The Dissertation Committee for James Alexander Branham certifies that this is the approved version of the following dissertation:

Public Opinion, Partisanship, and Public Policy

Committee:

Christopher Wlezien, Supervisor

Bethany Albertson

Stephen Jessee

Stuart Soroka

Public Opinion, Partisanship, and Public Policy

by

James Alexander Branham

Dissertation

Presented to the Faculty of the Graduate School

of the University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

May 2019

Acknowledgments

This dissertation would not have been possible without the help and support of a great many people, far too many to list here. First and foremost is Christopher Wlezien, my advisor, for the innumerable hours he spent helping me with everything from technical modeling questions to motivating theoretical discussions. I would also like to thank the other dissertation committee members, Bethany Albertson, Stephen Jessee, and Stuart Soroka for their thoughtful comments and helpful suggestions over the years.

Other helpful advice and opinions came from John Bullock, Jeff Gill, Eric Plutzer, Christopher Warshaw, participants in the American Politics Workshop at the University of Texas at Austin, and members of the Multidisciplinary Opinion and Democracy research group at the University of Gothenburg. I have also benefited from feedback by conference participants at the Annual Meetings of the Society for Political Methodology, the American Political Science Association, the Midwest Political Science Association, and the Southern Political Science Association.

Finally, I would like to thank my friends and family. Without their support, I doubtless would not have managed to finish.

Public Opinion, Partisanship, and Public Policy

by

James Alexander Branham, PhD

The University of Texas at Austin, 2019

SUPERVISOR: Christpher Wlezien

What is the relationship between public opinion and public policy? This question is at the heart of representative democracy. This dissertation attempts to enhance our understanding of the role that partisanship plays in the opinion-policy process. We proceed in four steps. First, section 1 situates the analyses that follow in the current literature. section 2 uses data on spending preferences to estimate general spending preferences of individuals and congressional candidates in a shared dimension. The approach employed allows for direct comparison between those two groups, and between the groups and where they perceive policy to be. section 3 investigates whether partisans respond to policy changes similarly. Findings indicate that partisans react differently to policy change in issue areas with relatively large disagreement. Finally, section 4 flips the equation and considers policy as the dependent variable. Are partisans more likely to get their preferred policies when they control the White House? The answer, it seems, is yes. Policy responds primarily to partisans of the same party as the president.

Contents

List of Tables

List of Figures

1 Introduction

Political representation is a hallmark of democracy. Representation, though, has many different meanings. Representation can refer to the relationship between members of the public and their elected representative(s). Geography provides the link between representatives and their constituents.[1] If you live in a representative's geographic constituency, then you are represented by them. This is sometimes referred to as formal representation.[2]

We can place higher demands on representation. One common demand is that the institution look like the people it claims to represent. Under this conception, it is normatively desirable for political institutions to be about 50 percent female This kind of representation is referred to as descriptive representation.

Yet another way of conceptualizing representation looks at outputs from the political system. From this point of view, representation is best when outputs match the preferences of those being represented. For example, if everyone wants policy X to be enacted, and it is enacted, then substantive representation has been achieved. Here, much less emphasis is placed on who is doing what than in formal representation or descriptive representation. Instead, we just look at the outputs of the political system and compare them to the inputs (in other words, the public's preferences).

Modern democracies are expected to exhibit some kind of relationship between public opinion and public policy. Hence, we want to understand the extent to which public opinion affects policy and vice-versa. However, equally important is to to understand *whose* preferences are getting represented in policy outputs. Democratic government promises that citizens' preferences are reflected in policy outputs, but we also want to understand if certain groups' opinions matter more than others. Given this importance, links between public opinion and public policy have not gone unstudied. Generally speaking, there is agreement

[1] Determining constituencies by geography is not the only way, but it is by far the most common today.
[2] Pitkin (1967) originally developed terminology used in this section for the various types of representation.

among political scientists that public opinion can affect policy. The relationship is by no means perfect, and can be absent in some policy areas.

Equally important is that citizens notice these policy changes and react to them. There would be cause for concern if citizens made demands of government, government implemented those demands, then citizens continued to demand more of the same. In other words, public opinion needs to respond to public policy. After all, if the public requests more of a certain policy and policymakers deliver more of it, the public should reduce their demand for more of that policy, all else equal. If this relationship does not exist, then a worry is that the public's stated preferences for more or less of a policy are not actually tied to that policy. In that case, we might worry if policy responded to public opinion, as it is responding to something that is unanchored to the policy status quo.

Of course, we must also note that public opinion does not magically get translated into policy outputs. There are important agents along the way who may or may not pay attention and act on public opinion. These include people such as bureaucrats, judges, and party leaders. However, among the most visible of policymakers are legislators and other elected officials. Given that they are directly selected by the people, we might expect a fairly strong link between the public's views (or at least their constituent's views) and the views of elected officials.

This dissertation expands our knowledge of public opinion, partisanship, and public policy by linking together what we already know in order to generate and test new hypotheses. It is composed of four parts. In the current section, I review what we already know about public opinion, partisanship, and public policy in order to create new theory and testable hypotheses.

The following three sections are each designed to be self-contained. In section 2, coauthored with Stephen Jessee, we develop a model of individual's spending preferences.[3] Disagreement over the size of government is one of the deepest disagreements, so it is essential

[3]A modified version of section 2 is published by *Electoral Studies*.

to understand people's spending preferences and how they are (or are not) represented. Using data on relative preferences for more or less spending across different issue areas, we estimate the general spending preferences of individuals and congressional candidates along a left-right spending dimension. Our modeling approach also allows us to estimate the location of policies on this same dimension, permitting direct comparison of people's spending preferences with where they perceive policy to be. Echoing other work in this area, we find that public shows very low levels of polarization on spending preferences, even across characteristics like partisanship, ideology, or income level. The distribution of candidates' spending preferences shows much more sorting by party.

Next, section 3, explores how partisanship influences the effect of policy on public opinion.[4] Do partisans respond differently to changes in public policy depending on which party controls the government? It is well established that opinions of various groups tend to move in parallel over time; however, work on partisanship shows that partisans can respond very differently to the same message. In section 3, I investigate whether partisans from different parties react the same to changes in policy, the implication of the parallel publics literature, or differently, as literature on partisanship would imply. I argue that we should see important differences in policy feedback between partisan groups, but only on salient policies that have large disagreement across partisan lines. In other words, in those areas that people are most passionate about and disagree with one another. To test this, I use the thermostatic model of opinion-policy feedback, relying on data from the 1973–2014 General Social Survey. Results indicate that partisans react differently to policy in issue areas with relatively large disagreement; the main findings are captured in Figure 13. This enhances our understanding of the interaction of partisan control of government and partisanship in the opinion-policy process. I conclude by discussing some of the implications of these findings for research on public opinion and public policy.

[4]A modified version of section 3 is published at *Public Opinion Quarterly*.

Finally, in section 4, I reverse the focus and shifts towards analyzing public policy as the dependent variable. In particular, I look at whether partisans are more likely to get their preferred policy outputs when their own party controls government. In other words, is policy more responsive to opinion of in partisans than out partisans? Partisans fight fiercely to get their own party's politicians into office; presumably, at least one of their goals is to get their preferred policy enacted. This assumption — that partisan's policy preferences matter more when their party is in power — underlies much of our understanding of politics, yet is not well-tested. Furthermore, there are reasons to believe it is simply not true. The American political system was designed to move slowly and force compromise across political camps. Using data across 11 issue areas from 1973 to 2016, I test whether partisans' opinions matter more when their party is in power. I show that control of government can matter, but it oftentimes does not. However, for highly salient, big spending issues, policy responds more to partisans of the same party as the president. The same is not true about Congress.

1.1 Public Opinion & Public Policy

What is the nature of public opinion, and how does it affect public policy? Early scholars were pessimistic about most people's ability to hold stable, coherent political preferences (see Converse 1964, for the canonical example). One of the most consistent findings in political science is that individuals in general are remarkably uninformed about current events, policies, and political leaders (Carpini and Keeter 1997; Galston 2001). This lead to worry and hand wringing that public opinion is ephemeral and easily manipulated by political and economic elites to nefarious purposes.

However, another consistent finding is that if we aggregate individual's preferences upward to larger groups, then we find remarkable stability of public opinion over time (Page and Shapiro 1992). This suggests that even if members of the public are not paying attention individually, as a group their attitudes remain stable. This is likely because most of the time people are not receiving messages about a particular attitude they hold, so their attitudes

vary randomly a bit. This random variation at the individual level is canceled out when we aggregate up. Even when they are receiving messages, if people already hold a strong attitude on that subject, they will be unlikely to change their mind. Taken together, these suggest that the only areas where aggregate public opinion will exhibit instability is in areas where people do not already hold strong attitudes *and* are receiving information (Druckman and Leeper 2012). Since receiving information about a topic is likely to lead to attitude formation, this is unlikely to happen often. Thus, it is perhaps not entirely surprising that public opinion at the aggregate level is coherent and stable in ways that are difficult to find when looking at the individual level.

Not only do we find stability at the group level that did not exist at the individual level, we also find that public opinion reacts to policy change predictably. Generally speaking, as the amount of a certain policy increases (for example, if we spend more on a policy), then people's desire for additional increases goes down. The logic behind this is referred to as the "thermostatic model" of public opinion (Wlezien 1995). Research has expanded the initial analysis of the thermostatic model across the US states (Pacheco 2013b) and across other Western democracies (Soroka and Wlezien 2010), as well as aggregating across multiple issues (Erikson, MacKuen, and Stimson 2002).

In general, the thermostatic model holds up very well across different contexts. There are some factors, however, that can modify the strength of the relationship. One of the most important is issue salience (Soroka and Wlezien 2010). The public does not tend to know much or care much about nonsalient issues, almost by definition. We also suspect that it is harder for elected representatives to know their constituency's opinion on nonsalient issues, since many of the traditional ways of garnering that information do not exist for nonsalient issues. For example, pollsters do not ask very much about these topics. Additionally, people are not likely to contact their representatives about issues about which they care little.

1.1.1 Representation by Policymakers

There is a large body of literature focusing on whether policymakers — usually elected officials — represent public opinion. Previous research has looked at this in a few different ways. One way checks whether individual officials's views align with the views of their constituents. This is referred to as "dyadic" representation. The other popular way of assessing representation, referred to as "collective" representation, is to look at whether the public as a whole is represented by the legislative body as a whole (Weissberg 1978).

Of course, there are also concerns here about certain groups getting better or worse representation. Some research suggests that constituents are less well represented when they are of a different race than their elected official (Broockman 2013).

Salience can affect this relationship, of course. We do not expect people to have very strong opinions on nonsalient issues. Since we suspecct the mechanisms the opinion-policy link relies on are absent for nonsalient issues, these issues may not be tightly tethered to public opinion. For example, if an issue is not salient, then pollsters may not ask about it, and constituents may not contact their Congressperson to inform them of their opinion. If the Congressperson has no way of knowing what their constituents want, then we would expect the link from opinion to policy to weaken or break.

1.1.2 Whose Opinion Matters?

Another concern in a democracy where public policy responds to public opinion is *whose* opinion policy is responding to. Different groups want different policies, and it is possible that one large, well organized group can exert its preferences to the detriment of other less organized groups.

Although the national founders spent a lot of time worrying about "tyranny of the majority," people today typically spend more time worrying about smaller interests getting their preferred policies over the objections of larger interests. We know that it can be difficult for large, diffuse interests to organize themselves (Olson 1965). For example, a contemporary

debate is over "net neutrality." In this debate, proponents typically argue that large telecom companies are getting their preferred policy over the objections of most Americans.

One such group of particular concern is the rich. If the richest citizens can subvert the political system for their own economic benefit because they have more time and resources, that is a real problem, normatively speaking. Over the past decade or so, scholars have devoted significant resources to determining whether this is the case. Two main findings emerge from this research area. First, preferences of Americans are not very different across income groups (Bartels 2005; Gilens 2012; Soroka and Wlezien 2008). This limits the practical importance of the question. Second, there is only limited evidence that the rich get their way over the preferences of average-income Americans, though there is more evidence that the poorest Americans have less influence over the political process than they should if everyone were represented equally.

1.2 Partisanship

Partisanship has not been neglected in the political science literature. Partisanship is the best predictor of many political phenomena such as an individual's opinion on a topic, how they will vote in the upcoming election, and our perception of our own representatives. Some of the earliest accounts of how Americans perceived the political world noted that partisanship played an important role in coloring people's perceptions (Angus Campbell et al. 1960).

In the United States, like many countries, partisanship and ideology are closely intertwined. While theoretically distinct, they are so closely related that it can be empirically difficult to distinguish between them. This has become more true in recent years, a phenomenon referred to variously as "polarization" or "sorting." Generally, using the term "polarization" refers to the average Republican becoming more conservative and the average Democrat becoming more liberal. "Sorting," on the other hand, refers to conservatives leaving the Democratic party for the Republican party and vice-versa.

Though there is wide agreement that, at the elite level, the parties have polarized over time (McCarty, Poole, and Rosenthal 2006; Theriault 2006; Theriault 2013), we lack such consensus for the public. The literature itself is polarized over whether the public has polarized over time or not. One side (Fiorina, Abrams, and Pope 2008; Fiorina and Abrams 2008) argues that there is not enough evidence to conclude that the public has polarized over time. The other (Abramowitz and Saunders 2008; Webster and Abramowitz 2017) argues that the public has indeed polarized over time.

Regardless of whether members of the public have become more polarized over time or not, partisanship has been and remains the single best predictor of a whole plethora of political attitudes and behavior. Thus, we might suspect that partisanship affects the relationship between public opinion and public policy.

1.3 Public Opinion, Partisanship, and Public Policy

Despite the prominence of partisanship in the literature on formation of public opinion, there has been little research on how partisanship impacts the public opinion — public policy loop. There are good reasons to suspect that it does; partisanship is after all how politics is organized in the United States.

Soroka and Wlezien (2010) do look at whether Democrats, Independents, and Republicans respond differently to changes in public policy. They find that the three groups respond very similarly.

In the following three sections, I argue that we should expect to see partisanship play a role in the public opinion — policy process. The arguments in the next two, section 3 and section 4, are similar. There I argue that we should not expect to see differences necessarily because one person is a Democrat and the other a Republican, but because one of them has control of government. Republicans should be less responsive to policy change and more likely to get the kinds of policies they want, but only when a fellow Republican controls government. The same is true for Democrats. The final section, section 2, takes a slightly

different approach. Here, we examine political representation by estimating individuals' and congressional candidates' spending preferences. We perform the estimation in such a way that it allows us to compare across groups. We find that in the public, Democrats and Republicans are very similar. The same is not true at the elite level, however, where the parties are more polarized.

2 Modeling Spending Preferences & Public Policy

Deciding how much to spend and on what is one of the most consequential tasks of a modern day government.[5] The United States government, despite spending a relatively small percent of the country's GDP in comparison to many advanced industrialized democracies, still spends an amount roughly equal to one fifth of the nation's economic output. At the same time, the size of government, which is closely linked to spending, is commonly seen as one of the most prominent issue dimensions dividing the two major political parties in modern U.S. politics, playing a significant role in electoral politics. This makes understanding preferences for spending, particularly in relation to spending levels on specific issues, a particularly important task for scholars.

However, the usual instrument for measuring public opinion — the survey question — has some difficulties measuring spending preferences, which limits the study of spending preference and policy in the electoral arena. While it is easy to imagine that survey respondents can provide meaningful answers to questions on non-spending issues, such as "Do you believe that same-sex marriage should be legal?" or "Under what circumstances do you think that abortion should be allowed?," spending policy is denominated on a scale that is virtually unfathomable to all but the most informed policy wonks.[6] Therefore, surveyors usually ask a less demanding question about respondents' relative preferences — whether they would like to see spending increased, decreased, or kept about the same.[7] A notable application of

[5]This chapter is coauthored with Stephen Jessee. The authors contributed equally. This chapter has been published by *Electoral Studies* (Branham and Jessee 2017) and is reproduced here with their permission.

[6]Previous work has highlighted the difficulty that citizens have in estimating quantities such as the inflation or unemployment rates (Conover, Feldman, and Knight 1986) or overall economic conditions (Holbrook 1996). Gilens (2001) shows that perceptions about the percent of the federal budget devoted to foreign aid are often very far from the true values. Spending levels would seem to be an order of magnitude more difficult to comprehend. Even knowing whether spending on most areas is measured in millions, billions, or trillions is likely beyond the capacity of many Americans. Ansolabehere, Meredith, and Snowberg (2012) show that survey respondents can understand familiar economic quantities, particularly when provided with benchmarks. This work, however, focuses on numbers that respondents are likely to come into direct contact with in the course of their daily lives such as the price of gasoline. Our focus on federal spending levels seems quite different from these quantities.

[7]There are, of course, other ways of measuring preferences related to spending. One such way is to ask about the general level of spending or taxation rather than spending on a given policy (for examples, Hansen 1998; Krimmel and Rader 2017). Using relative preferences gives us the advantage of being able

this logic is the thermostatic model of public opinion and policy (Wlezien 1995; Soroka and Wlezien 2010; Wlezien and Soroka 2012; Pacheco 2013b). In this model, citizens' relative preferences represent the difference between the citizen's preferred, or ideal, policy position and the actual location of policy on a given issue. Other scholars have focused on determining how spending preferences on specific issues influences voters' electoral choice (Williams 2015) or how personal experience with welfare benefits can affect vote choice (Orriols 2010).

While relative preferences are interesting, they are limited in what they can tell us by themselves. We cannot, for example, measure *distance* — that is, when two people both say that they prefer greater spending, we cannot say whether one of them prefers much more and the other just a little more, or whether they both want a great deal more. Similarly, when a respondent answers that spending is "about right," we have no way of knowing whether spending is exactly right for them or whether they would prefer a little more or a little less. This is important if we want to compare how well represented different groups of the public, if we seek to understand the role of spending preferences in electoral decisions, or if we are interested in studying polarization. Relative preferences also do not give us information on respondent's *overall* spending preferences. While ideology represents a simplification of politics into a left-right space, we lack a comparable measure for spending preferences.[8]

In the next section, we develop a model that uses respondents' stated relative spending preferences to estimate an overall spending preference for each respondent. Previous research has already shown that it is reasonable to scale some issues together to measure underlying spending preferences (Jacoby 1994; Schneider and Jacoby 2005; Jacoby 2008). Our model also estimates the position of spending policy on each specific issue on the same scale as respondent preferences. Following this, we use data from the 2014 General Social

to use multiple questions to jointly scale preferences of the public and congressional candidates together (see Ansolabehere, Rodden, and James Snyder 2008, for a discussion of why using multiple measures of preferences is especially useful).

[8]Of course, the work on the public's "mood" is related to this (Stimson 1991; Erikson, MacKuen, and Stimson 2002; Enns and Kellstedt 2008). Stimson, however, includes nonspending information in his measure. There are also other attempts at creating a spending-specific mood measure (Ura and Ellis 2012), which we discuss more below.

Survey (GSS) to estimate the model and discuss the parameter estimates.[9] In addition to constructing a measure for spending preferences and policy location, we also contribute to two debates in the literature.

First, our estimates of citizens' ideal points and policy positions suggest that spending on most policies is lower than many individuals' preferences. There may be systematically lower spending levels than a majority prefers, though limitations of the data make this difficult to say with certainty. These results are in line with scholars who suggest that the government budget is too small (Downs 1960). Since increased spending is usually associated with liberalism, our results are also in line with studies that find that policy is oftentimes to the right of what people want (Lax and Phillips 2012, though they focus at the state level).

Second, we also show that there is little polarization in the public, at least with regard to spending preferences. Although the public may be polarized on other issues, it does not appear to be polarized by spending preferences.[10] Additionally, there is virtually no difference in spending preferences across income levels, and only a little across party lines or self-reported ideology. This suggests that, with regard to spending preferences at least, there is little polarization in the public.

From there, we apply our framework to estimate spending preferences of citizens and candidates in congressional elections on the same scale. This is possible because the 1998 GSS and the 1998 National Political Awareness Test, a survey fielded to candidates running for election to the U.S. Congress, used identical or nearly identical questions about spending preferences. These results allow for the direct comparison of spending preferences of the mass public and political elites

[9]We also analyze a question wording experiment embedded in the GSS for a majority of the spending issues, showing that most estimates are unaffected by changes in wording.

[10]The literature on polarization is vast and somewhat polarized itself. Abramowitz and Saunders (2008), Baldassarri and Gelman (2008), and Webster and Abramowitz (2017), for example, argue that the public is more polarized. Fiorina and Abrams (2008) and Levendusky (2009) argue otherwise. Others argue that polarization is more complicated. Perhaps it has occurred in some issue areas, like climate change (McCright and Dunlap 2011), or only among partisans (Lelkes 2016).

