make substantive changes to a policy regarding a
salient issues allows states to form their own policy. States with the right political conditions
will change policy to better reflect their state’s preferences when the issue becomes salient. To
test this theory, I use the case of firearm control from 2001-2016. I find that exogenous issue
salience (resulting from unforeseen events) leads to lawmaker action. That action polarizes
firearm laws as states controlled by Democrats create policy that liberalizes firearm control
and states controlled by Republicans maintain conservative firearm laws in their state.

This chapter adds detail to existing models of policy change. The well established
models [Kingdon and Thurber, 1984; Baumgartner and Jones, 2010] mostly consider policy
cases that result in changes to federal policy. Less attention is paid to cases that result in no
changes to federal policy. Using firearm control as an issue, this chapter considers a policy
that failed at the national level. I find that states act as a release valve changing policy when
the national government will not. Existing theories of policy change and issue subsystems
should carefully consider the federal nature of American policy making. Issue definition is
an important part of the current models of policy change [Baumgartner and Jones, 2010;
Grossman, 2018]. This analysis shows that state news is special and more of a driver of
policy change at the state level compared to national news. However, state lawmaking is
less salient than national lawmaking. Are state lawmakers as affected by a changing public
perception of an issue as national lawmakers?
This chapter also touches on lawmaking in response to a crisis (McCombs 2018) or large focusing event (Birkland 1998). The state with the largest change in policy in the data used for this chapter was Connecticut in response to the Sandy Hook shootings. The government of Connecticut added 16 additional restriction provisions to their statutes as a result of the event. What this finding suggests is that states will not simply act as a pressure valve to prolonged national gridlock. Rather, the states will require some salient event to shift focus and spark lawmakers into action.

The models theorized and used in this chapter are not models of diffusion but the findings do provide implications for the field. Gilardi (2016) categorizes diffusion into three types: learning, emulating, and competition. The later two create homogeneous outcomes in the states. For example, with the adoption of state lotteries (Berry and Berry 1990, 2018), competition drives state to adopt the same policies. Learning however can cause divergent policy. As stated before, this chapter does not generalize to all issues. Rather, it best fits for issues that are polarizing and gridlocked at the national level. If states do learn in the way the diffusion literature describes, a salient event in one state may ripple out to change policy in ideologically similar states.

The upstream implications for national lawmakers are also interesting. Many of the proposed causes of gridlock (diverging ideological preferences (McCarty et al. 2016), to make the other party look bad (Lee 2009; Theriault 2013)) focus on re-election prospects for members. They theorize that the majority party will select issues that are good for the re-election odds of their party and bad for the re-election odds of the opposition party (Cox and McCubbins 2005). This chapter comments on another reason to pursue gridlock: allowing the issue to fall to the states. Assuming that state lawmakers hold similar ideological preferences to their nationally elected representatives, allowing an issue to fall to the states could be a way to allow constituents to live in an environment where policy matches their preferences. This practice is present in issues outside of firearm control. Many states have polarized abortion policy, an issue not changed by Congress in many decades.
There are many avenues for future research. Identifying what issues are left to the states, why, and what characteristics those issues share would better inform when classic models of policy change apply and when state policy making should be considered. A study that uses a more comprehensive list of issues would also explain the rate at which issues polarize and why. Is it simply the prolonged presence of salience for an issue or sudden shocks that spark polarization? Understanding what types of lawmaker actions lead to actual policy change and why would better complete the story of symbolic and meaningful responses to exogenous issue salience.
Chapter 5

Nobody Home: What Happens When Important Events Occur When State Legislatures are not in Session?

Unlike Congress, many state legislatures find themselves out of session as important policy related events unfold in their state or around the nation. These large focusing events require lawmaker response, even if state legislators are not officially in session. How do state legislators respond to these events based on when they occur? This analysis pairs newspaper analysis with bill sponsorship patterns in 10 state legislatures to show that, depending on the policy, events that occur during recess receive less attention from legislators than events that happen during session. The chapter uses two issues as a case study: firearms and extreme weather events.

5.1 Introduction

If a salient event happens and the state legislature is not in session, does it make a sound? Salient events do not wait for members of a legislature to be at full capacity. State legislatures in the United States have a wide variety of session lengths. Some, like Ohio, are constantly in session, while others, like Texas, take off full years. This variation reveals several lessons about both issue salience and lawmaking. Do lawmakers address all salient events that occur outside of session or do issues have certain properties that make them lasting? Going back to a previous chapter, do symbolic issues have a shorter lifespan than non-symbolic events? Do other aspects of legislative professionalism make for lawmakers
that are better able to respond to events that occur out of session?

By looking at the ability of state lawmakers to handle events both in and out of session, this chapter brings in elements of state politics, representation, and lawmaking capacity. Further, it is the first to empirically evaluate one of the pillars of legislative professionalism: session length. Does a longer session length create a “better” legislature? Together, this chapter incorporates many themes represented in this dissertation such as issue salience, bill sponsorship, lawmaking in the states and the interaction of institutional design with issue salience. Additionally, it is one of the few analyses to investigate the mechanics of legislative professionalism and how it changes representative outcomes.

This chapter addresses all of these areas of research using case studies of two issues across 11 states and 7 years using bill sponsorship patterns. The chapter combines two sources of unique data to do so. The first, a subset of the front page news stories collected to measure state level issue salience collected from Lexis Nexis. The second, data on state level bills scraped from Legiscan, a service that tracks every bill in state legislatures dating back to 2009. The bill data is one of the broadest efforts to quantify bill sponsorship at the state level. It is a start to creating a database of bills similar to the national level Congressional Bills Project [Adler and Wilkerson, 2006]. Together, they are combined to measure when salient events occur, if those events occur within a state’s legislative session, and the response by state lawmakers in the form of bill sponsorship.

Here is the layout of the chapter. First, session length (the main causal variable of interest) and seminal works in legislative professionalism are introduced as well as the space where this chapter improves existing knowledge of how session length affects state lawmaking. Then, a relatively new dependent variable, bill introductions at the state legislative level is presented and compared to national sponsorship trends. Then, theory as to why salience during legislative out of session periods should motivate bill sponsorship differently depending on the nature of the issue is provided. After, the two issues, firearms and extreme weather are introduced. In the empirical sections, the dependent variable, bill introductions across
10 states, newspaper coverage in those states, and other control variables are explained and combined into models of bill sponsorship. Finally, results are explained and synthesized in a conclusion section that combines aspects from all three empirical chapters.

5.2 Legislative Professionalism and Session Length

Much of the legislative professionalism literature stems from Squire (2007). Professionalism in the state legislature context is the study of how much time and resources are devoted to a given state’s legislature. This work has spawned various measures (Squire, 2007; Bowen and Greene, 2014) that capture the resources spent on a legislature. In his seminal work, Squire describes the three pillars of legislative professionalism and which his measure is built upon: salary and benefits, staff and resources, and time demands of service. That last pillar, is largely built around session length. The theory is that the longer a legislature is in session, the more professional the legislators will be. First, the longer a legislator is required to be in session, the less time is left for that person to spend time in other professions (Squire, 2007). Second, there is more time to learn how to legislate e.g. write and introduce bills (Squire, 2007). Third, there is evidence that legislatures with longer sessions have relatively more power compared to the state’s governor (Ferguson, 2003; Kousser and Phillips, 2009, 2012). With more time to bargain, state legislatures that have long sessions win more concessions in budget battles and disagreement over other policy areas (Kousser and Phillips, 2009, 2012). Where legislative session length has been less studied are in areas of representation.

Only small amounts of research exists on the implications of legislative session length and representative outcomes. Much of the research on representation occurs at the national level largely due to the availability of rich data (Clinton, 2006; Weissberg, 1978; Ansolabehere et al., 2001). However, there is a real reason to further the study or representation at the state level due to the institutional variations in state legislatures and the lower informational environments that they operate in (Langehennig et al., 2019). One, Congress is in session year round and has access to a much greater wealth of resources compared to state legis-
State legislatures deal with many crucial policy areas, more now that the Federal government remains locked on contentious and salient issues. How do lawmakers from part-time institutions work on issues that arise when they are out of office? More, states operate in low information environments, especially compared to Congress. Following the Sandy Hook shootings, the efforts from Dianne Feinstein (D-CA) to institute background checks and other firearm access restrictions gained large amounts of national attention. In the end, her efforts would not advance past her own chamber of Congress. However, in many states, firearm access restrictions were either added or lifted in the wake of Sandy Hook. These efforts, despite affecting millions gained far less media attention.

Like their Congressional counterparts, state legislators must represent their constituents in many dimensions (Harden, 2015). Legislators must be attuned to constituent concerns in floor votes, speeches, constituency work, and crafting legislation. Many of the measurement debates in representation are centered around how to determine the ideological closeness of constituents and lawmaker in these various dimensions (Miller and Stokes, 1963). However, more recent work focuses on other aspects beyond ideological dimension. One is the speed in which the lawmaking process is able to handle changes in public opinion. At the national level, the three primary institutions of lawmaking (The House, The Senate, and the president) all respond to “changes to the thermostat” at varying rates (Erikson et al., 2002). At the state level, we see various factors changing the rate of response to changes in public opinion (Lax and Phillips, 2009a, 2012). In their 2012 piece, Lax and Phillips find that professionalism among other factors is largely responsible for outcomes where laws do not reflect public opinion. In their work, they use Squire’s measure of legislative professionalism. This chapter further investigates when session length, a major component of professionalism, will hinder representative outcomes.

Literature on representation considers many factors when looking at various forms of representation. The race or gender of the lawmaker (Gay, 2002), the composition and ideological leanings of the entire lawmaking body (Weissberg, 1978), and even how the law-
making body is apportioned (Griffin, 2006) are all examples of factors that can influence the measured or perceived quality of representation. However, the actual presence of lawmaking has not been considered to this point. What happens if lawmakers are not able to function as lawmakers for long periods of time? Even if regular business is scheduled for in-session periods, events that demand policy maker attention can occur when lawmakers are not meeting or crafting legislation. Do lawmakers remember and take action in the next session or does the event fade from their attention? The next section explains why some events will fade while others remain.

5.3 Issue Type and Lawmaker Reaction

Why do lawmakers sponsor bills? An answer from the classical view of policy making would say that lawmakers sponsor bills in hopes they become law and change policy. However, we know that there are many other factors that go into bill sponsorship. Bills are a way to signal to both constituents and other lawmakers (Woon, 2008, 2009), and also a costly signal that is a way to take a position on issues that do not come up during roll call voting (Rocca and Sanchez, 2008; Rocca and Gordon, 2010). How then can states with non-full term legislatures help us better understand bill sponsorship?

Expanded upon in different sections of this dissertation, the reason why lawmakers craft and sponsor legislation can be broken into two separate factors. The first, tangible efforts to change laws. In the classic rationalist school method of thinking, this is an attempt to move the status quo on an issue or series of issues (Cox and McCubbins, 2005; Krehbiel, 2010). The second, efforts to signal that the lawmaker is ideologically aligned with constituents or other lawmakers (Woon, 2008, 2009). Therefore, the utility from sponsoring legislation is either to change policy or signal. The chapter on sponsorship in Congress touched on this dynamic. For symbolic issues, the signaling aspect of sponsorship seemed much more important. For resource issues, the tangible benefits of sponsoring legislation seemed to weigh more importantly.
This chapter combines lessons from two other chapters. The first are lessons from the aforementioned Congress chapter. By analyzing sponsorship patterns in legislatures that meet irregularly, it is possible to track knee jerk reactions to policy events that happened while legislators were meeting and when they were not. From the gun policy across the states chapter, this analysis builds upon lessons on how gun policy is changed based on when shooting events occur.

5.4 Theory

One of the objectives from this chapter is to learn what issues remain salient to lawmakers after public attention has moved on and what issues no longer interest lawmakers if the public no longer is paying attention. I argue that contentious symbolic issues are ephemeral in the minds of lawmakers while issues that are not wedge issues \( \text{[Hillygus and Shields, 2014]} \) between parties are addressed by lawmakers long after a focusing event. This argument and its evaluation ties together many areas of salience that have appeared in this dissertation. First, the behavior of an issue’s salience should change based on the nature of the issue. As highlighted in the first empirical chapter, symbolic issues create action but seldom create results. The theory in this chapter further supports the ephemeral nature of symbolic issue salience by arguing that spikes in interest on symbolic issues do not last if the spikes occur during out-session periods.

As shown by Lee (2009); Theriault (2013), parties consistently find issues that make the opposite party look bad by forcing marginal members to cast votes that pit their constituents against their party or pick issues to harm the opposite party’s executive. Some of these issues include abortion, gay marriage, and firearms. These issues do not relate to the core functions of government. Rather, if the parties remained deadlocked on this type of symbolic issue, major government programs continue to function. At times, lawmakers will threaten to close government down in order force change in a wedge issue such as when Donald Trump threatened to close down the government over his boarder wall at the end of
2018 or when Pennsylvania’s government shutdown in 2007 over an energy tax proposed by Democratic governor Ed Randell and opposed by the Republican Senate. These issues serve as ways for lawmakers to put the opposite party in vulnerable positions and bolsters their own standing with constituents.

Why then should these mostly symbolic wedge issues lose appeal if a focusing event occurs out of session? As stated earlier in the theoretical chapter, salience requires an audience. Lawmakers will have the largest possible audience when a salient event occurs in a wedge issue area. A school shooting should provide the greatest chance to showcase a bill that advocates arming teachers, and a bill that advocates for LGBT rights will gain the most attention after a baker refuses services to a same sex couple. Since bills are costly (Rocca and Sanchez [2008] Rocca and Gordon [2010]), capitalizing on peak issue attention for lawmakers should be a concern.

For non-wedge issues, those that have long lasting ramifications if government remains deadlocked, should remain salient to lawmakers long after the issue fades from public attention. These issues include funding government programs, budget issues, and disaster relief. Although there can be disagreement over how to resolve these issues, failure to reach a solution would result in harm to many people. Failure to pass a budget leaves many crucial government programs non-functioning. Failure to address the damages wrought by a major storm leave many homeless. The salience to lawmakers should remain even after the attention of the non-effected has moved on.