We show that while there is very little partisan polarization among the spending preferences of ordinary citizens, congressional candidates show relatively strong divergence by party in terms of their preferred level of government spending (this is in line with other literature on the subject; see for example Theriault 2006; Theriault 2013). Again, comparing spending levels with spending preferences we find that spending on most policies is lower than median preferences.

2.1 An Item Response Model of Spending Preferences

Because measuring absolute spending preferences directly through survey questions is infeasible, we propose a model that uses data on relative preferences across specific spending areas to estimate absolute preferences for overall spending. Our approach is related to that of Richman (2011), who combines DW-NOMINATE scores (Poole and Rosenthal 2011) with legislators' expressed relative preferences in order to estimate the positions of status quo locations. Instead of using exogenous preference estimates, however, we estimate both the preferences of individuals (and later, candidates) and the locations of spending policy in specific areas on a common overall spending dimension.

We build on the ideal point framework commonly used to measure ideology and other latent attitudes in political science (see, for example, Poole and Rosenthal 1991; Heckman and James Snyder 1996; Clinton, Jackman, and Rivers 2004). Let x_i represent individual i's ideal point along a spending dimension.[11] Since we are dealing with spending issues, x_i represents a respondent's overall preference for government spending.

Under our model, person i's preferred spending level in policy area j is given as:

$$y^*_{ij} = x_i\beta_j + \varepsilon_{ij} \tag{1}$$

[11]Others have argued that individuals' spending preferences (x_i in our model) are related and unidimensional (for example Jacoby 1994; Jacoby 2008). If preferences in a certain policy are either only weakly related or unrelated to this single dimension, as some previous research finds, then the associated discrimination parameter β will be at or near zero.

where x_i is individual i's overall spending preference, β_j is an issue-specific discrimination parameter, and $\varepsilon_{ij} \sim N(0,1)$ is a disturbance term assumed to be independent across respondents i and issues j.

We do not directly observe y^*_{ij}, but instead observe the response y_{ij}, referred to in the literature as a "relative preference," a trichotomous outcome of either "too much," "about right," or "too little," assumed to be generated according to:

$$y_{ij} = \begin{cases} \text{"too much"} & \text{if } y^*_{ij} < \kappa_{1j} \\ \text{"about right"} & \text{if } \kappa_{1j} \leq y^*_{ij} < \kappa_{2j} \\ \text{"too little"} & \text{if } \kappa_{2j} \leq y^*_{ij} \end{cases} \tag{2}$$

where κ_{1j} and κ_{2j} are question-specific cutpoints between the three response options.

Under this model, people are more likely to say there is too little spending on a specific issue when their spending preference x_i is higher. Equivalently, they are more likely to say that there is too much spending on a specific issue when their spending preference x_i is lower. The cutpoints κ_{1j} and κ_{2j} indicate the thresholds between the three response types ("too much," "about right," and "too little"), which can vary across policy areas. These cutpoints can be thought of similarly to those in an ordered probit model.

Of central interest here are the locations of spending policy, at least as understood by citizens, on each issue area. It should be noted that we are not attempting to estimate actual dollar amounts of spending, which would be readily available from government reports. Instead, we seek to estimate a spending preference dimension structured based on the preferences of people. Whether one prefers more or less spending on a given issue is determined by one's overall spending preference as well as the characteristics of the specific spending area in question (Soroka and Wlezien 2010). In this framework, for example, there would be nothing wrong with the spending policy position for defense being estimated to be to the left of that for space exploration despite the fact that the country spends many times more

on defense than space exploration in dollar terms. What we seek to estimate is one's overall preferences for spending, rather than the specific dollar amount one wishes the government would spend either overall or in any one area.

Although there is not a specific parameter in the model representing the spending locations for each policy area, by explicitly laying out an assumed structure for the relationship between spending preferences and responses, we can produce direct estimates of these policy positions. Specifically, it is possible through a simple transformation of parameters to obtain estimates of these quantities. For issue j, we calculate the location of spending policy (p_j) as

$$p_j \equiv \frac{\kappa_{1j} + \kappa_{2j}}{2\beta_j} \tag{3}$$

which is simply the average of the two cutpoints on issue j divided by the issue's discrimination parameter.

This location is a sensible estimate of each policy's locations for a few reasons. First, it represents the spending preference value at which a respondent would be equally likely to say "too much" or "too little" is spent on issue j. Second, it is also the value at which the probability of saying that spending on issue j is "about right" is maximized.[12] Finally, respondents with overall spending preferences to the left (right) of p_j are more (less) likely to say that there is "too much" than "too little" spending on the policy in question.

The estimated policy positions are not meant to measure the dollar amount of spending on each issue. To the contrary, they represent perceived spending positions according to respondents on a relative, not absolute, scale. Specifically, the spending policy locations indicate the position of each policy's spending level relative to the spending preferences of individuals. Policies on which only the respondents with the highest spending preferences want more spent will be estimated to have higher spending levels, while those on which most respondents want more spent (in other words, only those with the lowest spending preferences

[12]Though note that this does not mean that "about right" will necessarily be the most likely answer on policy j for a respondent whose spending preference is located at p_j.

prefer that less be spent) will have lower estimated spending locations. Estimating these spending positions reveals the locations of policy in each area relative to the distribution of individuals' overall spending preferences.

2.2 Estimating Citizen's Spending Preferences

As described above, our model uses expressions of relative spending preferences — whether citizens prefer that spending in a given area be increased, decreased, or kept about the same — to estimate the absolute positions of both citizen spending preferences and policies on an overall spending preferences dimension. Therefore, to estimate this model we require survey data in which respondents are asked whether they want more, less, or about the same amount of spending on each of a variety of different spending areas.

The GSS provides just such a dataset. In this section, we analyze the 2014 GSS, which was fielded to 2,538 respondents between February and April of 2014. The 2014 GSS targeted English or Spanish speaking people 18 years or older, living in non-institutional arrangements within the United States. These data are particularly well suited for our purposes because they include 18 spending questions across a diverse set of spending areas. Table 1 lists the wordings for these questions as well as the percent of respondent giving each of the three response options — "too much," "about right," and "too little."[13]

Of course, a limitation of these data is that the questions do not explicitly ask respondents to make tradeoffs, though the question text does mention expense. Presumably, individuals' (and later, candidates') responses would change if we forced them to choose between increased spending and higher taxes (or more deficit spending, etc). If there is a lot of arbitrariness to individuals' answers (i.e. if everyone generally wants more "free" spending on all policies), we might worry about how much information we actually have in the data to estimate an underlying spending preference. After all, if we force individuals to make tradeoffs (including

[13]The question text is "We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount."

Table 1: 2014 GSS Spending Items.

Policy	GSS Variable	Wording	Response percent		
			too much	about right	too little
Education	`nateduc`	improving the nation's education system	6.0	22.2	71.7
Environment	`natenvir`	improving and protecting the environment	9.6	31.7	58.8
Race	`natrace`	improving the conditions of Blacks	15.4	48.7	35.9
Health	`natheal`	improving and protecting the nation's health	13.4	27.6	59.0
Big cities	`natcity`	solving the problems of big cities	16.2	36.5	47.3
Child care	`natchld`	assistance for childcare	9.0	39.8	51.2
Welfare	`natfare`	welfare	49.2	30.4	20.4
Energy	`natenrgy`	developing alternative energy sources	10.5	32.1	57.4
Drugs	`natdrug`	dealing with drug addiction	11.9	28.7	59.4
Mass transportation	`natmass`	mass transportation	9.3	51.0	39.7
Parks	`natpark`	parks and recreation	6.4	61.9	31.7
Science	`natsci`	supporting scientific research	12.2	46.2	41.6
Crime	`natcrime`	halting the rising crime rate	8.6	30.1	61.3
Foreign Aid	`nataid`	foreign aid	64.1	28.5	7.4
Social Security	`natsoc`	social security	6.3	37.6	56.1
Roads	`natroad`	highways and bridges	12.1	41.1	46.8
Space	`natspac`	space exploration program	29.0	45.0	25.9
Defense	`natarms`	the military, armaments, and defense	31.1	32.4	36.4

in the survey question that increasing spending leads to increased taxes, for example) and everyone then answers that spending levels are about right or too high we may worry how much we can learn from questions without tradeoffs.

Previous research at least somewhat assuages this fear for three reasons. People do not seem to want something for nothing, generally speaking (S. Welch 1985). Second, the thermostatic model seems to work. That is, when spending goes up, fewer people want additional spending. This leads us to conclude that people are not viewing spending increases in these questions as "free." Third, people's responses to these spending questions tend to reflect a guns/butter tradeoff (Wlezien 1995). In other words, when support for defense spending increases (decreases), support for social spending tends to decrease (increase). This indicates that individuals *are* taking into account the fact that money is limited, at least in some sense. This is in line with what scholars have found more recently when they force individuals to decrease spending in one area if they increase spending in another (Bonica 2015).

We estimate our model in a Bayesian framework using JAGS (Plummer 2003), called through the rjags package in R (Plummer 2015), to implement a Gibbs sampler that produces draws from the joint posterior distribution over all of the model's unknown parameters given the data.[14] Independent vague normal priors (mean zero, variance 100) are used for discrimination parameters (β_j) and cutpoints (κ_{1j} and κ_{2j}), while independent standard normal priors are used for spending preferences x_i. The model is run in an unidentified state and each iteration of the sampler is post-processed to impose the identifying restriction that respondent spending preferences have mean zero and variance one, and that higher values of spending preferences represent preferences for more spending in general (although this will not necessarily be true for all individual policies, a point discussed in more depth below).[15]

[14]The sampler was run for 250,000 iterations, discarding the first 100,000 as burn in and saving every 25th after that for a total of 6,000 stored samples. Following Gill (2008), multiple diagnostics were calculated. All indicate that the sampler reached convergence fairly quickly and that the effective sample sizes for all parameters were large enough for reliable inference. See subsubsection A.1.2 for details.

[15]This last restriction is operationalized by flipping the scale so that β_j is positive for the majority of policies.

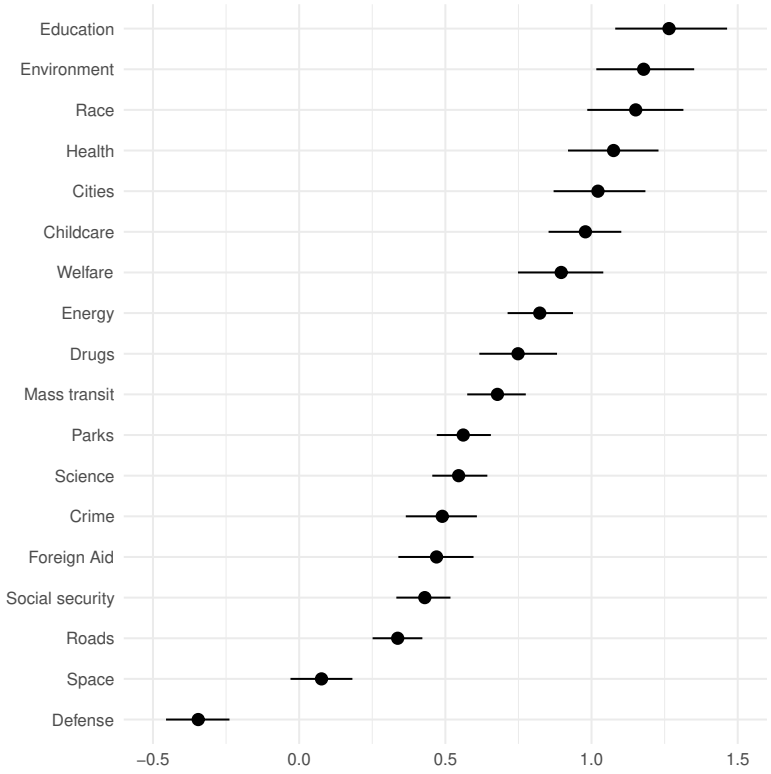


Figure 1: Discrimination Parameter Estimates, 2014 GSS. *Dots represent posterior means, horizontal bars indicate* 95% *HPDs.*

The estimated discrimination parameters (β_j) for the 2014 GSS are shown in Figure 1. These parameters indicate how strongly and in what direction respondents' overall spending preferences (x_i) are related to responses on each question. Seventeen out of the eighteen β_j estimates are positive, with only one (space) having its 95% highest posterior density region (HPD) overlap zero. This indicates that on almost all spending areas, respondents with higher overall spending preferences are more likely to prefer more (and less likely to prefer less) spending on specific issues.

Some of these positive discrimination parameters, such as those for education, environment and race, are larger in magnitude, indicating that individuals' overall spending preferences are strongly related to spending preferences on that issue.[16] Others, such as those on

[16]Of course, their specific response will also depend on the values of the cutpoints κ_{1j} and κ_{2j}, which are presented in Figure 2 below.

roads, social security and foreign aid, are estimated to be smaller in magnitude, suggesting that they are not as central to overall spending preferences.

There are two values among the estimated discrimination parameters that merit further explanation. First, space shows little evidence of discrimination along the overall spending dimension. This means that relative preferences over spending on space exploration are largely unrelated to overall spending preferences. Second, defense spending has a discrimination parameter that is estimated to be slightly negative. This implies that those who have higher overall spending preferences are more likely to prefer *less* spending on defense. Equivalently, individuals who prefer less spending generally are more likely to prefer *more* spending on defense. While this may seem somewhat counterintuitive at first glance, defense is one of the few issues in modern American politics on which conservatives, who traditionally prefer lower levels of overall government spending, often argue for more spending than liberals.

The cutpoint parameters for each question (κ_{1j} and κ_{2j}) indicate the regions of the scale for y_i^* in which respondents are likely to give each of the three response options for each question. These parameters, whose estimates are shown in Figure 2, can be interpreted similarly to the cutpoints in an ordered probit model.[17]

As discussed above, the model is identified by restricting x_i to have mean zero and variance one across all respondents at each iteration of the sampler. Thus we can interpret zero on the spending scale as "moderate," at least relative to the distribution of preferences in the public. The majority of respondents have estimated preferences between -1 and 1, with virtually all the estimates falling between -2 and 2. Overall, the distribution of spending preference estimates is unimodal, and very close to a standard normal.[18]

Figure 3 plots the estimated location of each of the policies on the same overall spending preferences dimension on which respondent spending preferences (x_i) are estimated. Poste-

[17] In fact, conditioning on spending preferences x_i reduces the model to a set of ordered probit models, one for each spending preference question.

[18] See Figure 4 and the discussion below.

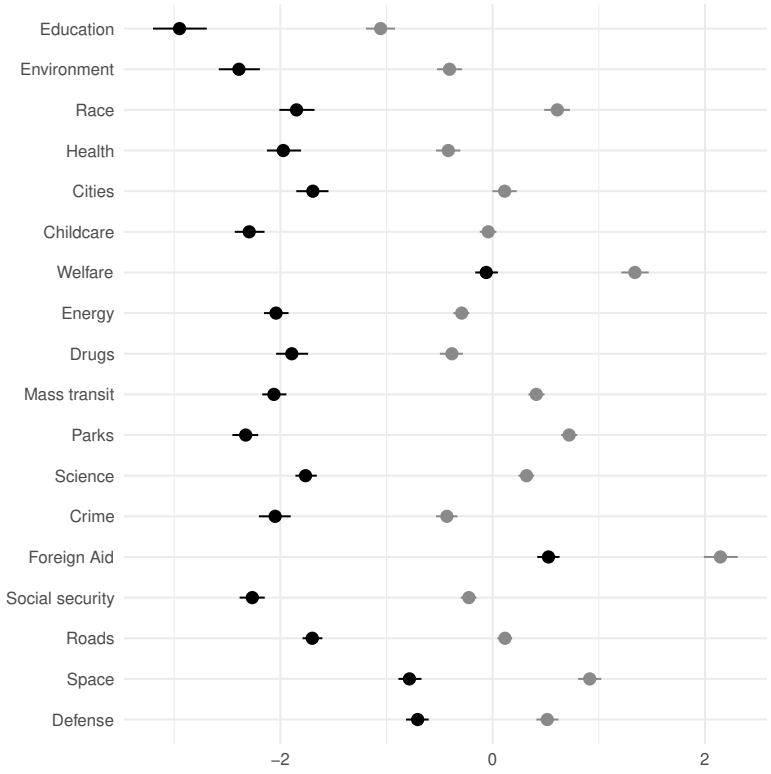


Figure 2: Cutpoint Estimates, 2014 GSS. *Dots represent posterior means for* κ_1 *and* κ_2*, horizontal bars represent* 95% *HPDs.* κ_2 *is in the lighter shade.*

rior medians are represented by dots and 95% HPDs are represented by lines.[19] The numbers under the policies represent the 95% HPD of the proportion of people whose ideal spending point is to the right of that policy's location.

These estimates represent where each policy falls on the primary dimension structuring citizens' overall preferences for government spending. The highest estimated policy location is for foreign aid with a posterior median of 2.84, indicating that this policy is located to the right of virtually all respondents' overall preferences. Note that this does not mean that we would predict that virtually all respondents would say that the government is spending "too much" on foreign aid, but rather that the probability of saying there is "too little" spent on foreign aid is low for all respondents. The three spending areas other than foreign aid that

[19]Posterior medians, rather than means, are used for p_j because the division by β_j in Equation 3 means that for iterations where the discrimination parameter is near zero, the value of p_j becomes extremely large in magnitude, resulting in very unstable estimates. This is only consequential for policies such as space where the posterior likelihood of the parameter being near zero is somewhat large.

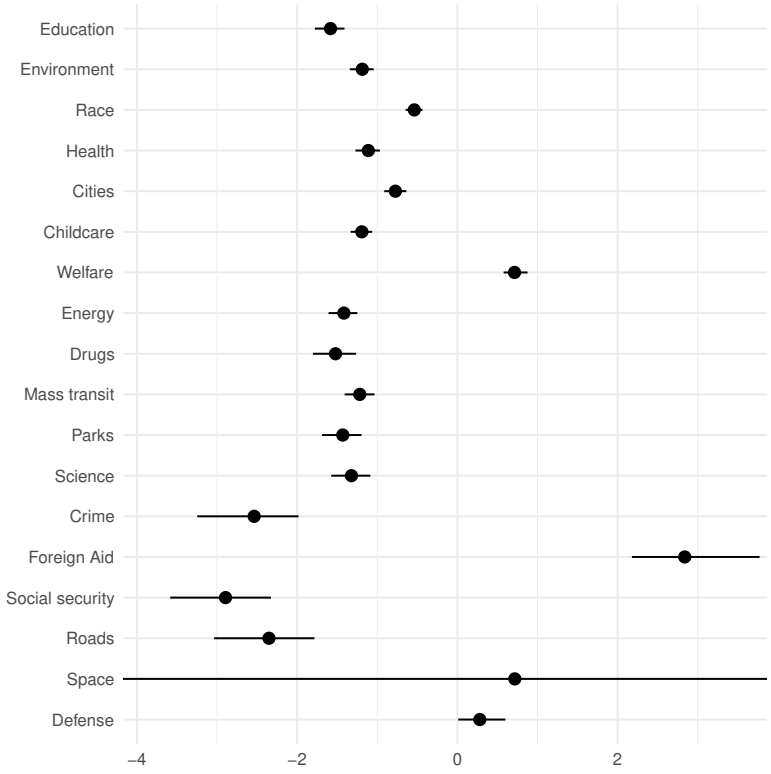


Figure 3: Policy Position Estimates, 2014 GSS. *Dots represent posterior medians for policy's location as defined in Equation* (3)*. The HPD for space's location is not fully contained in the figure—it ranges from around* -6 *to* 8*, but is not reliably estimated given that the discrimination parameter for this item is often sampled near zero. See footnote 19 for more discussion of this.*

have a posterior median above zero are defense, welfare, and space. The first two of these are estimated fairly precisely as having values only slightly above zero, while the spending level for space exploration is estimated with a huge amount of uncertainty.[20]

Most other policy positions are estimated to be quite a bit lower than zero, indicating that most respondents prefer increased spending. Social security, the policy with the lowest posterior median, is estimated to be at -2.89 with over 99% of respondents' ideal points

[20]The reason for this uncertainty becomes clear when recalling the estimated discrimination parameter for space from Figure 1. Space is the only spending area whose β_j is not estimated to be clearly to one side of zero. Because policy positions p_j are calculated by dividing the average of the two cutpoints on an issue by its discrimination parameter (Equation 3), policies for which the discrimination parameter is close to zero will have policy positions estimated very imprecisely. The logic is that if responses regarding spending levels on a specific issue, such as space here, are unrelated to respondents' overall spending preferences, then these responses do not provide information about the spending level on that specific issue.