5.5 Firearm and Weather Bills

The two cases used in this chapter are firearms and extreme weather issues. This section demonstrates what these issues have in common and what they do not. In doing so, this section argues that firearm and weather issues serve as a good comparison to see how lawmakers react to different types of issues depending on if they are in session or out of session.
What these two issues share is the unpredictable nature of their salience. For firearm issues, public interest typically piques immediately after a mass shooting. The FBI defines a mass shooting as an event where four or more people are indiscriminately selected, shot, and killed. Almost by definition, these events are unpredictable. Despite efforts to prevent these incidents, there is little that can be done to know when or where one will occur. Similar to firearm issues, extreme weather events are also largely unpredictable. This chapter specifically uses non-geological events such as hurricanes and tornadoes. Although it is possible to know in advance of an extreme weather event through meteorology, it is not possible to avoid or completely prevent the damage a dangerous storm inflicts. As both issues are unpredictable, they fall under issues that are considered “focusing events” (Birkland, 1997), an event that is unpredictable and often gathers wide media attention during the aftermath. These events that lead to increased media attention are characterised by Boydstun et al. (2014b) as “media storms.” Coverage from a media storm typically leaves the public’s attention as quickly as it entered. Both firearm and weather events typically lead to media storms.

Although similar in their unpredictability and news cycles, there are important differences in the nature of the two issues used in this chapter. First is the duty of government in responding to these issues. In the event of a mass shooting, lawmakers often feel the need to prevent future mass shooting events but there is little for lawmakers to do to fix immediate damages. No legislation can bring back the lives of those lost during a mass shooting. In the event of weather related incidents, lawmakers face the dual task of crafting measures to reduce the impact of similar future weather events and take care of the immediate aftermath of a major storm. Unlike a school shooting, state lawmakers must often appropriate funds to assist private citizens in rebuilding their homes and businesses as well as rebuild state government infrastructure that was damaged as a result of the storm.

Another large difference in how lawmakers respond to both issues is in the polarity of response across both parties. The Democratic response to mass shootings include solutions
that largely limit access to firearms. For example, Democratic lawmakers will offer legislation that requires more stringent background checks, creates gun free zones, or restricts certain types of firearms. Republican legislative responses are diametrically opposed. Largely, they intend to expand or protect access to firearms hoping that a greater armed citizenry will deter or prevent future mass shootings. These legislative solutions include arming teachers, reducing age restrictions, or lowering the standard needed to demonstrate self defense. The immediate response to weather related events is quite different. Both parties often agree that the affected area should be repaired. This task is almost always accomplished by setting up a way for affected citizens to claim money from government insurance programs. Although these programs are slowly beginning to polarize lawmakers, few lawmakers would oppose the rebuilding of an area affected by a severe weather event.

Taking the elements of these issues with what is known about bill sponsorship, firearm salience should produce a response only when there is a focusing event during a session and extreme weather focusing events should produce responses no matter when they occur. Since the window to capturing utility from sponsoring legislation related to firearm issues occurs in small window, lawmakers will ignore events that happen out of a legislative session. Contrarily, since the demand on lawmakers to respond to extreme weather events is long lasting, they should respond to weather events that occur both in and out of session.

5.5.1 Bill Introduction on Firearms and Weather

Lawmaking in the states is a varied process. Out of the 50 states, no two processes are identical. Event the act of introducing bills can vary across states. A majority of states mirror Congress, where lawmakers are free to introduce an unlimited number of bills. However, a non-trivial minority of chambers limit the number of bills a single lawmaker may write and introduce. As of 2016, 24 of the 99 state legislative chambers limit the number of introductions by a single lawmaker. For example, the Florida House caps the number of bills introduced at 6 for a regular session. Others limit per a legislator’s term. In this
analysis, Colorado, Florida, and Virginia all limit the number of introductions. Later, in the measurement and modeling sections, more detail is provided to how this analysis made for like comparisons across states.\footnote{Briefly, fixed effects are used across states. Also, when the count dependent variable was substituted with ratios, OLS models show similar results}

Similar to the variation in limits on bill introduction, states have a wide array of session lengths. That variation in session length is a key part of this analysis. Some of the more highly professionalized legislatures like Ohio are constantly in session and meet on a monthly basis. Others, like Texas, meet biennially. These different gaps create interesting variation in the ability of lawmakers to respond to salient events.

Data on bill introductions was obtained from Legiscan, which began tracking bills and bill metadata\footnote{metadata include the name of the sponsor, the sponsor’s party affiliation, the bill’s legislative outcome, and for some states the committee the bill was assigned to} starting around 2009 (depending on the state). Their data include the title of the bill, a brief description of the bill, the legislator who introduced the bill, the party of the legislator, and how far the bill advanced through the state’s legislative process. Combined, over 250,000 bills were used in this analysis from 11 states over 7 years.

The distribution of bills by month across both issues are shown in figure 5.1. This sample of 11 reflects the activity of most state legislatures across the country. They are often active in the beginning of the year and inactive as the year progresses. Some of the bills do occur out of regular session. Of the 41 states without a full time legislature, all have the ability to call the legislature in for special sessions. Laws regarding who may call the special sessions vary by state but it is usually the state legislature or governor. These sessions are meant to address specific issues. For example, in 2012, Colorado held a special session to consider civil unions. None of the special sessions in this data set are related to weather events or firearms.

The bill distribution for both issues, firearms and extreme weather, are close to equal across both parties. For firearms, 1,147 bills were introduced by Democrats and 1,562 were
introduced by Republicans. For weather, 389 bills were introduced by Republicans and 365 were introduced by Democrats. This distribution provides confidence that results are not driven by how one party reacts to salient events.
5.6 Firearm and Weather News

As expanded in several other sections of this dissertation, measuring issue salience at the state level is complicated. Many prior measures use conditions such as economic production, crime rates, the prevalence of agriculture and other various measures that indirectly capture issue salience as a measure. This dissertation uses a direct measure: the use of major state newspapers. This chapter uses a subset of the whole data, using 11 states that paired with Legiscan data on state legislative bills.3

The use of state newspaper articles, especially for the purpose of finding articles related specific state issues comes with an issue of endogeniety. As Lax and Phillips (2012) points out, articles may mention an issue because of the actions of a state legislature. The dependent variable in this analysis, the introduction of bills in a state legislature, can also generate articles. A bill that curbs access to firearms or a major storm rebuilding bill are often enough to warrant a front page article in a state newspaper. Like in other sections of this dissertation, a keyword filter was used to eliminate articles that mentioned lawmaking specifically. Fortunately, Lexis Nexis provides an array of key words in association with each article. One of the key word tags is “state legislature”. Using this tag along with the “governor” tag allowed for the measurement of purely exogenous news.4 What remains are articles that mention firearms and weather related events that do not mention lawmaking.

Finding articles that pertain to each issue was also done with a dictionary. The exact key words can be found in appendix A.0.8. Articles tagged as either firearm related or weather related were passed along to the aforementioned legislative keyword filter. Figure 5.2 shows the trends and distribution of firearm and weather related news from 2010-2016 on a monthly trend.

For both issues, news that does not contain legislative key words is typically more

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3 A list of these states and the corresponding newspapers can be found in appendix A.0.7

4 Human efforts to find mentions of a state legislature in exogenous tagged articles resulted in very few flags
Figure 5.2: Aggregate Time Series of Both Cases
prevalent than news that does contain legislative key words. Both issues are characterized by large spikes in attention and noisy trends that are difficult to predict using properties of the series. As stated in the issues section, this chapter wanted to focus on issues that were relatively unpredictable and largely driven by exogenous shocks to the issue subsystem. In the case of shootings and weather events, these series appear to reflect those traits based on the variance shown in figure 5.2.

5.7 Combining Newspaper, Session Length, and Bills

Figures 5.3 and 5.4 capture the aim of this analysis: to study the relationship between salient events, state legislative sessions, and bill sponsorship. Figure 5.3 shows the prevalence of firearm and weather articles in New York (as shown by the local section of the New York Times). Months occurring in the shaded blue regions denote that the New York State Legislature was in session at that time. Months occurring in the shaded grey regions denote times when the legislature was not in session. Figure 5.4 shows the same trends, but for the Washington State Legislature terms and the Spokesman Review. According to the Squire Index, New York has the second most professionalized legislature and Washington has the 18th most professionalized legislature. The main difference between the two legislatures is the time that they remain in session. New York typically has 6 month terms while Washington’s terms often last 3 months. As seen in both issues, the Washington legislature was not in session for many important events that occurred in both issue areas. Although New York’s legislature misses roughly half the year, they were in session for many more spikes in both series. The analysis that comes will test if these spikes occurring either in or out of session matter and if those responses differ by issue type.

5 The bars do not show special sessions as they were only included if the special session addressed firearms or weather related issues.

6 Second to California
Figure 5.3: New York
Figure 5.4: Washington

(a) Firearms

(b) Weather
These state newspaper reports of events regarding firearms and weather do not occur in a vacuum. Some states may report what happens in neighboring states. For example, the Florida Times Union may report what occurs in Georgia if the event is significant enough to warrant large amounts of attention. Some events, like the Sandy Hook shootings or Hurricane Sandy, received attention from nearly all state paper front page coverage.

Figure 5.5 shows the correlations over time across the 10 states in the analysis. These are the correlations of the 7 year averages for both firearm and weather news coverage. Overall, firearm coverage appears to be more positively correlated than weather coverage. This also makes sense as salient firearm events like a school shooting are likely to cross state boundaries. However, relatively salient weather events will receive coverage in their home state but likely will not warrant front page coverage in other states. Weather coverage appears to be correlated by geography. For example, Texas and Oklahoma coverage is correlated at 0.61 but Texas and Virginia are correlated at -0.97.

5.8 Data

The unit of analysis is state-legislative term. Each issue area was modeled separately. There are three major components to the data: the dependent variable (a count of bills introduced for each topic), the in-session salience, and the out of session salience. Since Legiscan does not have full access to every bill from every state, only 11 states were used from the SND making the data used in this chapter a subset of the full SND data set.

5.8.1 Dependent Variable: Bill Introduction Counts

In the following models, bill introductions counted by term serve as the dependent variable. For each issue, bills associated with that issue were found using keyword searches. After each bill containing a firearm or weather keyword was identified, a human coder went through each bill to determine if each bill indeed was about the two topics. For example,  

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7 These keywords may be found in appendix A.0.8
Figure 5.5: Correlogram Across Years for Both Cases
articles containing idioms like “shooting from the hip” would trigger the keyword search to identify the article as about firearms. Articles not containing policy content related to firearms or weather were removed from the count. A tally for each state-legislative term was produced after the final counts were determined.

5.8.2 In-Session Salience

In-session salience was relatively easy to determine. In-session salience was determined as the amount of firearm and weather coverage while a legislature was officially in session according to the state legislative websites. A state was considered in session if at least one of the legislative chambers was in session. Again, no special sessions addressed firearms or weather incidents. The actual measure of salience was a ratio for each state-legislative session. The ratio was the number of articles about either topic over the total number of articles for that period. So for example, in 2016, Colorado’s legislature met from January till the end of March. During this time, The Denver Post printed 22 front page articles mentioning firearms and 3 mentioning severe weather. Over the same time span, 196 total front page articles appear in the data. This created in-session salience measures of 0.112 for firearm salience (22/196) and 0.015 for weather salience (3/196).

5.8.3 Out of Session Salience

Out of session salience requires several more steps to calculate. The process remained highly similar to in-session salience. It used the same process of weeding out false positives and creating ratios. Where it differs is determining the time period in which draw from. Since the unit of analysis is state-legislative session and not state-year, the out of session variable may span multiple years. The measure is constructed using all of the previous time between the prior session and the current session. For example, in Colorado, the legislative term typically begins in the first week of the year and ends near the later days in March. This typically means that the out of session salience measures are used using the other nine
months of the previous year. So in the case of Colorado, the 2016 term’s out of session measure would be calculated using April through December of 2015. Not all states begin in early January. Some, like Oklahoma begin in February and continue till the end of June. In the case of Oklahoma, the 2016 out of session score would be calculated using July of 2015 through January of 2016. The rest of the process remains the same with the count of relevant firearm and weather articles placed in the numerator over the total number of articles occurring the the respective state newspaper over that time.

5.8.4 Hypotheses

As stated in the theoretical section of this chapter. Spikes in issue salience for symbolic issues should create an increase in bill sponsorship while it happens in-session. This allows for members to capitalize on the immediate incident and show constituents that she or he is attuned to citizen preferences. In this analysis, this in-session connection should occur in the firearm bills models but not the weather bills. Out of session salience should not have a statistical effect in these models for symbolic issues as the benefit has long passed.

For issues that are not symbolic, like weather, both in session salience and out of session salience should matter as issues like weather create both a connection between lawmaker and constituents as well as an actual policy need.

Firearm

*In-session salience will have a positive and significant effect on the count of sponsored bills.*

*Out of session salience will not have a significant effect on the count of sponsored bills.*

Weather

*Both in-session salience and out of session salience will have a positive and significant effect on the count of sponsored bills.*
5.8.5 Other Variables

To assure for proper model specification, several other variables and modeling techniques are included. First, a national measure of salience was included. It is possible for states to react to news in other states. Georgia lawmakers may have witnessed what happened in the Pulse Nightclub shooting and crafted legislation in response. The national measure for both policy areas was an average specific to the time period that each state legislature was in session. For example, if a state was in session between January and June of 2016, the national average of salience across the other 10 states was taken and averaged over those 6 months.

The state’s legislative professionalism was also included in the models using Squire’s measure. Although the Squire measure includes session length, it includes many other factors such as legislator pay, staff pay, and other resources directed to the state legislature. In addition to the professionalism of the legislature, the Berry et al. (1998) citizen and government ideology scores are also included. These should pick up variance in bill sponsorship related to how a citizenry and government ideology deals with firearms and weather. Lastly, the total bills introduced in a given session was included. This is not a count of firearm or weather bills (the dependent variables) but rather is a count of the total bills introduced on any and all topics. This overall count variable captures the overall differences of productivity within a legislature over time.

Several other parameters were included to account for variance across states and over time. A state fixed effects variable was included to assure that other covariates were capturing differences within a state and not across them. The difference in dependent variable values varied significantly across the panel making the ten degrees of freedom used on fixed effects necessary. Also, to account for relations across time, a lagged dependent variable value was also included for one time period resulting in a loss of the first year of observations (2010). Finally, since the dependent variable was a count of bills, a negative binomial model
was used. Likelihood ratio tests suggested that the negative binomial was a better fit than
the Poisson as the dispersion parameter was greater than 1. As shown in appendix A.0.9,
these models produce excellent model fit despite the relatively small n used to estimate the
models.