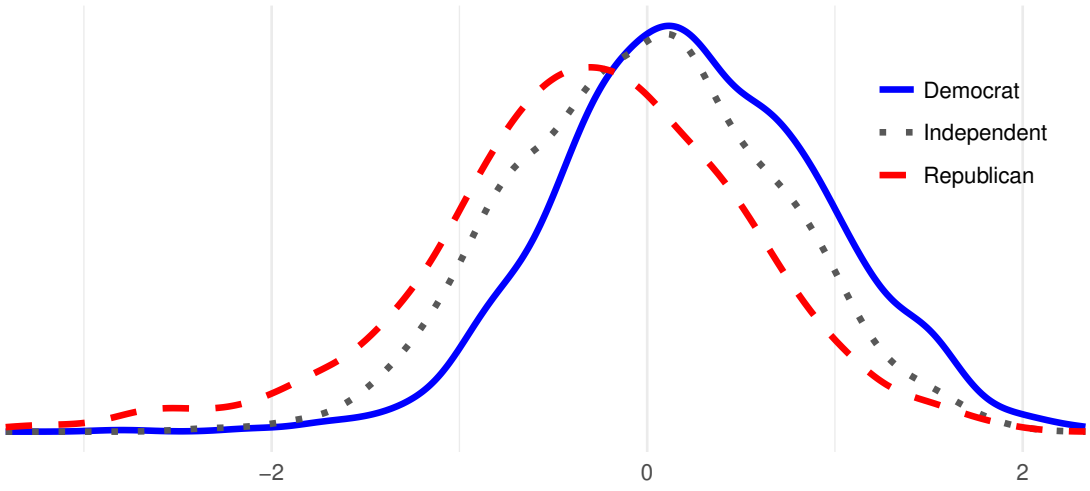
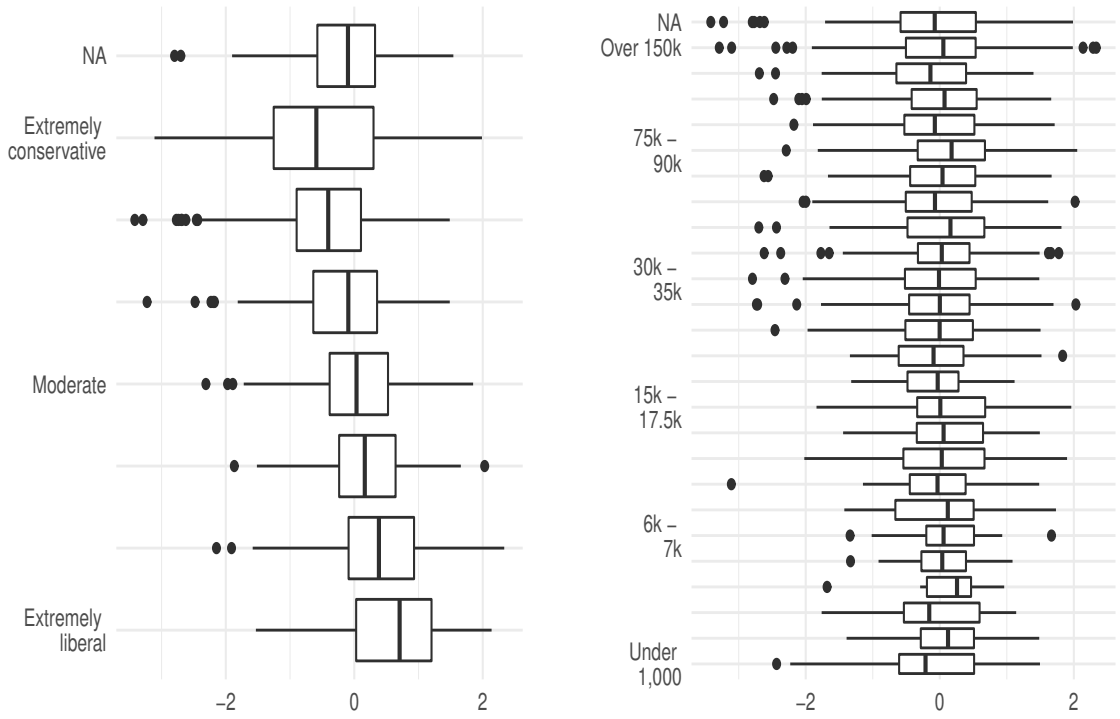


Figure 4: Spending Preferences by Party ID, 2014 GSS. *The blue solid line indicates Democrats, red dashed Republicans, and gray dotted independents.*

estimated to be to the right of the policy (the 95% HPD for the percentage of respondents with spending preferences above this policy's location is [98.9, 100]). Even policies with higher estimated positions are estimated to be lower than large majorities of respondents' preference. The estimated policy location for race, for example, is estimated to be lower than the spending preferences of 71.6% of respondents (95% HPD [67.6, 75.3]). In fact, fourteen out of the eighteen policy areas are estimated to be less than zero, meaning that for the vast majority of areas surveyed in these data, spending levels are below the average spending preference of the American public.[21] Previous work finds that a large segment of the American public is in favor of increased spending, so we view this as a positive check of the face validity of our measure.

Given that the size of government is a central divide between the platforms of the modern Democratic and Republican parties, we might expect there to exist large differences between Democratic and Republican identifiers in the American public. Surprisingly, there is an extremely high amount of overlap between the spending preferences of Democratic, Republican, and independent identifiers. Figure 4 plots the distribution of estimated spending preferences

[21] Of course, this could, and most likely would, change dramatically if we change the question as to make the tradeoffs between, for example, more spending and higher taxes more stark, as discussed above.



(a) Spending preferences by ideology (b) Spending preferences by income

Figure 5: Spending Preferences by Ideology and Income, 2014 GSS. *Boxplots show distribution of estimated spending preferences x_i by self-placed ideology (left pane) and income (right pane). The box begins at the 25th percentile and extends to the 75th percentile. The bar represents the mean. The "whiskers" extend to the most extreme value within 1.5 IQRs. Points more extreme than that are plotted as dots.*

by party identification.[22] The average spending preference among Democratic identifiers is .24 (95% HPD $[.21, .26]$) while for Republicans it is $-.32$ (95% HPD $[-.35, -.28]$). The average independent spending preference is $-.02$ (95% HPD $[-.06, .03]$). This means that not only are most spending policy positions lower than the average American's preferences, but 14 out of the 18 policies are estimated to be lower than the average Republican citizen's overall spending preferences. Finding that Republicans are in favor of increased spending on a wide range of policy issues is in line with previous research (see, for example Ellis and Stimson 2012).

[22]Leaning independents are coded as partisans following Keith et al. (1992)

Spending preferences show a slightly stronger relationship with self-placed ideology than with party identification, shown in Figure 5a. Still, the average spending spending preference among self-identified "extremely conservative" respondents is $-.54$, which is still above fifteen out of the eighteen policies included in the 2014 GSS. In fact, defense is the only policy position whose location is estimated to be between the average preferences of extreme liberals and extreme conservatives.

Income seems to be more or less uncorrelated with spending preferences. Figure 5b shows the breakdown of spending preferences by income. The distribution of spending preferences by income level is in line with other recent work on this subject (Soroka and Wlezien 2008; Ura and Ellis 2008; Branham, Soroka, and Wlezien 2017). Even though income inequality historically high and still rising (Brandolini and Smeeding 2006), overall spending preferences are strikingly similar across income levels.

Embedded in the 2014 GSS is a question-wording experiment in which half of the respondents, randomly selected, were shown alternate question wordings for eleven of the eighteen items as well as the remaining seven items for which there was only one wording. Some of these changes (e.g. "space exploration" versus "space exploration program") seem unlikely to make a difference. Others, however, are quite different such as the two wordings on welfare: "welfare" and "assistance to the poor," paralleling classic examples of question wording effects (Schuman and Presser 1981; Rasinski 1989). In subsubsection A.1.1, we analyze this, including the standard and alternate wordings for each of these items as well as the questions with only one wording, for a total of 29 items. For the majority of these alternate wordings, item parameters were all similar. Four questions, however, showed significant differences: welfare, cities, race, and crime.[23] As subsubsection A.1.1 shows, the overall results presented

[23]Welfare comes as no surprise, given the difference in question wording. One of crime's wordings is "halting the increasing crime rate," which is an odd way to phrase the question given that crime rate in the U.S. has been on the decline for a few decades. This rather odd question phrasing may be to blame for the different item parameters. It is unclear why the parameters with cities are different. Aside from these three, there were some other very minor differences with the cutpoints for two questions (drugs and foreign aid).

above are similar whether using only the standard question wordings or including alternate wordings as separate items.

This section's findings demonstrate that the mass public is not highly polarized in terms of their spending preferences. Citizens show only minor differences in spending preferences by party identification, and only slightly larger differences by self-placed ideology. There are virtually no differences in spending preferences by income level. While this lack of polarization might be expected to produce spending policies that are highly representative of the median voter, this is not the case, at least judging by the spending policy locations implied by respondents' views. For the vast majority of areas, spending policy is estimated to lie below, usually far below, the average respondent's preferences, and few of the policy locations are estimated to be close to the center of the distribution of citizen preferences. This apparent skew in representation on spending policy begs the question of whether political elites have different preferences from those of ordinary citizens, including whether they are similarly homogeneous or whether they are more polarized by party in terms of their spending preferences.

2.3 Adding Candidates' Preferences

The above results shows that policies are not where most people want them — in fact, they are oftentimes far below the median citizens' preferences. There are several possible explanations for this, one of which being that elites' spending preferences do not look like citizens' spending preferences and since political elites make policy they are simply creating policies that are more suited to their own preferences. Additionally, as we show in Figure 4, spending preferences by party are not very polarized. Is this also the case for elites, or are elites more sorted by party?

We focus here on estimating spending preferences of citizens and candidates for Congress on the same scale. This requires data that asks the same (or at least similar) questions of both sets of actors. For this, we rely on the National Political Awareness test (NPAT),

which is a survey fielded to candidates for office by the organization Project Vote Smart (see Ansolabehere, James Snyder, and III 2001; Shor and McCarty 2011; Richman 2011, for previous research using these data.)[24] Most importantly for our purposes, some waves of this survey include questions about candidates' relative spending preferences. The 1998 wave of the NPAT was chosen because it provides the best combination of candidate response rate and question overlap with the corresponding year for the GSS.[25] Specifically, candidates are asked across a range of different issues to "Indicate what levels of funding you support for the following categories." We drop all third party and independent candidates, leaving 449 major-party candidates who ran in the 1998 general election for congressional office.

Table 2 lists the specific policies candidates were asked about in the 1998 NPAT as well as the percentage breakdown of responses. The NPAT and GSS provide slightly different response options for spending questions, which we recode to correspond to obtain comparable scales.[26] The questions span a fairly wide range of policies across different issue areas.

In order to estimate the spending preferences of candidates alongside those of citizens, we must match some of the questions in the GSS and NPAT. Fortunately, the question wordings from the NPAT and GSS are very similar or identical for 7 out of 13 questions on the NPAT. We were able to match questions about spending on the arts, education, the environment, crime, space, and welfare. NPAT items on AIDS programs, housing projects, job training programs, medicaid, medicare, and student loan programs did not have any corresponding item in the GSS and therefore were not matched, but instead were included

[24]One potential objection to using NPAT data is that perhaps candidates who fill out these data are unrepresentative of the larger group. Later, we compare candidates who completed the NPAT to those who did not. Results do not indicate that NPAT respondents are dramatically different from non-respondents. In 2010 this survey was renamed the Political Courage Test.

[25]In recent years, candidate response rates have dropped precipitously. Although the 1996 NPAT was completed by more major-party candidates, it included fewer questions that matched well with GSS items (5 for the 1996 NPAT vs. 7 for the 1998 wave).

[26]We recode the "greatly increase" and "slightly increase" questions from the NPAT to correspond to the GSS response option of "too little." We recode the "eliminate," "greatly decrease," and "slightly decrease" on the NPAT to correspond to the GSS's "too much" response, and we recode NPAT responses of "maintain status" to match the GSS's "about right" response.

Table 2: Question wordings and proportion of candidates in each category for 1998 NPAT

NPAT Question	GSS match	Response percent too much	about right	too little
AIDS programs	N/A	15.2	44.4	40.5
Arts funding	`natarts`	44.0	37.7	18.4
Education K-12	`nateduc, nateducy`	9.2	18.4	72.4
Environmental programs	`natenvir, natenviy`	16.1	40.8	43.1
Foreign aid	`nataid, nataidy`	52.7	40.9	6.5
Housing projects	N/A	24.5	47.7	27.8
Job training programs	N/A	15.0	30.9	54.1
Law enforcement	`natcrimy`	5.6	30.9	63.6
Medicaid	N/A	4.9	62.5	32.6
Medicare	N/A	2.8	53.2	44.0
NASA	`natspace, natspacy`	24.2	56.7	19.1
Student loan programs	N/A	6.9	35.3	57.8
Welfare	`natfare`	46.1	45.0	8.9

as separate items that candidates responded to, but citizens did not. The second column of Table 2 indicates which GSS questions the NPAT items are combined with.

Table 3 shows the proportion of respondents in each response category of the 1998 GSS. The 1998 GSS, like the 2014 version, included two question wordings for several of its items with respondents randomized to either the standard or alternate wordings. In order to include all respondents from the 1998 GSS in the combined analyses (rather than dropping roughly half of them), we had to make decisions about whether to combine different wordings into a single item. In some cases, e.g. "space exploration program" versus "space exploration," it seems obvious that the questions can be combined. Others, however, such as "welfare" versus "assistance to the poor" seem potentially problematic. In order to assess whether it is reasonable to combine GSS question wordings, we estimated the model for the GSS spending preferences data alone, treating each question wording as a separate item. We then asked whether the parameter estimates between different wordings of the questions showed notable differences. If they did not show differences, it seems reasonable to combine

those different question wordings. We combined question wordings for seven out of the eleven items with multiple wordings.[27]

Table 3: 1998 GSS Items

Policy	GSS variable name	Response percent too much	about right	too little
Parks	natpark	6.4	57.9	35.7
Roads	natroad	10.1	49.6	40.3
Social security	natsoc	6.7	34.0	59.4
Mass transportation	natmass	10.7	53.5	35.9
Education (alt)	nateducy	6.1	19.3	74.6
Crime (alt)	natcrimy	8.1	36.5	55.4
Welfare (alt)	natwelfy	11.5	26.2	62.3
Health (alt)	nathealy	7.8	22.0	70.2
Environment (alt)	natenviy	7.9	26.6	65.5
Foreign Aid (alt)	nataidy	72.0	21.5	6.5
Defense (alt)	natarmsy	32.1	49.2	18.7
Education	nateduc	6.4	22.6	71.0
Health	natheal	5.8	25.7	68.6
Drugs (alt)	natdrugy	12.1	31.2	56.7
Space (alt)	natspacy	42.3	45.6	12.1
Crime	natcrime	7.2	29.5	63.3
Drugs	natdrugy	9.8	29.3	60.9
Environment	natenvir	8.0	29.3	62.7
Welfare	natwelf	45.4	37.8	16.8
Defense	natarms	32.2	49.3	18.6
Foreign Aid	nataid	64.2	28.7	7.1
Space	natspac	42.2	47.0	10.8
Race (alt)	natracey	25.0	44.8	30.2
Race	natrace	18.0	44.4	37.6
Big cities	natcity	13.8	34.1	52.1
Arts	natarts	22.4	52.5	25.2
Big cities (alt)	natcityy	33.2	43.8	23.0

Among the questions where wordings were not combined, only crime and welfare have corresponding NPAT items. In both of these cases, the choice of which GSS wording to match

[27]For five of these items (defense, law education, environment, health and space), the 95% HPDs for all item parameters overlapped across question wordings. Only κ_1 failed to overlap between wordings for the foreign aid item and only κ_2 failed to overlap (by .001) for the drugs item. Because of these relatively minor differences, we combined the wordings of these two questions as well. The remaining four items showed notable differences for most or all parameters and therefore were not combined.

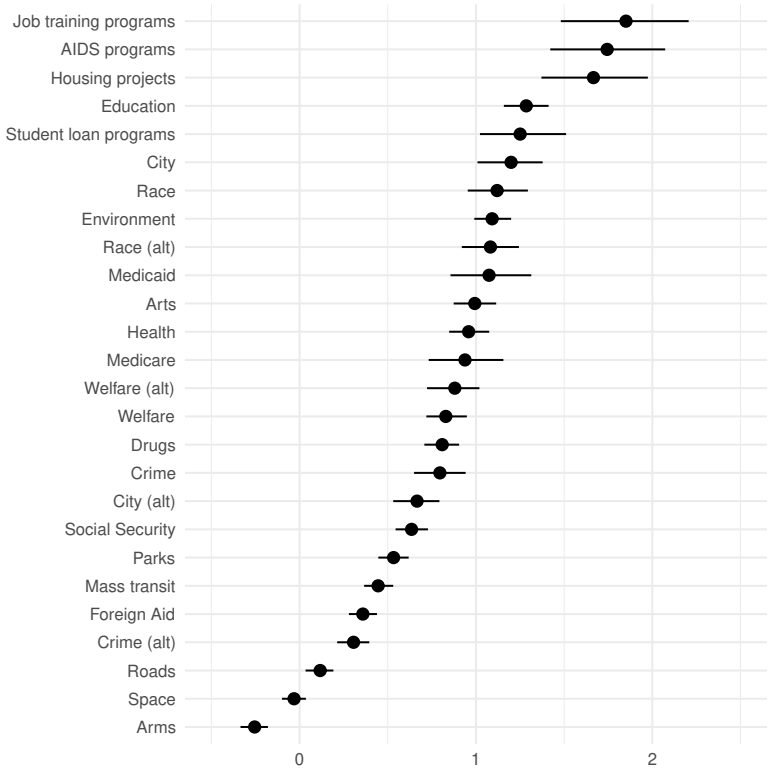


Figure 6: Discrimination Parameter Estimates, 1998 GSS & NPAT. *Dots indicate posterior means, horizontal bars represent* 95% *HPDs.*

to the NPAT question was clear because the NPAT question wordings —"welfare" and "law enforcement" — match perfectly to a GSS wording, while the other question wording for these items —"assistance to the poor" and "halting the rising crime rate" — seem quite different. In both of these cases, the remaining GSS wording was treated as a separate item, with no NPAT item matched to it.

As above, the model is identified by post-processing each iteration of the sampler to impose the restriction that spending preferences (x_i) for citizens and candidates together have mean zero and variance one and that higher values represent preferences for more spending. The sampler is run for 250,000 iterations with the first iterations 100,000 dropped and each 25th iteration thereafter saved. Examination of multiple diagnostics showed strong evidence of convergence (see subsubsection A.1.2).

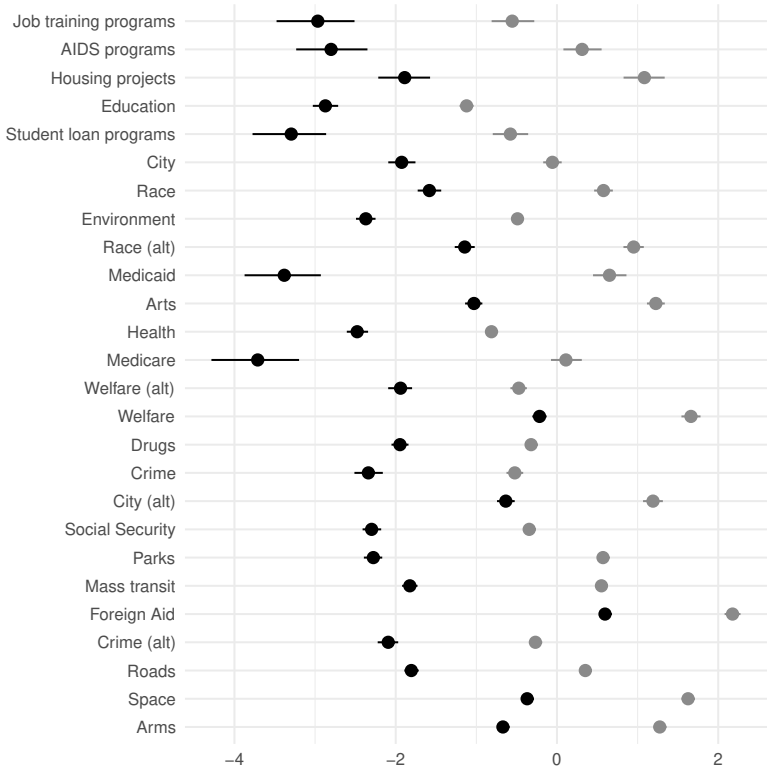


Figure 7: Cutpoint Estimates, 1998 GSS & NPAT. *Dots represent posterior means, horizontal bars indicate* 95% *HPDs.*

Figure 6 shows the estimated discrimination parameters for each item. As for the 2014 GSS, virtually all of these values are positive, indicating that higher overall spending preferences are positively associated with desire to increase spending levels. Only defense spending is estimated to clearly have a negative discrimination parameter, while the discrimination parameter for space overlaps zero, meaning that preferences for spending on space are unrelated to overall spending preferences. The cutpoints, shown in Figure 7 also show similar characteristics, generally speaking, to those from the 2014 GSS.