5.9 Model Results

Overall, there is strong support for the firearm hypotheses and moderate support for the
weather hypotheses, however there may extenuating circumstances that affect the weather
hypothesis that will be discussed later. The models provide strong fits as can be seen in the
appendix A.0.9. When run using OLS, the $R^2$ are over 0.90.

In the negative binomial model that shows outcomes for predictors of firearm bills, the in
session salience is a positive and statistically significant ($p < 0.05$) predictor of the
count of firearm related bills while out of session salience is not statistically significant at the
$p < 0.05$ level. These results align with what was predicted in the firearm hypothesis. Visual
interpretations of results for this model are shown in appendix A.0.10. Simulations were run
using the state of Colorado as the state chosen for interpretation. Results show that when
firearm salience is at the low end (just above 0% of articles), the expected number of firearm
bills in Colorado is around 5. When firearm salience is near its maximum for Colorado,
the number of expected firearm bills increases to roughly 13. Using the same process for
simulating effects for out of session salience yields results that are not statistically significant.

In the case of weather related events, neither in session nor out of session salience is
statistically significant at the $p < 0.05$ level. However, out of session salience is statistically
significant at the $p < 0.1$ level. The results for out of session salience simulation for the

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8 When run using OLS instead of count models, the $R^2$ of the models are greater than 0.90
9 Shown in column one of table 5.1
10 Since the model uses fixed effects, simulations are run using one state as a case. Therefore the x axis is
restricted for the natural range of salience for that state. Values for other variables used the mean for each
variable based on the mean in Colorado. For example, Colorado averaged 700 bills per legislative session,
therefore 700 was entered as the value for that variable during the simulation.
Table 5.1: Model Results, Bill Counts

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Firearm Bills (1)</th>
<th>Weather Bills (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged Bill Count</td>
<td>$-0.003$ (0.004)</td>
<td>$0.011$ (0.014)</td>
</tr>
<tr>
<td>In Session Salience</td>
<td>$4.538^{**}$ (1.933)</td>
<td>$1.031$ (11.679)</td>
</tr>
<tr>
<td>Out Session Salience</td>
<td>$-3.542^*$ (1.830)</td>
<td>$22.420^*$ (12.454)</td>
</tr>
<tr>
<td>National Salience</td>
<td>$8.375$ (6.620)</td>
<td>$90.347$ (93.614)</td>
</tr>
<tr>
<td>Squire</td>
<td>$0.958^{**}$ (0.377)</td>
<td>$0.885$ (0.809)</td>
</tr>
<tr>
<td>Citizen Ideology</td>
<td>$0.040^{***}$ (0.014)</td>
<td>$-0.033$ (0.028)</td>
</tr>
<tr>
<td>Government Ideology</td>
<td>$0.022^*$ (0.012)</td>
<td>$0.009$ (0.028)</td>
</tr>
<tr>
<td>Total Bills in Session</td>
<td>$0.0001^*$ (0.0001)</td>
<td>$0.0002^{***}$ (0.0001)</td>
</tr>
<tr>
<td>Constant</td>
<td>$-1.845^*$ (0.966)</td>
<td>$-0.330$ (2.229)</td>
</tr>
</tbody>
</table>

Observations: 60 60
Log Likelihood: $-192.093$ $-147.270$
$\theta$: $38.486^{**}$ (15.621) $6.329^{***}$ (2.243)
Akaike Inf. Crit.: 422.187 332.540

*Note:* $p<0.1$; **$p<0.05$; ***$p<0.01$

*Note:* Models include state fixed effects
weather related bills models show that on the low end, Colorado expects just over 1 weather related bill, but when weather salience is high that prediction is just below 3. In session salience appears to have no affect on the number of bills predicted. One of the reasons for this finding may be the nature of weather related events. Much of the weather related news in this analysis is driven by hurricanes, which typically occur during the late summer and fall. Nearly every state legislature is not in session during peak hurricane season. Looking at the data, the first six months of the year contained 111 more weather related articles compared to the last six months of the year over the seven year span. This difference was out of 2,275 weather event related articles found total.

The effects of other variables in the model mostly conform to logic. Neither lag was statistically significant, nor was national salience. These findings are revealing in how these two issues operate. The lack of a statistically significant lag suggests that lawmakers do not introduce firearm or weather bills based on prior events. More, lawmakers appear to be unaffected by events that occur outside their state. The non statistical significance for national salience suggests that for state lawmakers, politics are local. In the firearm model, more professionalized and liberal legislators and more liberal citizens lead to more firearm bills. Both models see more firearm and weather bills when the legislatures are more prolific overall.

5.10 Discussion and Conclusion

This chapter covered how issue salience affected state bill sponsorship during in-session and out-session periods across 11 states. Using variance in state legislative session lengths, the chapter is one of the first attempts to analyze the lasting (or ephemeral) nature of issue salience. The theory, that non-symbolic issues should be long lasting and symbolic issues are not as long lasting was partially supported. The analysis combined front page news stories from major state newspapers and sponsorship habits across the sample of 11 states. The two issues chosen to test the relationship between issue salience and bill sponsorship at
the state level were firearms (symbolic) and extreme weather events (non-symbolic). Both are typically exogenous events that are difficult for lawmakers to predict. Results found that firearm salience increased firearm bill sponsorship only during in-session periods but not during out session. For extreme weather events, there was some evidence ($p < 0.10$) of a positive relationship during out-session periods but there was no such evidence during in-session periods.

One of the findings in both models of bill sponsorship was that local salience was a more impactful explanatory variable that national salience. The measure of firearm and weather national salience was not statistically significant in either model. Much of what the discipline knows about political knowledge comes from studies that use questions based on national politics to measure respondent knowledge [Carpini and Keeter 1993, Campbell and Niemi 2016, Miller et al. 2016]. The reliance on national politics based measures leaves a gap in the literature on how state knowledge is special. In addition to a few other works [Jaeger et al. 2017, Langhehnig et al. 2019], the national salience versus state salience findings in this chapter suggest that there is a special connection between citizens and their state representatives that cannot be explained by attention to national issues. Further work that splits measures of issue salience into state and national issues could yield interesting results that uncover more of why state political knowledge is special and how it changes the policy making process.

Like political knowledge, most of the findings on bill sponsorship are driven by studies that use national lawmaking as their area of study [Rocca and Sanchez 2008, Woon 2008, 2009, Rocca and Gordon 2010]. There are reasons to believe that some of the mechanisms discussed in those studies may not apply to the states. For example, one of the benefits of sponsorship at the Congressional level is to signal to constituents [Woon 2009]. State politics does not have the same level of media exposure, does this outward facing dynamic of sponsorship still exist in state legislatures or is the purpose of these bills totally inward [Woon 2009]? Findings from this chapter suggest that even state lawmakers are respond-
ing to news. Since that is the case, more work should be done to discover why. Are state lawmakers trying to signal to their fellow partisans where they stand on salient issues or are they crafting legislation that they hope their constituents will discover?

Much of the reason for the focus on national level studies are because of data limitations. National lawmakers are better documented and the text of legislation, surrounding legislation information and bill outcome data are more easibly attainable compared to state legislatures. However, the gap is closing. With websites like Legiscan, an initiative to create an Adler and Wilkerson (2006) like Bills Project for the states is not unthinkable. With more state data becoming available each year, the ability for those that study lawmaking to leverage state variation in institutions should also increase. The increase in state data should spur more research that questions the outcomes found using national data that stem from national rules that govern lawmaking.