Figure 8 shows the estimated locations for spending policy for each item. As before, the dots represent posterior medians and the lines indicate 95% HPDs. The estimated spending policy locations from the 1998 data are mostly concentrated between negative two and zero as they were for the 2014 GSS. Only four policy areas — arts, foreign aid, welfare, and big cities (alternate version) — have estimated spending locations to the right of zero. As

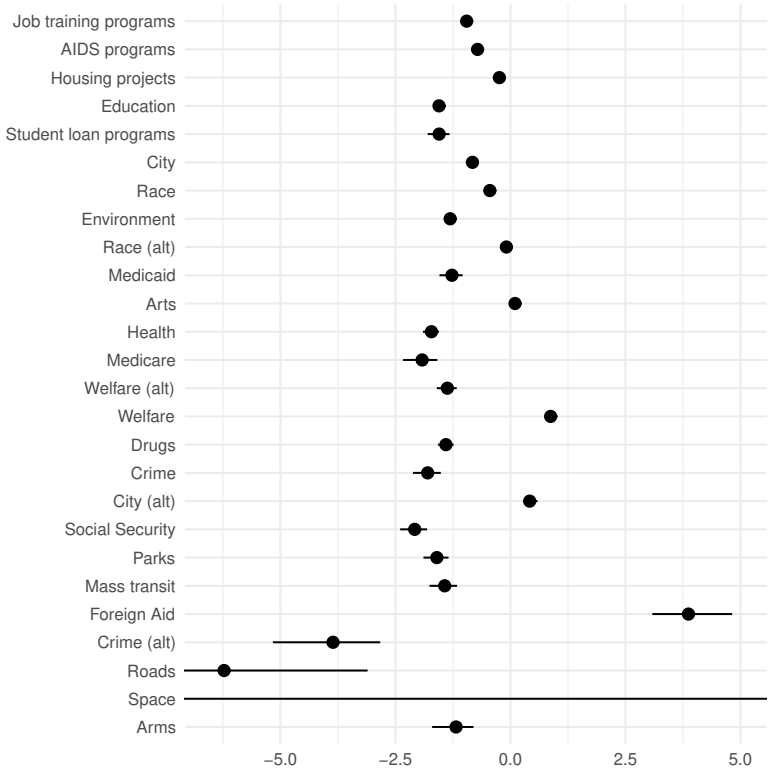
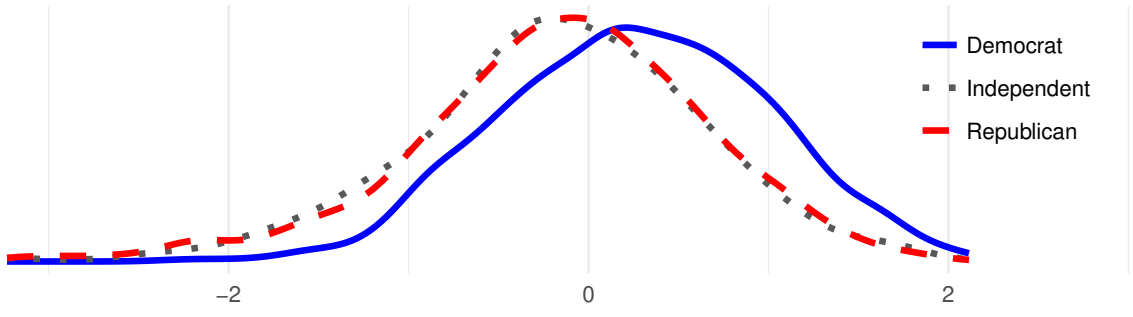


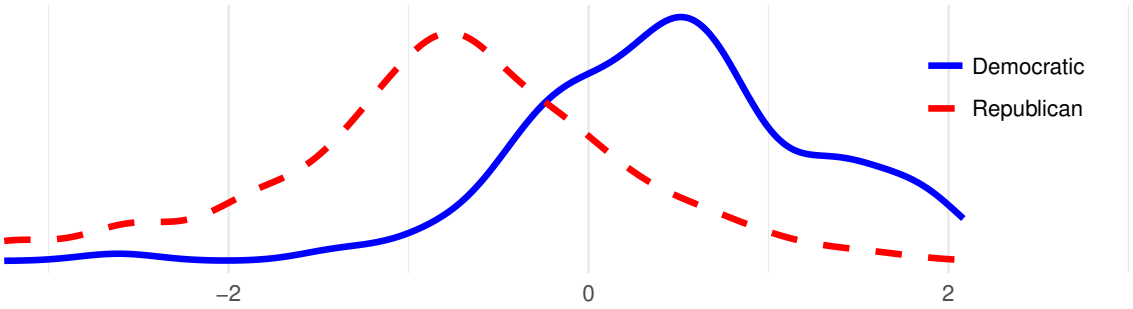
Figure 8: Policy Position Estimates, 1998 GSS & NPAT. *Dots indicate posterior medians, lines indicate* 95% *HPDs. The lower HPD bound for roads is not included, it is* −14.3. *The median for space is* −13.2 *with an HPD of* −197.6 *to* 194.1.

before, the spending location for space is estimated with a huge amount of uncertainty due to the fact that the posterior for its discrimination parameter is concentrated near zero. The largest outliers in spending policy locations are foreign aid, which is positioned far to the right, and roads and crime (alternate version), which are estimated to be far to the left.

Figure 9 shows the distribution of estimated spending preferences for congressional candidates and respondents to the GSS, separated by party. As for the 2014 GSS, citizen spending preferences show little evidence of polarization. The preferences of Democrats, independents, and Republicans differ by a small amount on average and there is a very high amount of overlap between the distributions for each of these groups. Only seven percent of the variation in spending preferences is explained by party identification.



(a) Spending preferences of individuals



(b) Spending preferences of candidates

Figure 9: Spending Preferences of Individuals and Candidates. *Panes plot density of estimated spending preferences x_i for 1998 GSS respondents (top pane) and congressional candidates from the 1998 NPAT (bottom pane) separated by partisanship from joint scaling of these two datasets*

Among congressional candidates, there is evidence of more polarization, but the spending preference distributions are still relatively similar. While thirty-five percent of the variation in candidate spending preferences is explained by party, there is still a much higher degree of overlap between Democratic and Republican candidates' spending preferences than there is between, for example, the DW-NOMINATE scores of the survey's candidates (Poole and Rosenthal 2000) or the cfscores estimated by Bonica (2013b).

More than just examining the respective shapes of citizen and candidate spending preference distributions, however, our joint scaling allows us to answer questions about the preferences of these two groups compared to each other. The overall variation in candidate spending preferences is only slightly larger than that for citizens (standard deviations of x_i

are 1.16 and .97, respectively). Perhaps even more surprisingly, the within-party variation for citizens and candidates is similar.[28]

This result contrasts with those of Bafumi and Herron (2010), who look not at spending preferences but at overall policy ideology estimated for members of Congress and the public. Bafumi and Herron find that the distribution of legislator ideology is quite bimodal, with most citizens holding ideological positions in between these two modes. Our results show that on spending preferences, at least those stated by candidates in the NPAT survey, candidates positions are much more unimodal (note that if pane (b) of Figure 9 were plotted for all candidates rather than separately by party, the distribution would look roughly normal, in contrast to Bafumi and Herron's distribution of estimated ideology in which Democratic legislators are almost completely separated from Republican legislators with very few estimated to be in the middle range near the median American).[29]

A potential objection to looking at NPAT respondents is that they are unrepresentative of the overall population of candidates. Although other research (Ansolabehere, James Snyder, and III 2001; Shor and McCarty 2011; Richman 2011) suggests this is not the case, especially when response rates were still relatively high as in the 1998 NPAT, we investigate whether non-respondents look different than candidates who respond to the NPAT.

Using data from Bonica (2013a), we were able to successfully merge nearly all of the candidates in our dataset with data including election results and other candidate information.[30] Evidence suggests that NPAT respondents and non-respondents are very similar. We ran differences in means tests between candidates who responded to the NPAT vs those who did not across several candidate characteristics. Insignificant results included cfscores ($p = 0.39$), DW-NOMINATE ($p = 0.65$), party ($p = 0.91$), and gender ($p = 0.92$).

[28]The standard deviations for Democratic and Republican candidate x_i distributions are .92 and 1.03, respectively. For respondents, these values are .91, .95, and .97 for Democrats, Independents, and Republicans, respectively

[29]Note also that estimated candidate spending preferences do not show large differences for incumbents, challengers, and open seat candidates.

[30]Only 54 major-party candidates from the 1998 NPAT did not appear in Bonica's data. Many of these are candidates who did not perform well (under 30% of the popular vote, for example).

Variables that had a statistically different mean between respondents and non-respondents included whether the candidate won or lost ($p = 0.03$, 47% of people who responded were winners vs 40% of non-responders) and the number of contributors to a candidates' campaign ($p = 0.003$, candidates who responded have more givers on average (mean= 342.2) than those who did not (mean= 229.9)). Overall, these results suggest that while there are some candidate characteristics that correlate with nonresponse, the candidates responding to the NPAT do not look dramatically different from those who did not.

We also looked at how different our spending preference estimates are from ideal points that are designed to capture overall ideology. Evidence suggests that, while correlated, spending preferences and overall ideology are different. Our point estimates are correlated with Poole and Rosenthal's DW-NOMINATE scores (based on voting behavior) at $r = -0.76$. They are correlated with Bonica's estimates (based on campaign contributions) at $r = -0.66$. Even with the relatively high correlations between these measures, they tell different stories, particularly about partisan polarization. That spending preferences are different from ideology may also explain why we find only slight polarization at the elite level. Polarization here is estimated to be minimal with regard to spending preferences, while other measures that include a mix of different issues (e.g. gay marriage, abortion, immigration, etc) show a much wider gulf between parties.

2.4 Examining Joint Scaling Assumptions

A key assumption of the joint scaling of citizen and candidate data above is that the same single-dimensional structure underlies the views of both groups. Obviously, this is implausible in an exact sense, but the important question for our purposes is whether the two groups' preferences are primarily explained by a similar enough underlying dimension to make jointly estimating their preferences on the same scale a useful and interesting exercise.

In order to assess this, we conduct three sets of analyses, each directed at a different question. First, we separately examine the variance explained by the principal components of

the GSS and NPAT datasets. This gives a sense for how much of the variation in citizens' and in candidates' spending preferences are explained by a single spending dimension. Second, we conduct an exploratory factor analysis of both of these groups' spending responses and compare the factor loadings from each one. This allows us to compare the way individual spending items (e.g. "Defense" or "Welfare") relate to the underlying spending dimension for each of these groups and whether these relationships are similar between the two groups. Finally, we relax the model estimated in subsection 2.3 to allow citizens to have different utility error variances than candidates in order to determine if this changes our central findings.

Dimensionality of NPAT and GSS Data

Figure 10 presents scree plots of the GSS and NPAT data based on a principal components analysis.[31] Both plots show a high value for the first principal component, with a relatively large decline for the second, and smaller drops after that. This "leveling out" of the scree plot after a single value is typically interpreted as evidence of a strongly single-dimensional structure for the data. Although other cutoffs (e.g. which principal components have values greater than one) are sometimes used, there are no hard and fast rules for interpreting scree plots. What these plots both show, however, is that a single spending dimension can explain a large proportion of the variance in both citizens' and candidates' responses to spending questions. Although subsequent dimensions can add explanatory power, each one contributes much less than does the first dimension. So although these datasets are not exactly single-dimensional, a single-dimensional analysis is likely to contribute quite a bit to our understanding of the spending preferences of these two groups.

[31] This analysis was done using the `princomp` function in R. Because GSS respondents were randomized on questions with two versions to either get all standard question wordings or all alternate wordings (not independent randomization across questions), we dropped all alternate wordings from this analysis. This is done since no respondents answered both a standard and an alternate wording and therefore the correlations between these items, which are needed for the principal components analysis, cannot be calculated. Results from instead dropping the standard wordings of items with two versions were very similar.

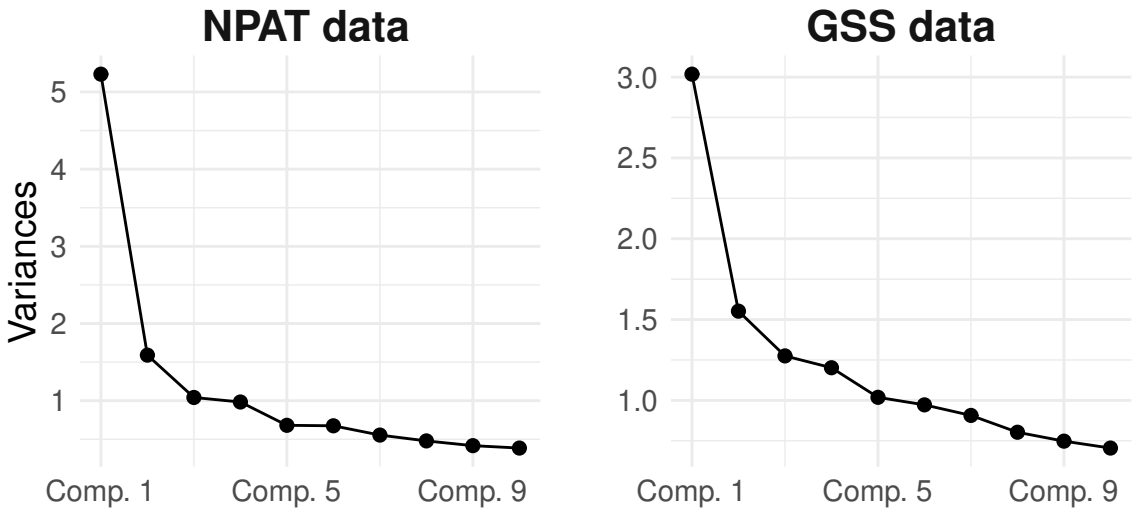


Figure 10: Scree Plots for GSS and NPAT Items. *Dots represent variance explained for the first ten principal components of 1998 GSS and NPAT data. Because of lack of overlap between questions asked, the alternate wordings for GSS questions are dropped from the analysis.*

Structure of Citizen and Candidate Spending Preferences

Another worry we may have is whether congressional candidates and individuals have differently-structured spending preferences. Jessee (2016), for example, discusses this issue in the context of estimating the policy ideologies of citizens and members of Congress. One way of examining whether the single dimensional structures underlying each of these two datasets is similar is by looking at factor loadings from factor analysis. Figure 11 shows the factor loadings from separate unidimensional factor analyses of merged items from the NPAT and GSS data (see Table 2). Although the separate analyses don't produce factor loadings that are directly comparable on the same numerical scale (for example, a value of 0.6 for an NPAT factor loading doesn't necessarily mean the same thing as the same value for a GSS factor loading), we can see whether the general pattern of loadings is similar. It is clear from Figure 11 that these loadings are indeed very similar overall, with a relatively linear relationship existing between the two sets of estimates. The items with factor loadings near zero (such as "Space" or "Defense"), which do not strongly relate to other spending items in

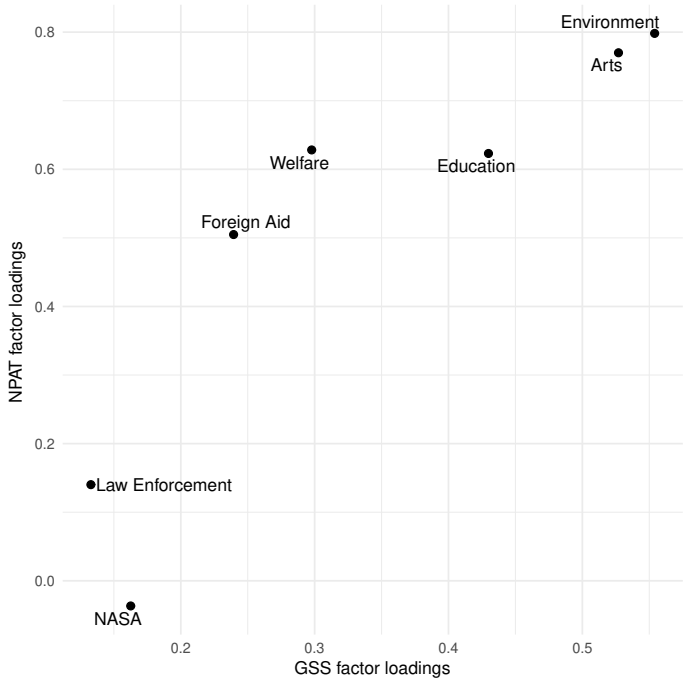


Figure 11: Factor Loadings for 1998 GSS and NPAT Items. *Dots represent factor loadings from separate factor analyses of matched items from both datasets.*

the NPAT, also tend to be the ones that have factor loadings close to zero in the GSS data. Conversely, those with larger factor loadings in the NPAT also tend to have larger factor loadings in the GSS. This suggests that the primary dimension underlying citizens' and candidates' spending preferences in these common items is structured in a similar way. To the extent that there are some differences between these two groups' preference structures, the much larger number of GSS respondents as compared to the number of NPAT candidates should make the estimated dimension closer to that for citizens than for candidates. Thus our findings can be interpreted as answering questions about how citizens perceive spending policy levels and candidates' stated spending positions.

Heteroskedastic Errors for Citizens and Candidates

As a final robustness check for our item response theory model, we estimate a model in which the variance of the latent-scale disturbance (error) term is allowed to be different for citizens

and candidates.[32] Following previous work by Jessee (2009) and Lauderdale (2010), this allows for the possibility that ordinary citizens might take positions on individual policies with more "noise" than candidates who have otherwise identical overall spending preferences. This might not be unexpected given that candidates are essentially professional position takers.[33] Although they aren't strictly comparable as noted above, the factor loadings from the NPAT and GSS data shown in Figure 11 also provide some suggestion that candidates discriminate more precisely along this spending dimension.

The results of this heteroskedastic model indeed suggest that ordinary citizens have a higher standard deviation in their position taking than do candidates. The posterior mean for respondent error standard deviation is 1.41, with a 95% HPD of $[1.31, 1.52]$. Although this is not a large difference, we may wonder whether the discrepancy between citizens and candidates affects any of the findings above. In all cases, however, estimates of the model's other parameters (the distribution of individuals' spending preferences, item discrimination parameters, item cutpoints, policy locations) are nearly identical between the homoskedastic and heteroskedastic models and all of the substantive findings above are the same regardless of which of these two models is used.

2.5 Discussion

The United States federal government spends each year an amount of money that is unfathomable for many people. Hundreds of billions of dollars are spent on defense alone. The same goes for spending on various welfare programs. In total, the U.S. federal government spends about one of every five dollars spent in the United States each year. Thus, if we are interested in studying public opinion on spending, it is important to measure spending

[32]Formally, we fix the standard deviation of the errors ε_{ij} from Equation 1 at 1 for all candidates and estimate a common standard deviation for ε_{ij} for all respondents, using a Cauchy prior with scale 1,000 truncated below zero for this parameter. The model is otherwise identical to the main one used in subsection 2.3.

[33]It is also possible that some kinds of individuals have a larger or smaller error variance. While a full, systematic examination of that possibility is outside the scope of this analysis, previous research suggests that citizens actually respond quite similarly to policy regardless of their level of political sophistication (Enns and Kellstedt 2008).

preferences correctly. In this paper, we develop an item response model that allows us to scale multiple questions about spending preferences together in order to measure individuals' overall spending preferences. We find that people and candidates generally prefer increased spending on many, but not all, policy areas, consistent with other research in this area. We also find that party polarization in the public is very low, nearly nonexistent. Candidates show more polarization than do citizens, but they are not nearly as polarized on spending as they are on measures of overall ideology.