Perhaps the most important contribution of this chapter is the theory about the decay of issue salience as a function of the nature of the issue. Time series has long been a method used to study various social phenomena in political science. For example, Stimson et al. (1995) find that the delay between changes in public opinion and the liberal/conservativeness of policy produced by national lawmaking institutions is predicted by the length of terms in each institution. How long issue salience lasts is an important question not yet addressed in political science research. This chapter lays some of the groundwork needed to further address this issue.

First, the dissertation overall is careful to specify what type of issue is being studied or discussed. Symbolic issues should have a shorter shelf life than non-symbolic issues. Even if spikes in symbolic salience occur frequently, their effect on lawmaking may be negligible if each spike’s impact is relatively short lasting. Take one of the issues used in this chapter: firearms. Keen public interest in firearms and firearm policy spikes proceeding a mass shoot-

---

11 e.g. the party of the bill sponsor
12 See Enns and Koch (2015) for a state level example
ing, however, as explained in a previous chapter, the impact on laws even at the state level can be minimal. Why? This chapter helps fill in that gap by explaining that the life cycle of a mass shooting media storm (Boydston et al., 2014b) may be shorter lived than the life cycle of an issue that results in policy change after a sharp increase in media attention. Second, simply measuring media attention and then the decay of a spike may not be enough to make any meaningful political conclusions. Just because the media heavily covers an issue does not mean that it has an impact on lawmaking behavior. For that media spike to be seen in lawmaking, lawmakers must craft and pass legislation for that spike to be truly meaningful. Therefore pairing media data with lawmaking data takes breakthroughs in political media coverage to the next logical step.

This chapter combines state lawmaking, issue salience, and media coverage. It suggests that symbolic issues will receive more attention from lawmakers if a focusing event occurs during an in-session period. Should states want more representative laws, especially on divisive issues like firearms, they should adopt full time legislators.
Chapter 6

Conclusion

This chapter concludes the dissertation by summarizing previous chapters and discussing the findings as well as considering future research based on this dissertation. First I summarize the main argument and findings from each chapter. Then I move to how various measurements of salience improve existing models of lawmaking. Finally, I consider how this dissertation comments on the current polarized nature of politics and what the findings mean for issue representation in Congress.

6.1 Summary

Chapter one outlines the purpose of the dissertation and how it fits in existing work on issue salience and lawmaking. The central question driving this project is what issues become the focus of lawmakers and why? As argued by ?, there are an infinite number of issues that could be debated by lawmakers but only a few form the lines of societal political cleavages. The study of public opinion and attitudes have largely outpaced the study of issue salience and agendas in lawmaking. I argue that simply knowing preferences makes for an incomplete picture. To understand the policy making process, we must know citizen and lawmaker preferences as well as the emphasis and attention they give each issue.

In order to better understand how salience works in the lawmaking process, I argue that we need a more nuanced understanding of salience. In other words, in order to make reasonable expectations for how issue salience will affect the policy making process, we must
understand what creates the salience, what are the special nuances of the issue generating the salience, and who is the receiver of the signal? Without understanding these differences, researchers working on issue salience will continue to conduct research that fails to build on itself since findings will fluctuate with different contexts. In order to understand issue salience, we must understand the various contexts in which it operates.

In chapter two, I demonstrate the various capabilities of the State Newspaper Data used throughout this project. These data come from front page articles from 40 major state newspapers between 2001 and 2016. Using Lexis Nexis and ProQuest News and Newspapers, I was able to compile a data set of over 580,000 articles that measure salience state issues over time. This project is an extension of other projects that measure issue salience such as [Boydston (2008)]. Most newspaper data used to measure salience can only be used at the national level. My data improve upon existing state measures of issue salience, which are almost always a collection of state conditions (e.g. [Woon (2008)]). These data are comparable across issues and time.

These data are essential for advancing questions of lawmaking regarding issue salience. They allow for more general studies of lawmaking compared to the case study methods employed by [Baumgartner and Jones (2010)] and extend studies on media agendas to the impact on lawmaking. With the granularity of these data, it is possible to measure dyadic salience representation in Congress, or various issue salience measures in state lawmaking bodies. The State Newspaper Data should advance the field of issue salience in lawmaking both empirically and theoretically by allowing the testing of more specific questions.

In chapter two, I also show various uses for the SND. Using machine learning, it is possible to create computer generated issue areas through topic modeling or to use guided machine learning to classify a large number of articles into existing frameworks like the Policy Agendas Project in a short amount of time. These data could be used by those that study national policy making, state policy making, representation, and public opinion. It is reasonable to expect that those outside of political science use these data for research on
communications, journalism, computer science, or information science.

Chapter three begins formal hypothesis testing. This chapter uses the SND at the national level to test if bill sponsorship patterns in the House of Representatives changes based on the nature of the issue. Since the SND provide measures of both state and national issue salience, I was able to measure competing sources of influence on members in the House. I use four issues as a case study. Two issue are largely symbolic: firearms and immigration. The other two issues are largely resource based: energy and farming. Results show that national salience is the key motivator for bill sponsorship on symbolic issues while state salience is a larger driver of bill sponsorship for resource based issues.

Chapter four moves to the state level and specifically focuses on firearms as an issue. Congress has not passed a meaningful law on firearms since Assault Weapons Ban, which has since expired. This inaction allowed state lawmakers to take the lead in developing policy that determines the level of access to firearms. This chapter tracks the process of changing state firearm policy beginning with exogenous firearm salience (news not generated by lawmakers). I show that exogenous firearm news precedes news created by lawmakers. In the next step, evidence shows that lawmakers from liberal, moderate, and conservative states react to spikes in exogenous news. However, only states with unified governments are able to change policy, typically in a polarized manner. States controlled by Democrats pass more restrictions on firearm access and states controlled by Republicans either lower restrictions or keep the level of restrictions the same.

Chapter five combines elements from chapters three and four to analyze how long salience lasts depending on issue type. This chapter considers how state legislatures respond to firearm salience and extreme weather event salience using variation in session time as the key independent variable. The key question analyzed in this chapter is does salience last if it occurs when lawmakers are not in session? The chapter finds mixed evidence. For the symbolic issue of firearm, events that occur when a state legislature is in session tend to see an increase in sponsored legislation on firearms. Firearm issue salience that occurs out of
session has not effect. For weather events, an issue that requires legislative attention, events that occurred out of session led to an increase in weather bills, however in-session weather event salience had no statistically significant effect. The null finding may be explained by the propensity for weather events to occur during the later half of the year due to hurricane season, which is not during a time that most state legislatures meet.

6.2 Discussion

By breaking apart issue salience into different definitions, this dissertation better sets expectations for how context affects the relationship between issue salience and lawmaking. The contexts analyzed in this dissertation include the source of the salience and the receiver. In this project, the receiver was either a lawmaker (chapter three) or a lawmaking body (chapters four and five). For the source, both national and state sources were considered and often included in the same models. Issue type largely drove which signal mattered more. For lower salience resource issues, local signals showed to be more important. However, for higher salience symbolic issues, spikes in national coverage drove lawmaker actions.

In future work, I would like to look at variation in the issue salience signal receiver. At the national level, various lawmaker traits like years of experience, district composition, ideological extremity, and district electoral competitiveness may impact the issue representation behavior of members of Congress. There is already evidence that those variables have small impacts on overall sponsorship patterns [Volden and Wiseman 2014], but it is possible that those lawmaker traits have much more in common with issue salience representation. At the state level, using other aspects of professionalization beyond session length may reveal more interesting relationships. Finally, in a different project, I am working on issue salience and ballot measures, trying to untangle the relationships between ballot measures, issue salience, and state legislative agendas.

Beyond just looking at different contexts regarding salience, there should be more work on how different methods of operationalizing issues changes results. As stated earlier in chap-
ter one, issues is also a wide ranging term, it can refer to general issues like in the Policy Agendas Project, or refer to a specific issue. For example, a study can measure the impact of a specific issue, like the Sandy Hook school shooting, place news generated from that event into a larger scheme like major topic 12 (law and crime) in the Policy Agendas Project. Each comes with advantages. Analyses that study specific events likely have high quality measures of issue salience, but will have smaller claims when discussing the generalizability of their findings. Studies that use broader systems to group issues likely create categories that combine unlike issues, but should have broader and more generalizable findings. More work that reconciles the differences in findings and expectations for lawmaking comparing these two approaches to measuring issue salience should be a methodological debate of the future.

The findings in this project also comment on Congressional productivity and lawmaking. To be clear, this is not a project that measures or directly comments on the total output of lawmaking in America (Binder, 1999). However, much like (Adler and Wilkerson, 2013), this dissertation finds ways which lawmaking happens while more salient gridlock overshadows those efforts. Take lessons from chapter three, lawmakers sponsor bills on resource issues based on what is happening in their home state but sponsor bills on symbolic issues depending on national salience. Although the more salient topics may end in gridlock, this finding shows that productivity is still a concern for members of Congress. Chapter five shows that potentially devastating issues like extreme weather still end up affecting lawmaking behavior in state institutions even if those events occur while the legislature is not in session. I would not claim that these results argue that gridlock is simply cosmetic. Rather, I would claim that there are signs that lawmakers are still working on issues they know will directly impact constituents even though the most attention grabbing issues remained gridlocked.

Even on the national symbolic issues like firearms, states are still changing statutes to better reflect the preferences from citizens. The actions from state legislatures carry less attention than the actions from national lawmakers, however, their impact on laws may be
equal. If national government continues to stalemate on salient symbolic issues, it is possible that state efforts to address these issues gain more attention.

Moving to the future of issue salience data, one of the more difficult aspects of this project was finding detailed lawmaking data to pair the State Newspaper Data with. Most of this analysis used bill sponsorship as a dependent variable. However, as Casas et al. (2018) has pointed out, sponsorship is not always the cleanest measure of issue attention for lawmakers. There should be a greater push to quantify the agenda of lawmakers and lawmaking bodies. Legislative agendas are a major part of how current day political science explain lawmaking activity. Measures that capture how lawmakers bring up issues during campaigns, on their websites, and during floor speeches are also important and needed. With work on text analysis developing in political science, we should also have greater detail on what issue or issues each bill covers.

On the issue salience side, the State Newspaper Data is an advancement over existing data sets. However, there is greater potential for issue salience data that provides both national and localized measures of salience. Google collects vast amounts of data on searches that are geolocated. Although Google search data may measure a different aspect of issue salience\(^1\), Google data would be more granular and perhaps tied to user profiles that would give some sense of demographic information. With most data generated by Google or other online search engines unavailable to researchers, the SND remains one of the best sources for sub-national measures of issue salience. However, partnerships between researchers and technology companies like Google could provide better data and a common good. If data from large companies like Google remain out of reach for researchers, more should be done to tie newspaper data and other measures of salience to polling data. In chapter two, I show that newspaper data likely measure exposure and most important problem questions on surveys measure top of mind responses about issues and concerns. With more data that links issue salience data to polls, we will be better able to trace the process from when citizens are

\(^1\) Much like how survey data and Newspaper data measure different aspects of salience
exposed to news, to forming an opinion, to voting patterns, to final lawmaking outcomes.

As partisan warfare intensifies and symbolic issues consume more of America’s attention, it will be even more crucial to understand local needs. This project shows that lawmakers are still attentive to state needs and that the relationship between representative and constituent persists despite the focus on issues that intensify gridlock. With more exact definitions of issue salience and better understanding the contexts of signal and receiver, issue salience will play a greater role in models of lawmaking.
Bibliography


Baumgartner, F. R., Jones, B. D., Wilkerson, J., and Adler, E. S. (2010). Policy agendas project. Online database distributed by the Department of Government at the University of Texas at Austin.


Gelman, J. (2018). If congress is so dysfunctional, why is its staff so busy? a congressional fellow’s perspective. PS, Political Science & Politics, 51(2):494.


A.0.1 List of Newspapers in State Newspaper Data

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<th>Source</th>
<th>Publication</th>
</tr>
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<td>1999-2016</td>
<td>Proquest</td>
<td>The Arizona Republic</td>
</tr>
<tr>
<td>California</td>
<td>2001-2016</td>
<td>Proquest</td>
<td>The LA Times</td>
</tr>
<tr>
<td>Colorado</td>
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<td>Lexis Nexis</td>
<td>Denver Post</td>
</tr>
<tr>
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<td>1999-2016</td>
<td>Proquest</td>
<td>The Hartford Courant</td>
</tr>
<tr>
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<td>2004-2016</td>
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<td>Florida Times Union</td>
</tr>
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<td>Lexis Nexis</td>
<td>Journal Constitution</td>
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<td>Proquest</td>
<td>Idaho State Journal</td>
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<td>Proquest</td>
<td>Chicago Tribune</td>
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<tr>
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<td>2000-2016</td>
<td>Proquest</td>
<td>Indianapolis Star</td>
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<td>Proquest and LN</td>
<td>Des Moines Register and Telegraph Herald</td>
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<td>2000-2010 and 2012-2016</td>
<td>Proquest and LN</td>
<td>Topeka Capital</td>
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<td>Proquest</td>
<td>Courier-Journal</td>
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### A.0.2 Policy Agendas Major Topics and Codes

Table A.2: Policy Agendas Major Topics and Codes

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<td>5</td>
<td>Labor and Unions</td>
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### A.0.3 List of Key Words Used in Chapter 3

Table A.3: Key Words CH. 3

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A.0.4 List of Key Words Used in Chapter 4

Words or phrases used to identify articles about mass shootings: firearm, gun, second amend-, mass shoot-, school shoot-

Words or phrases used to identify articles that were driven by lawmakers: legislature, legislation, legislator, law, bill

Note: All articles had a keyword tag “legislature” if Lexis Nexis or ProQuest identified content about a state legislature.
Chapter 4 Models With National Salience in Interactions

Figure A.1: Simulation with National Event Salience

Figure A.2: Simulation with National Legislative Salience
A.0.6 Chapter 4 Models With Ideological Diffusion