Our model has several advantages over previous attempts at scaling spending preferences. Whereas some previous papers construct an additive index (Ura and Ellis 2012, for example) or make assumptions about which items scale and which do not (Jacoby 2000), our method allows issues to be related to overall spending preferences at different strengths. We show that it is in fact the case that some spending on some issues (like education) is very closely related to overall spending preferences, whereas spending on other issues (like space) is not. Furthermore, this method is flexible enough to indicate whether an issue (defense spending, in our case) is actually negatively related to overall spending preferences.

The flexibility of the model allows us to jointly scale various actors as long as they answer the same questions. In our analysis, we concentrated on the public and congressional candidates, but this could be extended to, for example, interest groups, so long as they answer survey questions. Placing interest groups in the same space would, subject to some assumptions, allow researchers to compare spending preferences of these groups with their members and each other. Additionally, our model is flexible enough to apply across different years and different question sets. A final advantage of this method is that it generates measures of uncertainty, something not possible with a simpler indexing method.

We take advantage of this to include candidates' spending preferences as well as individuals' in order to study polarization at the elite and mass level. We find that citizens exhibit very low levels of polarization by partisanship. Congressional candidates are more polarized than citizens, but their level of polarization on spending preferences is quite a bit

lower than what is seen in most general policy-based ideology estimates. This suggests that, while voters often face choices in terms of overall ideology between Democratic candidates who are much more liberal and Republican candidates who are much more conservative than their own views as shown by Bafumi and Herron (2010), the choices between candidates in terms of spending tend to be less stark.

Our model also includes a point at which individuals who respond "about right" are estimated to be indifferent over increasing or decreasing spending.[34] In other words, individuals are acting as if policy is located there. According to our analysis there is strong sentiment among both citizens and Democratic candidates for higher levels of spending than currently exist in most areas. Republican candidates also usually prefer more spending, though less strongly than Democratic candidates. In a sense this represents a puzzle — if most citizens and most candidates from both parties would prefer to see spending in an area increased, why doesn't it happen? The likely explanation comes from the common tendency to want have one's cake and eat it too. Voters typically desire, and candidates often promise, more spending, lower taxes, and smaller deficits despite the mathematical impossibility of many of these claims (see also Citrin 1979). In light of this, one might dismiss these results as simply reflecting "cheap talk" by candidates about what policies they would support if elected. But the fact that candidates find it advantageous to support these types of policies highlights the importance of studying the spending positions of candidates and the spending preferences of citizens.

One limitation of our modeling strategy compared to previous strategies is that it is more difficult to make comparisons across time. For example, we cannot estimate the model across years nor directly compare ideal points across years without making implausible assumptions.[35] So we cannot directly compare how our model relates to the "mood" measure

[34]In fact, the model is general enough to be applied to many situations with an ordered trichotomous response. For example, survey questions with the common "like", "neutral", "dislike" response option would also be good fits for this model, assuming multiple questions that all rely on some latent trait.

[35]For example, we could assume that either the distribution of ideal points or the locations of spending policies are constant across time, both of which seem problematic.

developed by Stimson (1991), for example. What we can compare with some additional assumptions are differences within years over time. So, for example, if we were interested in comparing the difference between Democratic and Republican spending preferences over time using our modeling strategy, we could estimate the model separately for each year, compute the average distance between Democrats and Republicans, and compare these numbers over years. This would give us insight into the degree to which the parties are polarized with regard to spending preferences and how that polarization varies over time. Similar methods could be used to study various other phenomena with regard to spending preferences such as the differences between candidates and voters, or winning candidates and losing candidates. Finally, our approach could be used to assess the degree to which the estimated policy locations respond to significant changes in spending levels that result from major legislation or other things.

3 Partisan Feedback

Research by political scientists demonstrates that public policy responds to public opinion.[36] These policy changes in turn create a feedback loop where the public eases its current demands when governments move in the direction of their previous ones (for examples, see Wlezien 1995; Erikson, MacKuen, and Stimson 2002; Soroka and Wlezien 2010). This has important implications for the role of public opinion in democracies, as it indicates that the public responds to policy changes, and that policy changes in response to public opinion.

However, previous studies have made an assumption that may not be warranted. They assume that all members of the public react to policy changes in parallel. Given the consistent findings of "parallel publics" by Page and Shapiro (1992) and others, this assumption may be reasonable. However, assuming that partisans react similarly to policy change runs in the face of considerable research showing that partisanship colors perceptions and preferences (Angus Campbell et al. 1960; Erikson, MacKuen, and Stimson 2002; Soroka and Wlezien 2008; Enns and Kellstedt 2008; Johnson and Kellstedt 2013; Gonthier 2016), as well as other research that argues that we are seeing a steady increase in polarization in the American public (Abramowitz and Saunders 2008; Webster and Abramowitz 2017; though see Fiorina, Abrams, and Pope 2008; Fiorina and Abrams 2008).

In this paper, I identify three specific mechanisms that should all lead to partisan differences in policy feedback. Specifically, in comparison to supports of the non-incumbent party, supporters of the incumbent party (1) may not monitor government action as carefully, (2) may process information differently, and (3) may change their preferences to align with government policy. All three predict that responsiveness is heterogeneous, with supporters of the incumbent party being less responsive. I refer to this difference as "partisan feedback."

In the next section, I briefly review what we know about policy feedback, and then explain how each of the three mechanisms impact specific elements on the model, yielding a

[36]This chapter is a version of (Branham 2018), published by *Public Opinion Quarterly*. The version of record is online.

testable hypothesis. I then qualify this hypothesis further, by suggesting that it will be more evident in highly polarized issues. I then test these expectations using opinion and policy data from the United States from 1973 to 2014. I test a model of partisan feedback at the individual level across eight issue areas. Analysis reveals that (1) the thermostatic model works well at the individual level as well as the aggregate level (2) partisan feedback does occur (3) partisan feedback tends to occur in issue areas with relatively large disagreement across partisan lines.

3.1 Opinion Responsiveness

Changes in public policy can produce changes in public opinion. Sometimes, we observe positive feedback; that is, the more policy people get, the more they want (Pacheco 2013a). Individuals' reactions to policy can also depend on context. For example, individuals' support for immigration depends on policy (the amount of immigration), but that appears to be conditional on context (the level of segregation in their area; Rocha and Espino 2009). Other times, the public does not respond at all to policy change (Soss and Schram 2007; Wlezien 2016). Policies can also affect political behavior, not just political opinions (for a review of recent literature, see Andrea Campbell 2012).

The thermostatic model is one model of how public opinion can respond to changes in policy. It asserts that increases in policy are associated with decreases in demand for more of that policy. In other words, if government increases the amount of policy, then fewer people prefer further increases of that policy. This relationship has been studied extensively at the national level in the US (Wlezien 1995; Erikson, MacKuen, and Stimson 2002; Ellis and Faricy 2011), the U.S. state level (Pacheco 2013b), as well as cross-nationally (Soroka and Wlezien 2010).

Studying the opinion-policy loop requires measurements of people's preferences. We usually ask people their *relative preferences* (for more or less policy) rather than their *absolute preferences* (an amount of policy) due to the complicated nature of decisions and choices

in politics. For example, while naming an exact dollar amount they want the government to spend on national defense is probably outside the capacity of most people, giving a relative preference — whether they prefer more or less than what the government is spending currently — is a much less demanding task. These survey questions generally ask people whether they think we're spending too much, about the right amount, or too little across several different policy areas.

I follow previous literature in conceptualizing individuals' relative preferences R for more or less spending as being the difference between their absolute preference P^* and where they think policy P currently is. This relationship is captured in Equation 4.

$$R = P^* - P \tag{4}$$

Relative preferences (R) depend on two things: both what an individuals' preferred policy position is (P^*), as well as where policy is now (P). This logic is at the heart of the thermostatic model. Given absolute preferences, if policy changes, then relative preferences should change in the opposite direction. In other words, if spending goes up (P increases) and absolute preferences do not change (P^* remains constant), then an individual should be more likely to say that there is too much spending (R will decrease).

If we are interested in the effect of policy change on relative preferences, we can model R as a function of P:

$$R_{ij} = \beta_0 + \beta_1 P_{ij} + \beta W_{ij} + \varepsilon_{ij} \tag{5}$$

where R represents individual i's relative opinion (see Equation 4) for more or less spending on policy j. P represents the dollar amount spent and W represents a vector of variables meant to capture P^* since P^* is not directly observable.[37] Therefore, β_1 gives us information about the effect of policy on opinion. Negative values are evidence that as spending on a policy increases, people are less likely to prefer additional spending.

[37]The β term associated with W is a vector of coefficients.

3.2 The Role of Partisanship

Partisanship is oftentimes a moderating variable in the kinds of relationships political scientists tend to study. People tend to form their partisan attachments young, and to interpret a lot of information through partisan "lenses" (Angus Campbell et al. 1960). Partisanship affects other areas of life as well, such as happiness (Pierce, Rogers, and Jason Snyder 2016), trust in government (Keele 2005), and preference formation (Mullinix 2016; Lerman and McCabe 2017). We also know that partisanship has a causal influence on people's political preferencecs (Gerber, Huber, and Washington 2010).

What we already know about partisanship suggests that partisans should react differently to policy changes. However, previous work on thermostatic feedback finds only limited differences across partisan groups. Soroka and Wlezien (2010) find that Democrats, Independents, and Republicans (as well as partisan groups in Canada and the UK) respond very similarly to policy change. Ura and Ellis (2012) also find that partisan "mood" tends to move in parallel over time, but may be polarizing slightly in recent years. However, in this paper I argue that we should expect differences across partisan groups based not only on an individual's party, but also party control of government. We know, for example, that party control of government influences individuals" trust of particular institutions (Gershtenson, Ladewig, and Plane 2006). This has important implications for opinion change. If a person's fellow partisans have control over the government, we should see *less* responsiveness to policy changes. And, inversely, if the opposite party controls the government, we expect those people's opinions to be *more* responsive to policy change.

There are several likely mechanisms at work here. If we conceptualize relative preferences R as the difference between absolute preferences P^* and policy P (as in Equation 4), then differences in the thermostatic model must arise from either differences in changes in policy or changes in preferences. I discuss both of these possibilities in turn, starting with changes in policy.

3.2.1 Explanation 1: Changes in Policy

One possibility is that partisans see P — policy — differently from one another. Of course, in a certain sense this makes no sense; there is a single dollar amount spent by the U.S. on defense each year. We do know, however, that in other domains where there is a correct answer, partisan differences can emerge (Bartels 2002; Gerber and Huber 2010). So when we discuss differences in policy, we are really talking about differences in people's beliefs about where policy is. Phrased alternatively, partisan groups have differing beliefs about the magnitude and/or direction of policy change. In this section, I propose two different mechanisms that could be at work here: differences in monitoring and differences in information processing.

Partisan groups may monitor the government's actions more closely if the government is controlled by the opposite party. In other words, these groups are more attentive to changes in P. The logic here is simple. Once your party has control of government, you can relax — your job is done and you trust your fellow partisans in government to get the job done (Keele 2005; Gershtenson, Ladewig, and Plane 2006). Conversely, if your party loses and is out of government, you may feel the need to increase your watchfulness of what the government is doing.

If this is the case, then "in-partisans" (partisans whose party controls government) and "out-partisans" may update their beliefs about the location of P differently from one another. In other words, they can differ in how they update their beliefs about the magnitude and/or direction of change in P. Since policy today (P_t) is simply the sum of yesterday's policy (P_{t-1}) and whatever changed (ΔP_t) if people fail to observe ΔP_t then they will not adjust their opinions thermostatically.[38] While total failure to pay attention to policy change is an extreme case, especially if the issue is at least somewhat salient, it could be the case that in-partisans may be less observant of governmental actions on average than out-partisans.

[38] Unless they happen to update their absolute preferences P^* in the opposite direction of policy change.

If that is the case, we will observe in-partisans as behaving less thermostatically than out-partisans.

Differences in monitoring (in other words, the reception of information about policy change) can produce differences in thermostatic feedback. However, another plausible mechanism is that the *same* information may be considered differently by partisan groups. Partisans may disagree on the magnitude (or direction) of policy change; Republicans in the electorate may view policy changes by Democrats in government as being large, whereas Democrats in the electorate may view the same change as being small.[39] These differing reactions to perceived changes are well-documented and studied in the literature (for example Bartels 2002; Bullock 2009; Bullock et al. 2015). Put alternatively, partisans may give the government more leeway to change policy when it is controlled by their party. If it is the case that one group views a policy change as larger in magnitude than another group, then the first will behave more thermostatically. The result of this is that partisan groups under-react to policy change from their own party and overreact to policy change from the other party.

3.2.2 Explanation 2: Changes in Absolute Preferences

Because relative preferences contain information about absolute preferences *and* (belief about) policy, it is possible that even if partisans update their beliefs about policy identically, they can still show differences across partisan lines if they change their absolute preferences (P^*) differently. We know that party greatly affects political preferences (Angus Campbell et al. 1960; Cohen 2003; Gerber, Huber, and Washington 2010; Colombo and Kriesi 2016).

In particular, we know that sometimes partisans update their preferences to be more in line with what their partisan elites are signaling (Cohen 2003; Ray 2003; Lenz 2009; Brader and Tucker 2012). In other words, partisans in the electorate cue take from their party elite.

[39] Of course, there is a "correct" answer to the spending change, since we can measure this in dollar terms. However, reasonable people can still disagree over whether a given change is "small" or "large."

Furthermore, the literature on partisan motivated reasoning suggests that partisans may support (or oppose) policies that they would otherwise oppose (or support) based on which party is offering the policy (Bolsen, Druckman, and Cook 2013). And, in fact, signals from the opposing party may in fact be more powerful than signals from partisans' own parties (Goren, Federico, and Kittilson 2009).

Given this, we might expect that individuals' responses to policy spending changes may depend on their partisanship. If partisans are more likely to take their party's position as their own, then they should move their absolute preferences (P^*) to be more in line with the policies that their party is proposing. Conversely, out-partisans may be more responsive than they would be otherwise as they shift their absolute preferences away from what the other party is doing. To be clear, individuals receive (and may react to) cues from both parties as these parties either justify (if in power) or criticize (if in opposition) spending (Goren, Federico, and Kittilson 2009).

In the context of the model at hand, partisans could cue take from the direction of spending. If a Democrat-controlled government spends more on policy X, then Democrats in the electorate could adjust their preferred level of policy X up. At the same time, Republicans in the electorate may adjust their preferred level of spending on policy X down. If that is what happens, then Democrats would appear to behave less thermostatically than Republicans.

To see this, consider our conceptualization of R, Equation 4. Relative preferences are a function of absolute preferences and policy. If both P^* (on the left side, as a constituent part of R) and P (on the right hand side) move in tandem from $t-1$ to t, then this will force β_1 towards zero, all else equal. In other words, if in-partisans move their absolute preferences in the same direction as policy change, we will find evidence of little or no thermostatic feedback. Conversely, should out-partisans move their absolute preferences in the opposite direction of policy change, then we should find evidence of greater thermostatic feedback.

3.2.3 Partisan feedback

If individuals' reactions to policy changes depend on whether or not their party is in control of government, as suggested above, we need to modify Equation 5 to account for this:

$$R_{ij} = \beta_0 + \beta_1 P_{ij} + \beta_2 I_{ij} + \beta_3 PI_{ij} + \beta W_{ij} + \varepsilon_{ij} \tag{6}$$

where the variables are the same as above. We have added a new term, however. I represents whether they are "in-partisans," and PI is the interaction of policy P and I. Thus, for in-partisans, their responsiveness to policy change is governed by $\beta_1+\beta_3$. Responsiveness of out-partisans, on the other hand, is simply β_1. Recall that if individuals behave thermostatically, then β_1 will be negative. Therefore, if in-partisans react less strongly to policy change, β_3 will be positive (making the overall effect of P on R less negative).

3.2.4 Considering Issue Characteristics

Of course, not all issues are the same. One issue-specific characteristics that may affect partisan feedback is the extent to which there is disagreement across partisan groups. We expect to see greater differences in thermostatic behavior when partisans have different opinions. On some issues, there are smaller disagreements across party lines. On other issues, there is much larger disagreement. Areas with large disagreement across partisan lines seem to be more likely to display partisan feedback, as it is these areas where partisans think less like each other.

Let us investigate the degree to which partisans agree or disagree with each other.[40] In order to look at partisan disagreement, we can calculate net support for additional spending by each party[41] To do this, we simply take the proportion of people who want more spending and subtract the proportion of people who indicate they prefer less spending. So the score for one group can range between -100 (if everyone prefers less spending) and 100 (if everyone

[40]The data are described in more detail in subsection 3.3, below.

[41]For additional analysis of this measure, see Wlezien (1995) and Soroka and Wlezien (2010).

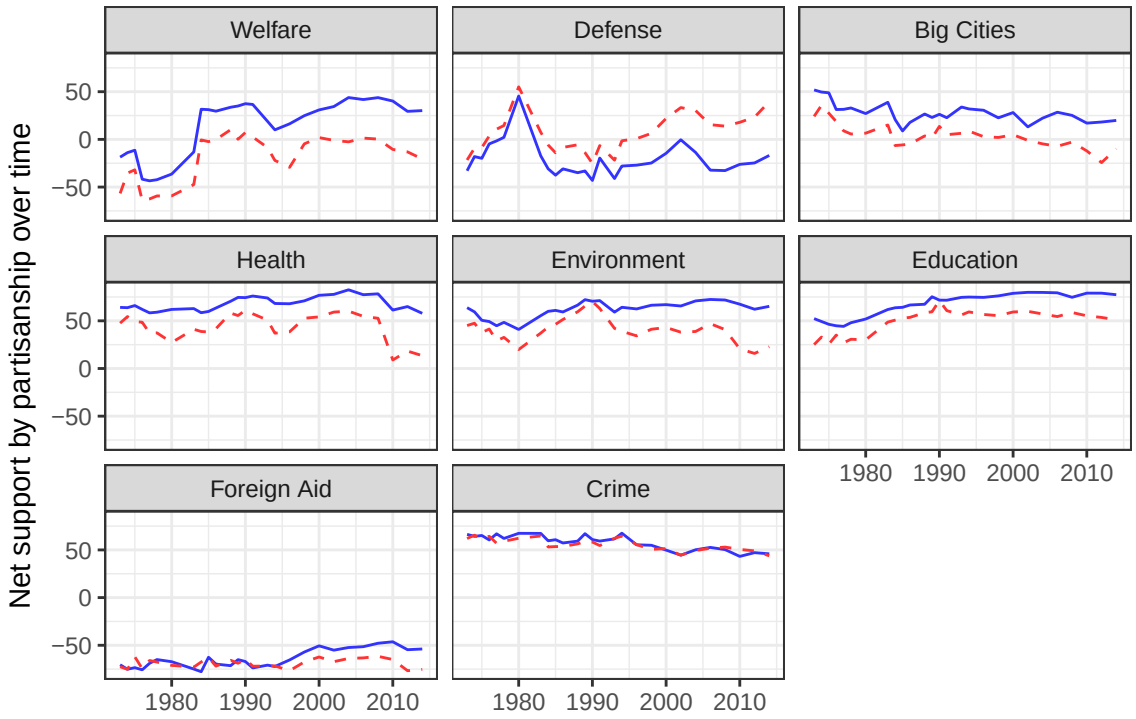


Figure 12: Net support by partisanship and year across issues. Net support is calculated by taking the percent of each group who prefer more spending minus the percent who prefer less. Democratic net support is represented by the solid blue line and Republican net support is represented by the dashed red line.

prefers more spending).[42] Figure 12 plots net support by partisanship over time. Democrats are represented by the solid blue line and Republican net support by the dashed red line.

Several things are apparent from this figure. First is that there is clear partisan disagreement on many issues; the two lines are only rarely at the same point at the same time for any issue, with the exception of crime. Second is that Republican net support is lower than Democrats on average in all issue areas save spending on defense. Third is that the two groups do trend together. When net support among Republicans rises (or falls), net support among Democrats tends to rise (or fall) as well. Finally, although it is difficult to tell with any degree of precision just by looking at Figure 12, we might suspect that in recent years

[42]Statistics in this section combine data from two question wordings so as to be consistent with the rest of the paper. See footnote 45 for more details.

Table 4: Disagreement and salience by issue area

Issue	Mean disagree	Min disagree	Max disagree	NYT salience	MIP salience
Welfare	32.87	17.03 (1978)	50.77 (2010)	0.55	5.03
Defense	26.33	8.26 (1976)	56.40 (2014)	3.48	8.63
Health	23.67	9.34 (1974)	52.36 (2010)	3.68	6.33
Big cities	23.63	12.65 (1990)	42.56 (2012)	1.63	0.03
Environment	20.53	0.29 (1990)	46.83 (2010)	1.60	1.12
Education	17.34	0.37 (1990)	27.22 (1973)	2.52	2.57
Foreign Aid	7.36	0.11 (1974)	22.05 (2012)	NA	NA
Crime	3.5	0.05 (2002)	9.90 (1977)	6.28	9.30

Measures of disagreement are constructed by taking the absolute value of the difference in net support by each year. In all issue areas except defense, Republican net support is lower on average than Democratic net support. The NYT measure is a measure of how often each issue appears on the front page. MIP measures the average percent of respondents listing each issue area as the most important problem. Data for the NYT and MIP are from the Policy Agendas Project.

the gap in net support between the two parties has increased for many of the policies at hand. This is in line with what Ura and Ellis (2012) find.

However, if we are interested in how much partisans agree or disagree on issues, we can construct a simpler measure by taking the absolute value of the difference of net support between the two groups. That is, we subtract the net support of Republicans from the net support of Democrats, take the absolute value, and average across years. Table 4 presents averages and extrema for this measure of partisan disagreement.

The magnitude of net support disagreement varies quite a bit across issues. Support for additional spending on foreign aid and crime appears to be relatively similar across partisan lines. This means that the average Democrat is only slightly more in favor of increased spending than the average Republican. Other issue areas exhibit much larger differences; in particular, welfare, defense, health, and big cities exhibit the largest differences by party, while the environment and education exhibit smaller, but still large differences. Thus, we might expect to find the largest differences in thermostatic feedback across partisan groups in these four issue areas. However, we must also take into account another issue-specific characteristic: salience.

Issues that are not salient are much less likely to exhibit thermostatic behavior; the public simply isn't paying much attention to those issues. If the public does not know much about an issue, then there is little reason to suspect that partisans react differently from each other. There are at least two common ways of constructing a measure of salience. The most common measure relies on the so-called "most important problem" questions regularly asked by polling organizations, which contain information about both importance and the extent to which an issue area is a problem (Wlezien 2005). Another way of attempting to measure salience is through counting how often the issue area appears in newspapers like the New York Times. Averages of both of these measures are shown in Table 4. Defense, health, crime, and education are among the most salient issues according to both measures. The MIP measure suggests that welfare should also be salient, though the NYT measure does not. Given that welfare is a common issue in campaign rhetoric, it seems like the MIP measure may be more reliable here. The environment and big cities are not rated as salient by either measure. Although neither asked about foreign aid, we know from previous work that we should not expect to observe thermostatic feedback in foreign aid because it is a low-salience issue where opinions are unrelated to policy status quo (Soroka and Wlezien 2010; Wlezien 2016).

Recall that theoretically, we expect to see partisan feedback on issues with relatively large disagreement across partisan lines. If partisans react differently to policy change on salient, high-disagreement issues, then we should expect to see differences in thermostatic responsiveness in welfare, defense, and health. We may also see partisan feedback in the environment and education, where there appears to be large disagreement, but it may not be as salient. We do not expect to see partisan feedback in big cities, foreign aid, or crime.[43]

[43]In foreign aid and crime, partisans largely agree. big cities and foreign aid are low-salience issues.

3.3 Data & Measurement

In order to estimate Equation 6, we need data on political opinions, partisanship, sociodemographic information, and spending on public policy. For opinion, partisanship, and sociodemocraphic information, I use data from the 1973–2014 General Social Survey, run by NORC at the University of Chicago. The survey aims to collect a nationally representative sample of U.S. adults and ran almost yearly from 1973–1994 then biannually afterward. Dropping independents from the sample means that the analysis relies on 46,115 observations.[44]

For spending data, I use the *Historical Tables* from the Office of Management and Budget. The OMB reports spending data according to function and subfunction. So, for example, under function "350 — Agriculture" we can find subfunctions "351 — Farm income stabilization" and "352 — Agriculture research and services." I follow the methods employed by Soroka and Wlezien (2010, page 184) in order to aggregate spending data to the policy areas that the GSS asks about. Areas common to both the GSS and *Historical Tables* include welfare, big cities, health, the environment, education, foreign aid, crime, and defense. All dollar amounts are inflation-adjusted tens of billions of 2000 dollars.

The W term represents a host of variables meant to capture change in P^*. We can think about these in terms of individual-level variables meant to capture variation across individuals and year-level variables meant to capture variation across years. In this analysis, individual-level variables included are sex, race, education, region, and which question version the respondent received.[45] For defense, two other variables are added. One captures how the

[44]Following Keith et al. (1992), I code partisan "leaners" as partisans, only dropping "true" independents. A separate analysis on independents shows that independents do not react differently to policy change under a Republican or a Democrat, with the exception of defense spending, where they appear to respond more strongly to spending by Republicans.

[45]For the relative preference questions, the GSS embeds a question wording experiment. Half of respondents receive one version of the question and half another. For example, half of respondents are asked about whether we spend too little, too much, or about the right amount on "the military, armaments, and defense," whereas the other half are asked about "national defense." Some of these question wordings (like defense) seem to make little difference. Others, (such as asking about "welfare" versus "assistance to the poor") make quite a large difference. In order to include as many respondents as possible, I merge responses to both

respondent feels towards Russia, which has been found in previous work to be a good proxy for the "hotness" of the Cold War (and thus related to spending preferences for defense; Wlezien 1995).[46] The second variable is an attempt to account for a potential increase in absolute preferences for defense spending associated with the attacks on September 11th. It is coded as an indicator variable that is a 1 between 2001 and 2010 and a 0 otherwise.[47] Year-level variables included in the model are a counter, which allows for a linear trend for increasing (or decreasing) absolute preferences over time.[48]

Measuring I is tricky because in the United States, it is rarely the case that one party "controls" government. The separation of elections of the House, Senate, and Presidency means that one party usually controls at least one of those three policymaking institutions. For this article, I measure I as an indicator variable for whether or not a person is of the same party as the president. In U.S. politics, the president (and their party) tend to get credit for when the country is doing well and blamed when it is not, even if they have little to do with it (see, for example MacKuen, Erikson, and Stimson 1992). Let us now turn to the analysis.

3.4 Analysis

In order to estimate differences in partisan responsiveness, we will estimate Equation 6. Responsiveness of out-partisans is represented by β_1 (the coefficient associated with P, since I is zero for out-partisans) and in-partisan responsiveness is governed by $\beta_1 + \beta_3$. The hypothesis is that for salient issue areas with disagreement across partisan lines (welfare, health, and defense), β_3 will be positive, indicating that in-partisans react less strongly to policy changes than out-partisans. Conversely, for low-salience areas, or where partisans do

the question wordings together and include an indicator variable for which wording the respondent received, which allows the mean of the dependent variable to vary based on question wording.

[46]The GSS stopped asking this question after 1994, so observations after 1994 are set to the mean level in 1994.

[47]Coding it as a 1 for all years post 2001 instead of reverting back to a 0 does not change the results.

[48]An additional analysis was run including the square of the counter, which would allow for the effect of time to curve. This variable was found to be estimated very close to zero for all models. It also did not affect the substantive interpretation of the results; in the interest of parsimony, it was excluded.

not disagree much (big cities, foreign aid, and crime), β_3 should be near zero, indicating that out-partisans and in-partisans react in much the same way to policy change (which could include no reaction at all). I do not have strong expectations either way about whether we should observe partisan feedback in education and the environment. These are medium disagreement issues that are also of middling salience.

As the dependent variable is trichotomous with ordered outcomes ("too little," "about right," "too much"), I use an ordered probit model to estimate Equation 6 separately for each of the eight policy areas. I estimate the regressions in a Bayesian framework using improper uniform priors on the unknown parameters.[49] Substantive effects from ordered probit models are difficult to see looking just at the coefficients, and with interaction terms in the model, the task becomes much more difficult (Ai and Norton 2003). For these reasons, I focus on interpreting predicted probabilities rather than the coefficients themselves. Point estimates for the coefficients are reported in subsubsection A.2.2.

Figure 13 presents predicted probabilities from the model.[50] In-partisans — those whose party controls government — are represented by the solid blue-green line whereas out-partisans are the dashed orange line. What can we learn from taking into account partisan status?

With only a few exceptions, the trend of all of the predicted probabilities representing people indicating they think we're spending "too little" have a negative slope. In other words, as spending on most policies increases, the probability of individuals indicating that

[49]Bayesian estimation makes the calculation of statistical uncertainty associated with the predicted probability straightforward (see Ai and Norton 2003, for a discussion of the difficulty of calculating the effects of interaction terms in nonlinear models). The samplers were run for 10,000 iterations, the first 1,000 of which were discarded as burn-in. Analyses to ensure that the samplers were well-behaved are available in subsubsection A.2.4.

[50]The predicted probability of saying "too much" or "about right" is omitted from this figure for ease of interpretation. Predicted probabilities for all three answer choices are included in Figure 21 in subsubsection A.2.3. In order to obtain predicted probabilities from the model, we need to specify values for all the variables included in the model. For the spending values (the horizontal axis), the smallest value is the minimum spending level observed and the largest value is the maximum observed spending value in each policy area. The other variables are set so that these predictions represent an individual who did not answer the "alternative" question wording, and is a white female with a high school education from the East North Central region of the country in 2014. For defense, the value for "Russia" was set at its observed mean.

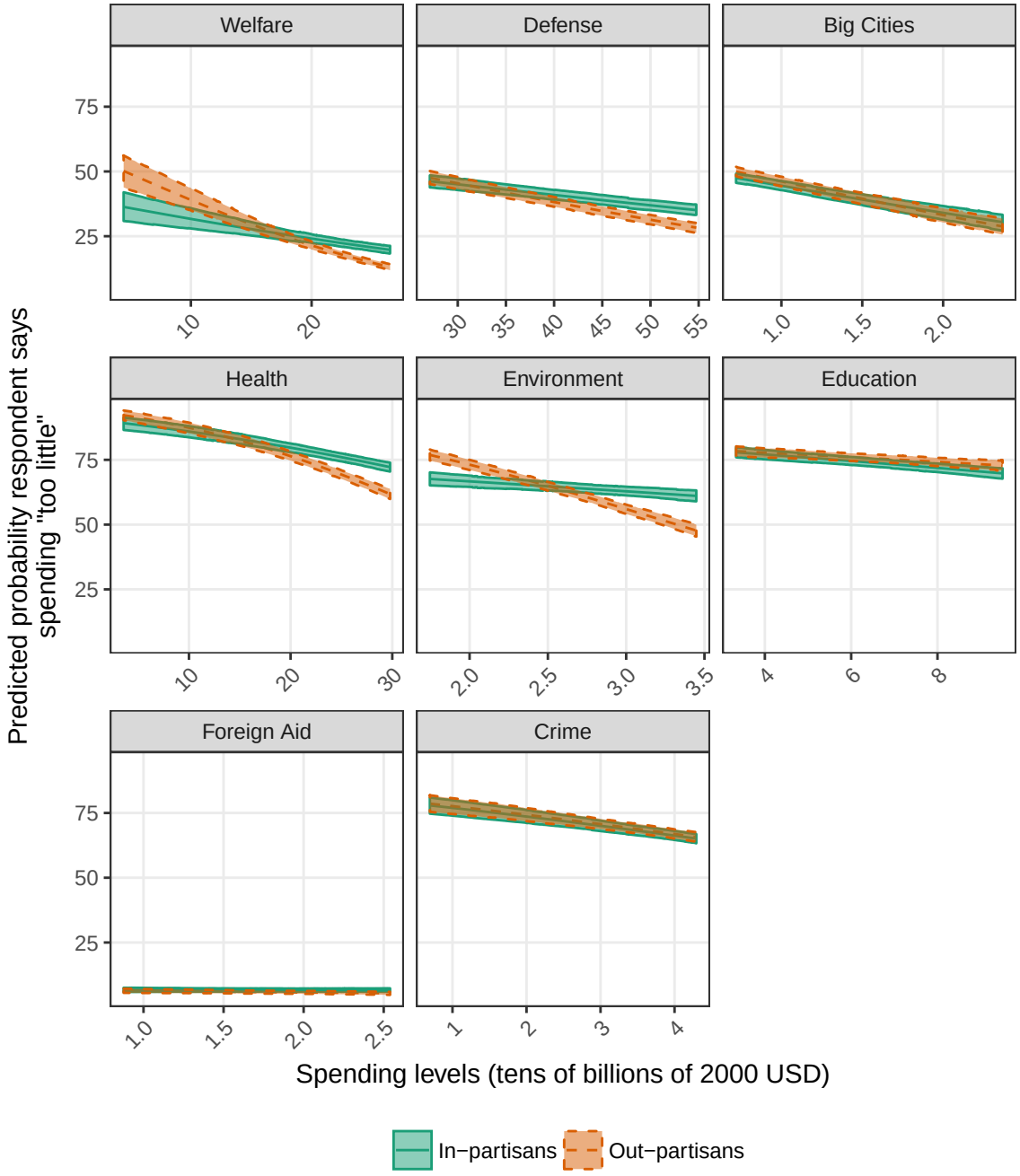


Figure 13: Partisanship and policy feedback. Each panel presents predicted probabilities from Equation 6. As the spending level on a policy increases, the predicted probability of each answer option changes conditional on partisanship.

they prefer more spending decreases, as the thermostatic model predicts. This is the case whether we take partisanship into account or not for most issue areas. There are some areas, however, where partisanship into account makes a great deal of difference.

Above, I argued that we should expect to see differences in thermostatic feedback across partisan groups on high-salience issues with relatively large disagreement across partisan lines (welfare, health, and defense). Specifically, the trend for the predicted probabilities should be flatter for in-partisans than out-partisans among those issues. If this is the case, then we can conclude that in-partisans behave less thermostatically than out-partisans. These three issue ares do in fact display differences in thermostatic responsiveness. I also find that partisans react differently to spending on the environment. In these four policy areas, (defense, the environment, health, and welfare) in-partisans are *less* responsive to spending than out-partisans — the trend of the predicted probabilities is flatter. This means that in-partisans are less likely to change their stated relative preferences for more (or less) spending as spending changes. In none of the eight policy areas do the results go in the opposite direction of expectations.

These four areas also all exhibit large disagreement across partisan lines (see Table 4). And, although spending on the environment has not historically been a highly divisive issue, in recent years it has become much more divisive, which may account for the differences we see in Figure 13.

There do not appear to be large differences in thermostatic behavior across partisan lines on foreign aid, big cities, crime, and education. Spending on foreign aid and crime exhibits very little disagreement by partisanship (again, see Table 4), and only moderate disagreement across partisan lines exists on education. Estimates from the model predict that there are not substantive differences in thermostatic feedback with regard to spending on big cities, even though there exists relatively large disagreement across partisan lines in this area (see Table 4). This is likely because big cities is not a salient issue area.

Taken together, the weight of the evidence presented here suggests that partisanship can and oftentimes does play an important role in the thermostatic process. It appears to play the largest role on the most important issues — salient issues with relatively large disagreements across partisan lines. Differences in thermostatic behavior are smaller among issues where the two sides tend to agree, or if the issue area is not very salient.

3.5 Discussion

This paper began by considering a tension in the existing literature. Previous research shows that the public reacts to policy changes (for examples, Wlezien 1995; Soroka and Wlezien 2010) and that public opinion among various subgroups changes roughly in parallel over time (Page and Shapiro 1992). At the same time, research focusing on how partisans update and maintain their preferences suggests that we should see differences across partisan groups (see discussion in subsection 3.2). However, if partisans really do differ so drastically in how they interpret information, why do we see such parallelism in their opinions over time?

Analysis reveals that there are differences in how people update their relative opinion for more or less policy in response to policy changes based on partisanship on salient issues with disagreement across partisan lines. Specifically, partisans of the same party as the president are less responsive to policy changes in welfare, health, defense, and the environment than out-partisans. Theoretically, reasons to expect these differences based on differences in monitoring, accountability, and cue taking. There could, of course, be other mechanisms driving the observed relationship. Pinning down the exact causal mechanisms is a task for future research in this area.

These results suggest that there is an important role for partisanship in how people change their opinions in response to policy changes. For some policies, it takes larger changes in spending to produce changes in opinion among partisans whose party controls government. On the other hand, partisans' thermostatic behavior is stronger when the other party is in control; a moderate change in spending can produce larger changes in opinion among out-

partisans. These differences imply that we do not understand parallelisms in public opinion as well as we had thought. Shifts in public opinion across policy areas are at least sometimes conditional on partisan control of government. This has implications for the literature on public opinion. It suggests that we need to consider partisan control of government as an additional variable that can impact how partisans react to government policy.

Partisan feedback also matters for representation. Partisans apparently give their own party more leeway to change policy and less leeway to the other party, at on salient issues where they disagree with the other side. This suggests that parties may have a very hard time convincing members of the opposite side of their policy successes, especially in policy areas with large disagreements like defense and welfare. Now, in addition to attitudes such as political trust (Claassen and Ensley 2016), we now know that partisanship can shape opinion responses to policy change.

This can have very real consequences for public opinion and other political outcomes. As others have already shown, higher levels of partisanship in the public decrease the effect of short-term shifts in policy on electoral outcomes (Kayser and Wlezien 2011; Ezrow, Tavits, and Homola 2014). The finding that partisans adjust their opinions differently in response to policy change supports these findings, as it implies that partisanship may weaken these policy-based democratic linkages. However, other policy areas such as spending on big cities or education may be easier to find common ground, as the party bases tend to react to policy change very similarly.

4 Partisan Policymaking

4.1 Introduction

Whereas the previous two sections have been concerned with understanding political preferences, this chapter looks at the other side of the equation. Instead of understanding preferences, we now endeavor to understand political policy. What is the role of the public's preferences in public policy, and do some people's preferences matter more than others? Specifically, this section investigates whether Democrats or Republicans are more likely to get their way.

In the runup to every modern election in the United States, people all over the country experience a similar theme: *"If you want your voice to count, vote!"* This sentiment, drawn on by organizations from college voter registration drives to well-funded and professionalized operations like MoveOn, suggests that voting is one way that people can get their political preferences translated into policy outputs.

Of course, researchers have investigated whether this is in fact the case. Do people's preferences actually get translated into policy outputs? Before looking at the evidence, there is good reason to suspect they do not. After all, most people do not pay much attention to politics outside the campaign, so politicians' work can go unnoticed. Politicians have motivation to respond to pressure other than just public opinion (for example, pressure from their donors), so if the public is not paying much attention, perhaps public opinion does not affect policy outputs much.

Several decades of research reveal that policy does in fact respond to public opinion, at least with certain limitations (Wlezien 1995; Franklin and Wlezien 1997; Erikson, MacKuen, and Stimson 2002; Burstein 2003). In fact, and consistent with the arguments of Get Out the Vote campaigns described above, voting itself seems to ensure that people's preferences are better represented (Griffin and Newman 2005).

However, getting everyone's voice to affect policy equally is not the goal for many organizers on the ground. Registration drives and Get Out the Vote campaigns oftentimes have explicit goals. These goals can be policy-based (in other words, dedicated to achieving a particular policy outcome), or more generally partisan (in other words, hoping to elect more members of a particular party). Their hope is to elect their own party's politicians into office so that their policy preferences can get translated into policy outputs.

In other words, *partisans want to win elections to get their preferred policy outputs.* This basic assumption — that partisans' opinions affect policy more when their party is in power — underlies many theories of politics. People whose party wins the election are excited at least in part because they believe that their opinion matters; they believe that policy will move in their preferred direction. Losers are deflated because they feel as though they've lost the ability to affect policy outputs.

However, whether partisans' opinions matter more to policy outputs when their party is in charge remains untested by researchers. Although we know that public opinion can affect policy outputs, we do not know whether partisans' opinions affect policy outputs more when their party is in charge. There are of course strong reasons to believe it does, perhaps the strongest of which is that it is a common assumption underlying discussion of American politics in the news, in academic journals and conferences, and around the dinner table in American homes. However, there are also reasons to suspect that this may not in fact be the case. Public policy is, with rare exceptions, slow moving. It is therefore difficult to see how partisans' preferences could outweigh those of the other party given the frequent shifts in party control. Additionally, until quite recently bipartisanship was commonplace, and so we might expect that the preferences of partisans of both parties are reflected in policy outputs. Even in the current era of heightened elite polarization, majority parties are oftentimes forced to make compromises with the minority party because of various veto points in the system, such as the filibuster in the Senate.

In this section, I examine the widely-held yet little-tested theory that partisans' opinions affect policy outputs more when their party is in power. Using data from four issue areas from 1976 to 2016, I show that in what might be considered to be the most important issue areas — big-ticket areas with substantial disagreement across partisan lines — policy is more responsive to partisans' opinions if they are the same party as the president.