The ideological diffusion variable was constructed three separate times. Each state-year received a diffusion value based on what ideological similar states did the year prior. A year lag was used in accordance with most diffusion studies. A learning period needs to occur for diffusion to work. The first model in the below table is the model used in the main body of the chapter. Models 2-4 show use three different measures of diffusion, labeled “diffuse x.” The first diffusion variable uses what the most ideologically similar state did with their gun provisions in the previous year. The second diffusion model uses the average of what the two most ideologically similar states did in the previous year. The third model uses a three state average. Cook Index was used to measure ideological similarity.
### Table A.4: Alternative Models for Ch. 4 (With Diffusion)

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<td>$-0.134^{**}$</td>
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</tr>
<tr>
<td>National Event News</td>
<td>$-209.940$</td>
<td>$-287.276$</td>
<td>$-301.890$</td>
<td>$-336.512$</td>
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<tr>
<td></td>
<td>(266.712)</td>
<td>(262.809)</td>
<td>(264.328)</td>
<td>(265.514)</td>
</tr>
<tr>
<td>Cook Index</td>
<td>$-0.004$</td>
<td>$-0.062$</td>
<td>$-0.065$</td>
<td>$-0.007$</td>
</tr>
<tr>
<td>(0.018)</td>
<td>(0.018)</td>
<td>(0.018)</td>
<td>(0.018)</td>
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<tr>
<td>GOP Governor</td>
<td>$-0.447^*$</td>
<td>$-0.404$</td>
<td>$-0.395$</td>
<td>$-0.435$</td>
</tr>
<tr>
<td>(0.270)</td>
<td>(0.266)</td>
<td>(0.268)</td>
<td>(0.268)</td>
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</tr>
<tr>
<td>GOP SL</td>
<td>0.505</td>
<td>0.508</td>
<td>0.508</td>
<td>0.486</td>
</tr>
<tr>
<td>(0.368)</td>
<td>(0.362)</td>
<td>(0.364)</td>
<td>(0.364)</td>
<td></td>
</tr>
<tr>
<td>Democratic SL</td>
<td>0.014</td>
<td>0.082</td>
<td>0.108</td>
<td>0.173</td>
</tr>
<tr>
<td>(0.462)</td>
<td>(0.456)</td>
<td>(0.459)</td>
<td>(0.462)</td>
<td></td>
</tr>
<tr>
<td>United</td>
<td>$-0.454$</td>
<td>$-0.345$</td>
<td>$-0.323$</td>
<td>$-0.305$</td>
</tr>
<tr>
<td>(0.504)</td>
<td>(0.497)</td>
<td>(0.501)</td>
<td>(0.502)</td>
<td></td>
</tr>
<tr>
<td>Diffuse 1</td>
<td>0.146***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0.043)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diffuse 2</td>
<td></td>
<td>0.206***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0.073)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diffuse 3</td>
<td></td>
<td></td>
<td></td>
<td>0.228***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.085)</td>
</tr>
<tr>
<td>(49.274)</td>
<td>(48.549)</td>
<td>(48.791)</td>
<td>(48.874)</td>
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</tr>
<tr>
<td>Event News x GOP SL</td>
<td>$-118.762$</td>
<td>$-126.278$</td>
<td>$-130.007$</td>
<td>$-133.276$</td>
</tr>
<tr>
<td>(49.008)</td>
<td>(48.329)</td>
<td>(48.703)</td>
<td>(48.871)</td>
<td></td>
</tr>
<tr>
<td>(54.995)</td>
<td>(54.276)</td>
<td>(54.020)</td>
<td>(54.579)</td>
<td></td>
</tr>
<tr>
<td>Lagged Event News x GOP Gov</td>
<td>$-89.257$</td>
<td>$-60.103$</td>
<td>$-60.191$</td>
<td>$-55.911$</td>
</tr>
<tr>
<td>(54.250)</td>
<td>(54.127)</td>
<td>(54.090)</td>
<td>(55.177)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.148</td>
<td>0.050</td>
<td>0.042</td>
<td>0.109</td>
</tr>
<tr>
<td>(0.700)</td>
<td>(0.690)</td>
<td>(0.694)</td>
<td>(0.694)</td>
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</table>

**Observations:** 401

**R^2:** 0.315 0.337 0.330 0.329

**Adjusted R^2:** 0.208 0.231 0.224 0.222

**Residual Std. Error:** 1.555 (df = 346) 1.532 (df = 345) 1.540 (df = 345) 1.542 (df = 345)

**F Statistic:** 2.946*** (df = 54, 346) 3.191*** (df = 55, 345) 3.096*** (df = 55, 345) 3.077*** (df = 55, 345)

**Note:**  *p<0.1; **p<0.05; ***p<0.01
# A.0.7 List of Newspapers Used in Chapter 5

Table A.5: List of Papers Used in Chapter 5

<table>
<thead>
<tr>
<th>State</th>
<th>Years</th>
<th>Source</th>
<th>Publication</th>
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</thead>
<tbody>
<tr>
<td>3 Colorado</td>
<td>2005-2016</td>
<td>Lexis Nexis</td>
<td>Denver Post</td>
</tr>
<tr>
<td>5 Florida</td>
<td>2004-2016</td>
<td>Lexis Nexis</td>
<td>Florida Times Union</td>
</tr>
<tr>
<td>17 Minnesota</td>
<td>2005-2016</td>
<td>Lexis Nexis</td>
<td>Minnesota Star Tribune</td>
</tr>
<tr>
<td>19 Missouri</td>
<td>2005-2016</td>
<td>Lexis Nexis</td>
<td>The Post Dispatch</td>
</tr>
<tr>
<td>27 North Dakota</td>
<td>2006-2016</td>
<td>Lexis Nexis</td>
<td>Bismarck Tribune</td>
</tr>
<tr>
<td>28 Ohio</td>
<td>2006-2016</td>
<td>Lexis Nexis</td>
<td>Dayton Daily</td>
</tr>
<tr>
<td>29 Oklahoma</td>
<td>2005-2016</td>
<td>Lexis Nexis</td>
<td>The Oklahoman</td>
</tr>
<tr>
<td>31 Pennsylvania</td>
<td>2005-2016</td>
<td>Lexis Nexis</td>
<td>Philadelphia Inquirer</td>
</tr>
<tr>
<td>35 Texas</td>
<td>2007-2016</td>
<td>Lexis Nexis</td>
<td>Austin American Statesman</td>
</tr>
<tr>
<td>36 Utah</td>
<td>2009-2016</td>
<td>Lexis Nexis</td>
<td>Salt Lake Tribune</td>
</tr>
<tr>
<td>39 Washington</td>
<td>2006-2016</td>
<td>Lexis Nexis</td>
<td>Spokesman Review</td>
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</table>
### A.0.8 List of Keywords Used in Chapter 5

Table A.6: Key Words CH. 5

<table>
<thead>
<tr>
<th>Topic</th>
<th>Key Words</th>
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<tbody>
<tr>
<td>Firearms</td>
<td>firearm, gun, second amend-, mass shoot-, school shoot-</td>
</tr>
<tr>
<td>Weather</td>
<td>storm, flood, hurricane, floods, storms</td>
</tr>
<tr>
<td>State Lawmaking Filter</td>
<td>state leg, governor, legislature</td>
</tr>
</tbody>
</table>
A.0.9 Model Fits From Chapter 5

Figure A.3: Fit for both negative binomial models
Figure A.4: Predicted values for Colorado for both in and out of session salience
Figure A.5: Predicted values for Colorado for both in and out of session salience