4.2 Theory

Does public opinion affect policy, and if so how? It is unsurprising that much ink has been dedicated to studying this, given its centrality to modern theories of representative democracy. Although we generally do not expect a perfect relationship between opinion and policy, we do expect that policy generally responds to public preferences. Empirical research shows that this seems to happen, at least under certain conditions (Erikson, MacKuen, and Stimson 2002, for example). In other words, as demand for a policy goes up, supply of that policy tends to go up as well. There are, of course, exceptions to this general rule. In some policy areas, public opinion is simply unanchored to the policy status quo, and so policy cannot respond to it (Wlezien 2016). At other times, pressure for change gradually builds up and results in large changes all at once, a model known as "punctuated equilibrium theory" (Baumgartner and Jones 1993). However, we usually think of the normal day-to-day effect of public opinion on public policy to be slow-moving. The thermostatic model is one way of capturing this relationship (Wlezien 1995; Soroka and Wlezien 2010; Pacheco 2013b). In this model, policymakers adjust the supply of policy up or down in response to public demand for that policy. As more of the public demands a certain policy, they are likely to get more of it. On the other hand, if the public wants less of a certain policy, then policymakers deliver less of it. There are of course caveats to this, and the strength of the relationship varies across different contexts, but the general relationship often holds.

More recently, interest has turned toward gauging whether certain people's preferences matter more to policy outputs than others. A common concern is that the rich are able

to influence policy more than average citizens, so it is perhaps unsurprising that this area has received most of the attention of the newly-emerging field (see Bartels 2005; Soroka and Wlezien 2008; Enns and Wlezien 2011; Gilens 2012; Flavin 2012; Gilens and Page 2014; Enns 2015; Branham, Soroka, and Wlezien 2017, for examples). While there is some evidence that the rich are slightly overrepresented, all of these analyses find that the preferences of income groups are correlated at astonishingly high rates — sometimes with a Pearson's r approaching one (Soroka and Wlezien 2008). This limits the degree to which there can be inequalities in representation across income groups. Given that income is not historically the main dividing cleavage in American politics, this is perhaps unsurprising.

For empirical studies, differences in opinion across groups is important for at least two reasons. First, without much difference, it is difficult to distinguish to whom policy is responding. From a methodological standpoint, if two groups' opinions are perfectly correlated, conventional statistics cannot distinguish between the two. Even if they are not perfectly correlated, high correlations make it hard to distinguish estimated statistical effects from one another.

Second, small differences across groups limit the practical importance of differential responsiveness. If policy responds to group A's opinion more than group B, but group A and group B have nearly identical opinions, then the opinion of group B will still be well represented in policy outputs (Enns 2015).

Unlike income, partisanship is nicely aligned on the defining left-right cleavage in American politics. Although nearly all Americans agree on many items (such as low crime rates being a good thing), on many issues there are substantial differences in opinion across partisan groups. This means that there is more room for meaningful gaps in policy representation between partisan groups than across income groups.

The rest of this section is dedicated to figuring out which partisan group, if any, is "winning." In other words, is one partisan group doing better at getting their preferences translated into policy outputs than the other? Are Democrats somehow more able to get

their preferences translated into policy than Republicans? Or perhaps Independents are running the show since their group presumably contains the median voter.

We can conceptualize policy P as a function of different groups' opinions. This is represented in Equation 7, where D represents opinion of democrats, R represents opinions of Republicans, and I represents other groups' opinions (such as independents and minor-party partisans).

$$P = f(R, D, I) \tag{7}$$

The question, then, is how do we disentangle different groups' effects?

While partisans have different opinions, we also know that party control of government is hugely important for what kinds of policies the government enacts. We know, for example, that Republican control of government is more likely to result in policy moving in a conservative direction, even though this costs them electorally (Wlezien 2017). We also know that policymakers respond to their constituents (Butler and Nickerson 2011), and that they may respond to constituents more often if they are of the same race (Butler and Broockman 2011).

Whether policymakers respond to their copartisans by shifting policy in their copartisan's preferred direction is as yet unanswered, but seems likely. In other words, whether partisans opinions affect policy more when their party is in charge is not yet known.

There is reason to suspect that policymakers do respond more to their copartisans. It seems likely that politicians want to keep their base happy. If that is the case, Democratic politicians should be more likely to pass legislation that their Democratic supports favor, and Republican politicians should be more likely to pass legislation that their supporters favor. Of course, on the other hand the political inattentiveness of the average person is well-documented, so politicians may suspect that once they get into office they can enact policies they want, then try to persuade their base at election time that these policies will actually be beneficial.

We already know that as demand for policy increases, supply of that policy also increases (Soroka and Wlezien 2010). Therefore, we just need to modify what we know in order to take into account subgroup opinion and partisan control of government. This suggests a model where the effect of partisans' opinions differs depending on the party in control of government. Before turning to a specific modeling strategy, however, let us discuss the data.

4.3 Data

Spending data comes from the Office of Management and Budget (OMB) *Historical Tables* "Table 5.1 — Budget Authority by Function and Subfunction." Budget authority is typically a better measure than actual spending outlays because we are interested in since it is more closely related to policy representation (for a discussion of the differencecs, see Wlezien and Soroka 2003). Budget authority does, however, have fewer observations than spending outlays since the data only go back to 1976. Differencing the spending data means that 1977 is our first non-missing observation; leading the data means 1978 is the first year of our analysis.

Since we already know the thermostatic model does not work in certain policy areas, or only works very weakly, we focus here on the policy areas where we are most likely to be able to detect effects (Soroka and Wlezien 2010; Wlezien 2016). Those areas are defense, welfare, healthcare, and education. Note that these four policy areas are in many ways the most important of the many issue areas the GSS asks about. Much more money is spent in these areas, and they are oftentimes at or near the top of the national political debate. Because we expect relative preferences to impact *changes* in spending rather than levels, I difference the spending data. I also standardize the separate series to have mean zero and standard deviation one to more easily allow comparisons across issue areas. Figure 14 shows the distribution of spending in the policy areas over time.

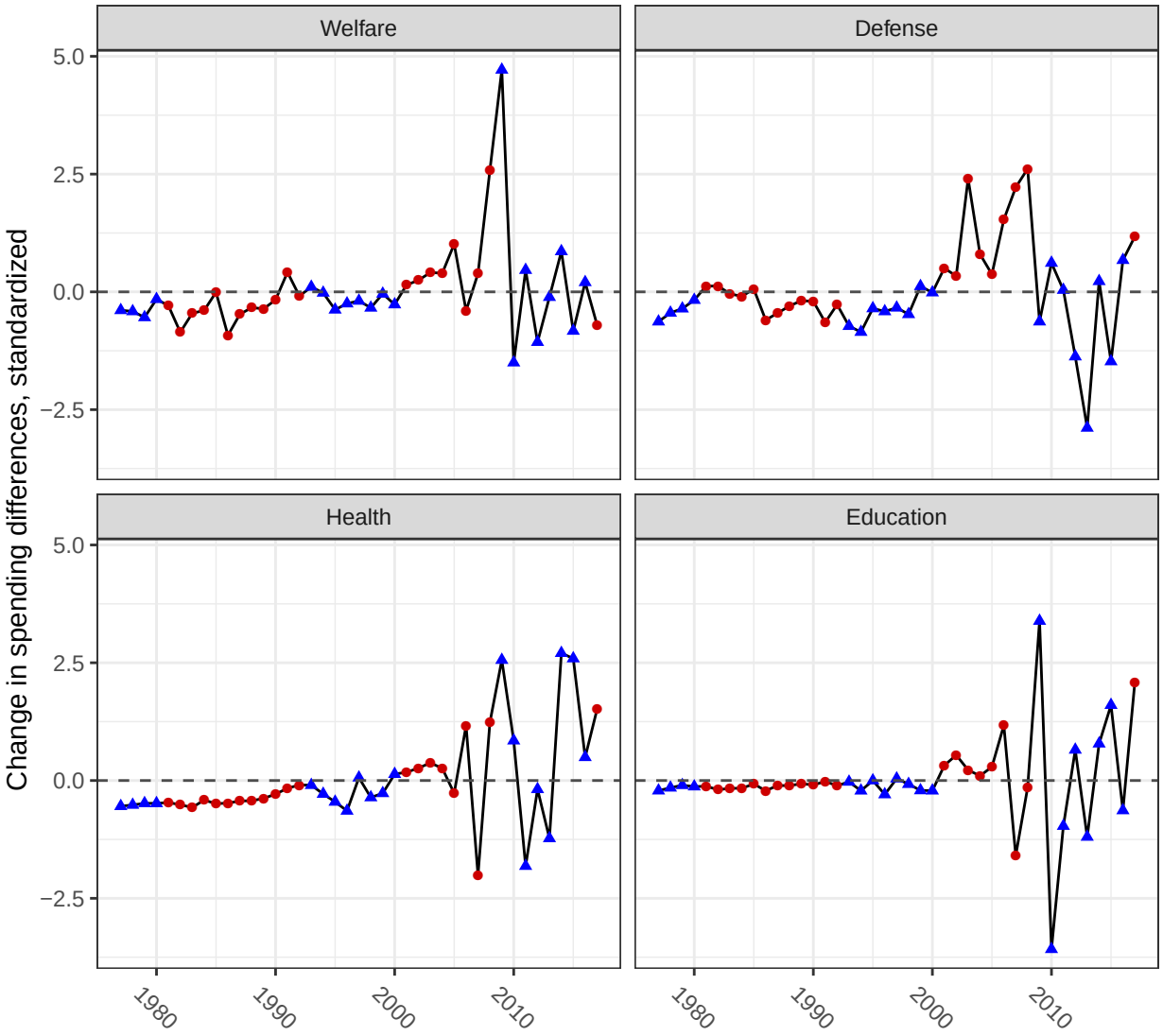


Figure 14: Changes in spending. The vertical axis is standardized changes in spending. The point for each year is a blue triangle, indicating a Democratic president, or a red circle, indicating a Republican president.

Note that these four areas are especially interesting because they are some of the areas where partisans on average disagree the most.[51] In other words, there are real disagreements across partisan lines here, as opposed to superficial differences, like in the question about whether we should spend more or less on combating crime. As discussed above, it is important to have substantive disagreement if we are interested in competing preferences.

Data about public opinion comes from the General Social Survey (GSS). The GSS collects a sample of over 1,000 adults each time it runs, and it ran almost yearly from 1972 to 1994, then biannually afterwards. The question on relative preferences reads, "We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount." The GSS asks about many different policy areas, and also includes two different question wordings for most of the areas. For example, the question about welfare asks half of respondents about "welfare," and the other half about "assistance to the poor." Figure 15 shows net support (the proportion of people preferring more spending minus the proportion of people preferring less) by partisanship over time.[52] Later in the analysis, I combine the two question wordings to have a single opinion measure for each policy area. In these areas, the two question wordings are highly correlated over time and combining them results in nearly identical results than if we do not.

As noted by many others, aggregate opinion of partisan groups show remarkable parallelism over time (Page and Shapiro 1992). The correlations between Democrat, Republican, and independents' preferences are shown in Table 5. However, there are times when one party seems to move more than the other. One example that stands out is the drop in net support for spending on health between 2008 and 2010, after the passage of the "Patient

[51] In the GSS data, partisans on average disagree most on welfare (alt), defense, welfare, city (alt), defense, healthcare (alt), the environment (alt), healthcare, cities, energy, the environment, education (alt), social security, space, education, space (alt), foreign aid (alt), crime, crime (alt), and then foreign aid, in that order.

[52] I use net support to keep in line with previous research in this area. Using means instead of net support results in nearly identical results.

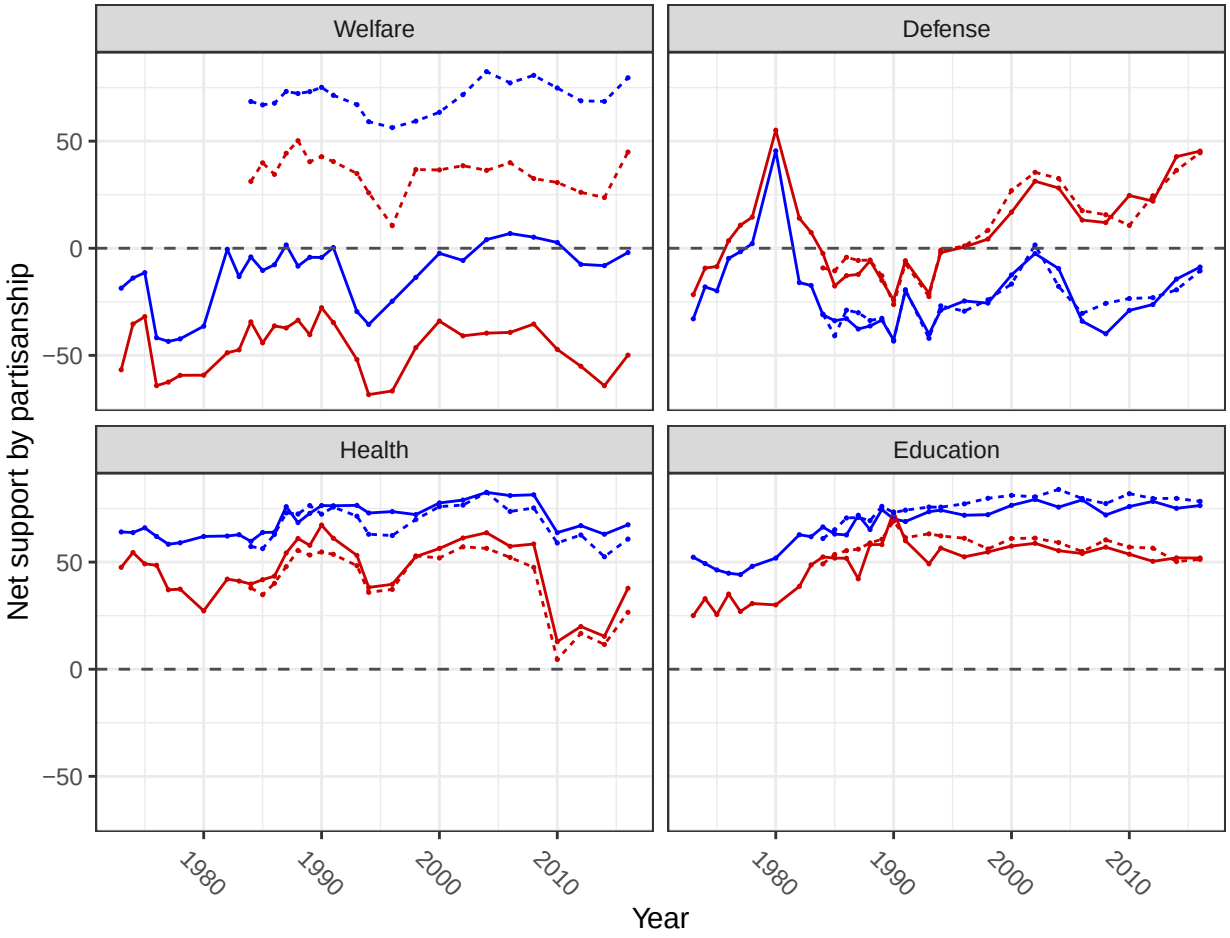


Figure 15: Net support by partisanship across issues and years. Democrat net support is represented by the blue line, Republican net support by the red line. Alternative question wordings in dashed lines.

Table 5: Opinion correlation between Democrats, Republicans, and Republicans across issues

Issue	Dem Rep	Dem Ind	Rep Ind
Defense	0.71	0.88	0.83
Education	0.82	0.87	0.76
Welfare	0.72	0.85	0.62
Health	0.65	0.82	0.66

Protection and Affordable Care Act," also known as "Obamacare." Note that the drop is much more pronounced for Republicans than Democrats, which suggests that partisans respond more strongly to policy from the other party, an anecdote supported by findings by section 3 (Branham 2018).

For the remainder of this section, we will ignore preferences of independents. There are a few reasons for this. First, there just are not that many true independents. Research has shown that people who identify as independent but "lean" to one party act as partisans (Keith et al. 1992), so I include partisan leaners in their partisan group.[53] Once that is done, there aren't that many "true" independents; only about 15 percent of the GSS sample identifies as a "true" independent. It greatly complicates the analysis to include them, because we then not only need to worry about estimating the effect of groups preferences, but also some way to control for the size of the various groups. Finally, the equation we estimate in order to compare partisans' effects includes interactive effects. Including independents in the model forces us to include their interactive effect as well, which given the limited data just is not feasible to estimate reliably. Having said that, appendix subsubsection A.3.2 presents some analysis that parallel the main analyses and include independents.

4.4 Analysis

In order to capture the relationship between public policy, partisans' opinions, and partisan control of government, we need to decide on a modeling strategy. Equation 7 suggests a

[53]Including leaners as partisans or excluding them altogether does not affect the results much, though including them does mean the analysis includes many more individuals.

model with Democrat and Republican opinions, and the surrounding discussion suggests that the effect of partisans' opinions may depend (perhaps greatly) on the party in power. Interaction terms are one way to model the effect of an independent variable on a dependent variable when the effect itself depends on some third variable. This suggests an interactive model, which is described in Equation 8.

$$\Delta P_{jt+1} = \beta_{j0} + \beta_1 R_{jt} + \beta_2 D_{jt} + \beta_3 W_{jt} + \beta_4 R_{jt} W_{jt} + \beta_5 D_{jt} W_{jt} + \beta_6 C_{jt} + \epsilon_{jt} \tag{8}$$

ΔP is the change in policy j at time $t+1$. Since we expect preference to have a lagged effect on spending, we lead the dependent variable. In other words, preferences today impact future policy. D and R are Democrat and Republican opinion, respectively. W is an indicator variable for Democratic control of the White House. C is a variable representing the partisan makeup of Congress, which allows us to assess the effects of partisans' opinions after adjusting for control of Congress. Specifically, it is measured as the proportion of Congress (House and Senate) that is Republican.

Ideally we would be able to investigate the effect of partisan's opinions under a divided and unified government, rather than just looking at the presidency and controlling for the number of Republican congresspeople. After all, if partisans' opinions affect policy outputs more when their party is in power, the logical expectation is that this is maximized if they control the House, Senate, and Presidency. However, this is simply not possible. Divided government is the norm in recent American politics; unified government is rare. Table 6 shows how low the number of observations would be. The number of observations is so low for unified government that the model would be unestimable.

Table 6: Unified government is rare

Government Status	GSS N	N, Years
Unified, Democrat	5	7
Divided	18	28
Unified, Republican	2	4

Table 7: Modeling the Conditional Effect of Partisans' Opinions

Democrat Net Support	−0.001
	(0.012)
Democrat President	−0.250
	(0.226)
Republican Net Support	0.014
	(0.012)
Proportion Republican Congress	0.650
	(1.441)
Dem * Dem Prez	0.028***
	(0.008)
Rep * Dem Prez	−0.027***
	(0.008)
Observations	100
R^2	0.150
Adjusted R^2	0.065
Note:	*p<0.1; **p<0.05; ***p<0.01
	Model includes fixed effects by issue area.

Note that Equation 8 is equivalent to a panel model where issues are what we would usually conceptualize as individuals (in other words, instead of following multiple individuals over time, we follow multiple issues over time). Thus, we also use fixed-effects by issue, which allows the estimated intercepts to vary by issue.[54] So we have four issues over 25 data points. I estimate Equation 8 with the `plm` package in R.

[54]This makes the unrealistic assumption that the estimated slopes are identical across issues. We already know that policy responsiveness varies by issue (see Soroka and Wlezien 2010, for example). However, making this assumption gets us increased statistical power, which is essential for this model because preferences are highly correlated over time. Additionally, detecting interaction effects is difficult, statistically speaking. It usually requires several times the sample size (see Leon and Heo 2009, for example). And, although issues do differ, we are only analyzing the four issue areas where the thermostatic model has already been shown to work, so the slopes are similar (indeed, Soroka and Wlezien (2010) already combine a few issue areas because of how similar they are). Results in Table 12 show what happens when this assumption is relaxed. Results in most issue areas are statistically unreliable, which is unsurprising given the relatively low number of observations and high number of parameters to estimate.

Full results (omitting fixed effects) are presented in Table 7. Overall, the model is estimated with quite a bit of uncertainty. However, it does have some predictive power, and the interaction does seem to improve the fit.[55] Given how highly correlated partisans' preferences are (see Table 5), it is somewhat surprising that the model is able to differentiate between the two groups at all. Table 7 suggests that the interaction effect is important, though recall that assessing the effect requires more information than is available in that table (Brambor, Clark, and Golder 2006). From Table 7, we can see that under a Republican president, neither group's preferences are reliably different from zero. We can also see that under a Democratic president, the effect of Democrats' opinions increase and Republicans' decrease, though it is not possible to see whether this is statistically significant.

Assessing effects in the presence of interactions requires calculating quantities of interest and associated standard errors. Figure 16 presents that information. The estimated effect of Democrat opinion is a solid blue dot with solid blue lines indicating confidence intervals. The estimated effect of Republican opinion is a solid red dot with dashed red lines indicating confidence intervals. The left pane is under a Democratic president; the right pane is under a Republican president.

It appears that we can separate the effect of Democrat and Republican opinion under a Democrat presidency. Under a Democrat presidency, Democrats' opinions have a strong effect on policy than Republicans'. Specifically, a one percentage point increase in Democrat's net support is estimated to result in about a 0.027 increase in (standardized) budget authority the following year. Republicans' opinions under a Democrat president are not found to impact policy; in fact, the point estimate is slightly negative, though not reliably different from zero.

On the other hand, the model is not able to distinguish between Democrat and Republican opinion under a Republican president. Nor is it able to distinguish either one from zero (though the model can say that the two together are greater than zero with quite a bit of

[55] See Table 13 for the model without the interaction.

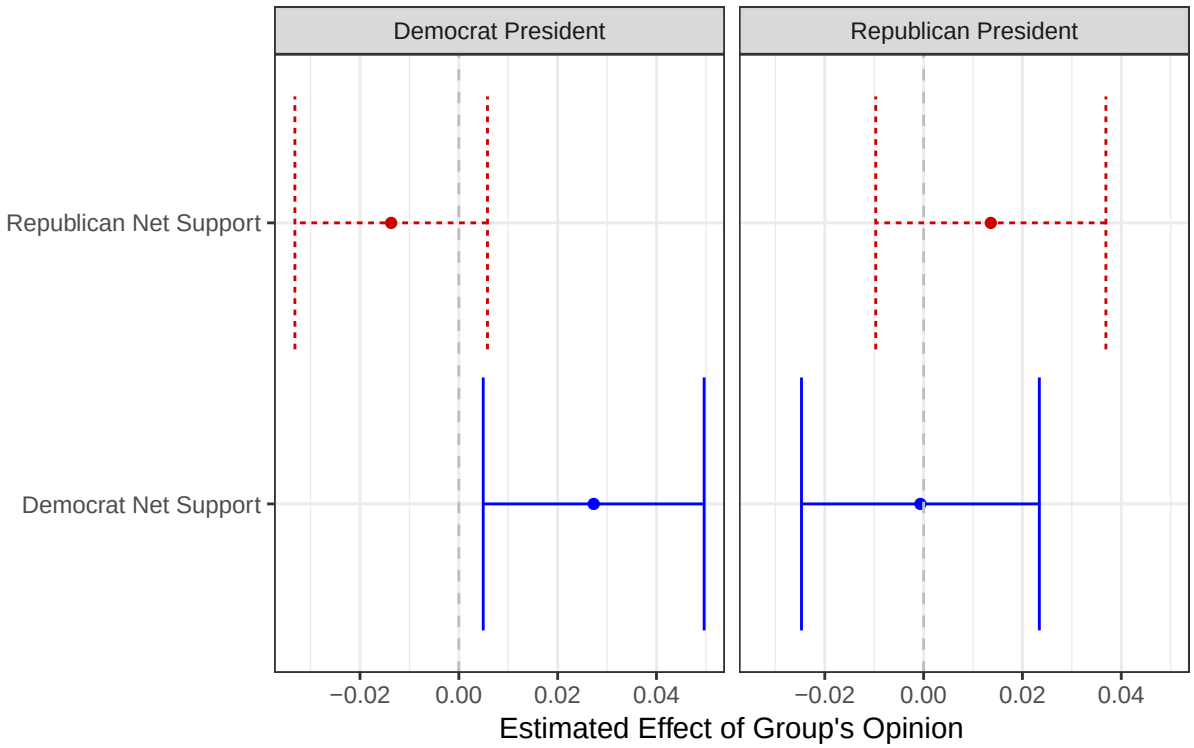


Figure 16: Estimated effects of Democrats' and Republicans' opinions under a Democratic and Republican Presidents.

certainty — $p < 0.01$). The point estimates are, however, where we expect; Democratic opinion is estimated to have a smaller effect than Republican opinion under a Republican president. Even making the unrealistic assumption above that issues' slopes are identical, it is still somewhat surprising to get stable estimates out of the model with only 4 group variables, 100 data points, highly correlated independent variables, and two interaction terms.

One oddity that arises from the results in Table 7 and Figure 16 is the potentially negative effects of out-partisans' opinions on policy. Under a Democratic president, the point estimate for Republican opinion is negative, and under a Republican president, the point estimate for Democratic opinion is negative, though in both cases the result is not significantly distinguishable from zero. Ignoring the uncertainty for a moment, why might the effect of out-partisans' opinion be negative? Why would out-partisans' opinions have an inverse effect on policy? A zero effect makes sense — in that case, out-partisans' opinions just do not affect policy. However, a negative effect is harder to explain at first glance. One

answer comes as a corollary from the analysis in section 3. There, we see that out-partisans react to policy too strongly; they shift their opinion more than they should when policy changes. If their opinion then impacts future policy, presidents might balance against this shift by moving policy against the change in opinion. In other words, presidents apparently balance against this by shifting policy in the opposite direction of out-partisan opinion shifts.

4.5 Discussion

These analyses reveal that partisans are right to care deeply about election outcomes. In the biggest issue areas with the most disagreement across partisan lines — in other words, where it matters most — policy responds more (and sometimes solely) to in-partisans than it does do out-partisans' opinions. In other words, parties seem to represent partisans and that's pretty much it. Neither out-partisan opinion nor the opinion of independents seems to have much or any real effect.

That said, the consequences are not as stark as one could imagine for a few reasons. First, in-partisan opinion only weakly predicts policy change. Second, even where it does determine policy, policy winds up about where it would anyway, given that preferences are heavily correlated across in-partisans, out-partisans, and independents (see Table 5, as well as a lengthier discussion of this, albeit focused on income groups in Enns (2015) and Branham, Soroka, and Wlezien (2017)).

As polarization at the elite level reaches historical levels, it seems even more important for partisans to win elections in order to get their preferences reflected in policy outputs. Although this paper did not consider whether the relationship changed over time, it seems likely that the effect of partisan opinion on policy outputs is stronger now than it was when the two parties were largely the same.

It is also important to note that this comes with a caveat. The results come with quite a bit of statistical uncertainty, especially under a Republican presidency. This could be due to the limited amount of data, or it could be indicative that policy under Republican presidents

responds more equally to partisan groups' opinions than under a Democratic president. This is not unreasonable; after all, self-described Democrats outnumber self-described Republicans in the electorate, especially in the earlier years of the analysis. Perhaps Republican presidents were more responsive to Democrats than Democrat presidents were to Republicans since there is more of an electoral advantage for Republican presidents to court Democratic voters. More research in this area is needed to come to a definite conclusion.

What are other implications of these findings? When considered together with recent research showing that in-partisans are less responsive to policy change (Branham 2018), this may help explain why parties often run to the extremes. For example, Wlezien (2017) finds that the longer a president's tenure, the less representative they become. This could be at least partially due to the combination of presidents catering to their partisan's opinions but partisans not updating those opinions. In other words, Republican presidents may push policy rightwards, but Republican voters don't respond as if they had. Republican presidents then perhaps continue to respond to now-outdated Republican opinion and get punished for pushing policy too far in one direction. There is still more research needed in this area before we fully understand how policy, opinion, and partisanship interact with each other, especially over time.

A Appendix

A.1 Appendix for Modeling Spending Preferences & Public Policy

A.1.1 2014 GSS Question Wording Analysis

In addition to the questions listed in Table 1, half of the respondents in the 2014 GSS were randomized to receive alternate question wordings for eleven of these items. This survey experiment provides a unique opportunity to examine the dependence of our model's estimates on the specific wording of questions used to estimate the model.

Table 8 lists these alternate question wordings. Some of these changes (e.g. "space exploration" versus "space exploration program") seem likely to be inconsequential. Others, however, such as "welfare" versus "assistance to the poor" seem more likely to produce estimates that meaningfully differ between the two wordings.

Table 8: Alternative question wordings

			Response Percent		
Policy	Variable	Wording	too much	about right	too little
Foreign Aid	`nataidy`	assistance to other countries	74.1	20.4	5.5
Defense	`natarmsy`	national defense	31.5	36.1	32.4
Big cities	`natcityy`	assistance to big cities	38.4	41.7	19.9
Crime	`natcrimy`	law enforcement	13.7	39.2	47.1
Drugs	`natdrugy`	drug rehabilitation	13.9	33.8	52.3
Education	`nateducy`	education	7.5	17.7	74.8
Environment	`natenviy`	the environment	12.2	26.9	60.9
Welfare	`natfarey`	assistance to the poor	11.8	24.4	63.8
Health	`nathealy`	health	20.7	22.2	57.1
Race	`natracey`	assistance to Blacks	24.1	46.9	29.0
Space	`natspacy`	space exploration	32.6	42.5	24.9

In order to understand the effects of these different question wordings, we estimate our model treating each question wording as a different item. This produces discrimination parameter and cutpoint estimates for twenty-nine items (the standard wordings for the same eighteen items considered in subsection 2.2 as well as the alternate wordings for eleven items).

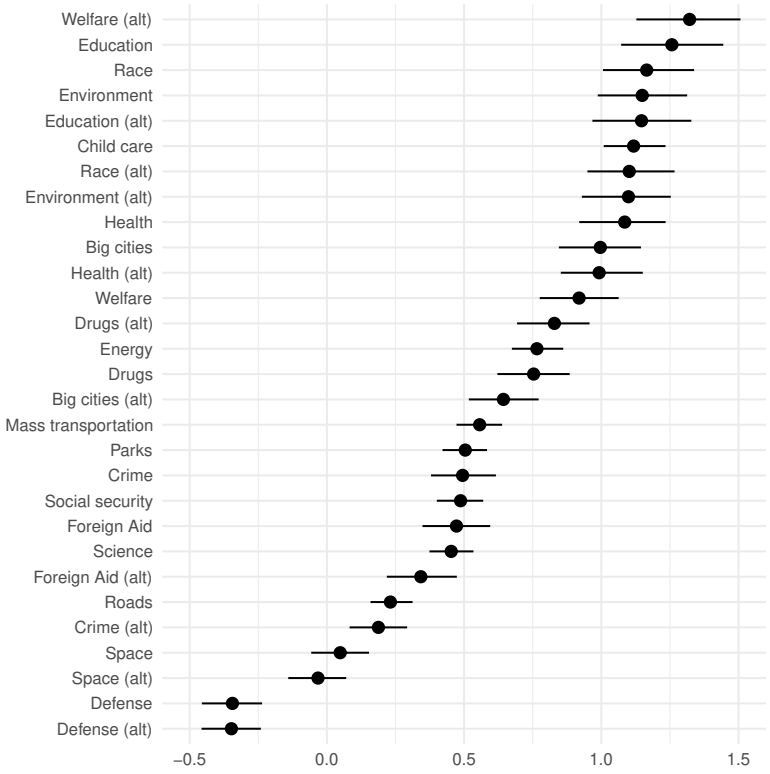


Figure 17: Discrimination Parameter Estimates, 2014 GSS with Alternate Wordings

A key question will be how these item's parameters, in particular β_j and p_j differ across the two phrasings.

Figure 17 is comparable to Figure 1 and shows the estimated discrimination parameters. Estimates for the standard wordings, plotted in black, are quite similar to those in Figure 1. Furthermore, the discrimination parameter estimates for the alternate wordings are similar for eight out of the eleven items. The three items for which 95% HPDs differ between the two versions are cities, welfare, and crime.

Figure 18 is comparable to Figure 2 in that it plots the estimated cutpoints for each policy. The estimated cutpoints do not overlap for six policies: welfare, race, health (κ_1 only), drugs (κ_2 only), big cities, and foreign aid (κ_1 only).

Figure 19 plots the estimated policy positions for standard and alternate wordings for items in the 2014 GSS. The policy with the strongest evidence of divergence between the two wordings is welfare. This is unsurprising given that dramatically different levels of support

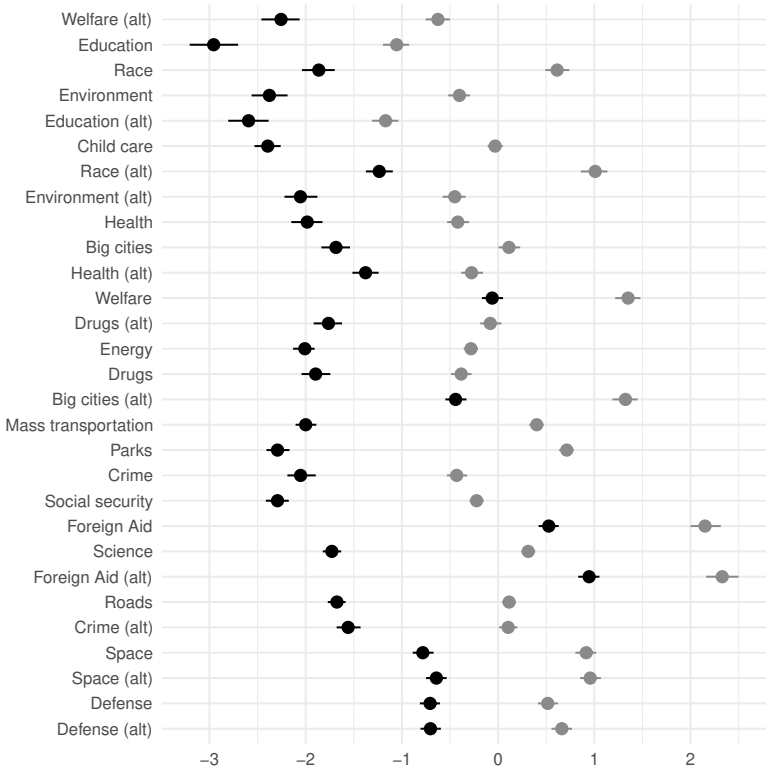


Figure 18: Estimated cutpoints, 2014 GSS with Alternate Wordings

for "welfare" and for "aid to the poor" are often cited as classic examples of question wording effects. Figure 19 shows that the estimated position of spending on "aid to the poor" is well to the left of that for "welfare," with the former estimated to the left of zero and the later to the right. The policy positions for the two wordings of the race item also showed clear, albeit relatively small, differences. Even though the wordings on this issue — "improving the condition of Blacks" versus "assistance to Blacks" — do not seem dramatically different. Finally, spending on cities, for which the standard and alternate wordings, respectively, are "solving the problems of big cities" and "assistance to big cities," show fairly large differences.

Overall, the model's estimates appear fairly robust to changes in wording, but with some important exceptions. This might be thought to imply that the spending preferences of ordinary Americans are meaningful things, at least when measured based on expressed relative preferences.

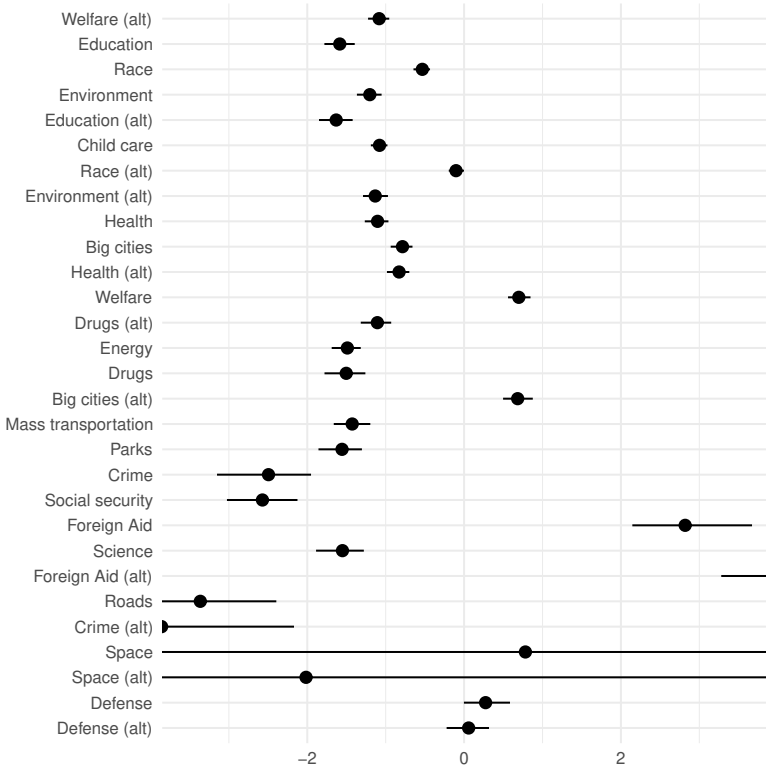


Figure 19: Ideal Point and Policy Position Estimates, 2014 GSS with Alternate Wordings

A.1.2 Convergence and Diagnostics

This section reports convergence and diagnostic tests for the 2014 GSS sampler without alternative questions (the results presented in subsection 2.2) and for the run with the 1998 GSS and NPAT data jointly scaled (results in subsection 2.3).

Because of the large number of parameters estimated (for example, 18 βs, 36 κs, and $2,538$ ideal points for the 2014 GSS data), it is virtually impossible to visually inspect the traceplots for each parameter to asses convergence. We did manually inspect many traceplots, none of which indicated a problem with convergence.

We also inspected the diagnostic suggested by Geweke (1991). Again, the large number of parameters prevents us from manually inspecting each parameter. A density plot of the z statistics shows that they look very similar to a standard normal distribution, which is what we would expect if the sampler had converged to its stationary distribution. Furthermore, we reject roughly five percent of the Geweke tests across all parameters—what we should expect if the null hypothesis of convergence is actually true. Similarly, the convergence test statistic proposed by Heidelberger and P. Welch (1983) also suggests convergence. All but 13 of the 2,592 parameters estimated in the 2014 analysis pass this convergence test. Given the large number of parameters, this tiny fraction of rejections (around one half of one percent of parameters) does not seem problematic. The results for the Heidelberger and Welch test for the 1998 analyses is similar, with only 25 out of 3,360 parameters failing the convergence test (less than one percent of parameters).

Finally, we also ran five separate chains of the sampler for both the 2014 and 1998 datasets starting from over-dispersed initial values and calculated the convergence diagnostic proposed by Gelman and Rubin (1992). For both datasets, the test statistic was well below the conventionally used cutoff of 1.1 (the largest value across all parameters and both datasets was 1.03) after a short number of iterations, implying that our burn-in period of 100,000 iterations was more than enough.

Effective sample sizes are large for all parameters in both model runs. In the 2014 run containing the GSS data, the minimum effective sample size we find is $6,054$. Similarly, the 1998 run with both the GSS and NPAT data yields a minimum effective sample size of $3,662$.

A.2 Appendix for Partisan Feedback

A.2.1 Thermostatic Feedback at the Individual Level

As described in the main text, salient issues are more likely to display thermostatic feedback than nonsalient issues (Soroka and Wlezien 2010). First, we estimate Equation 5, where the estimated sign of β_1 tells us about policy feedback. If negative, then the thermostatic model works as expected.

I estimate the model in a Bayesian context separately for each policy area.[56] Because the meaning of coefficients from an ordered probit analysis can be difficult to interpret, I report predicted probabilities. It is important to note, however, that the mean of the posterior estimate for the coefficient associated with spending is negative in all cases, suggesting that the logic of the thermostatic model works quite well at the individual level.

Let us now turn to the analysis. Figure 20 plots the predicted probability of saying "too little" for each of the policy areas.[57] Values for the other variables as well as the scale of the axes are the same as presented in Figure 20, see footnote 50. The horizontal axis is levels of spending on a policy in tens of billions of 2000 dollars and the predicted probability is along the vertical axis. The lines represent posterior means and the shaded areas represent 95 percent highest posterior densities. The horizontal axis ranges from the minimum observed value in each spending domain to the maximum observed value.

These predicted probabilities highlight the lopsided nature of respondents' answers to some of the questions. The *levels* of some predicted probabilities are always quite high or quite low. For example, the predicted probability of saying "too little" when asked about spending on several issues — crime, education, the environment, and health — is always quite high. Conversely, the predicted probability of saying "too little" is being spent on foreign aid is always quite low. This is a feature of the data; it is simply the case that most people say that they prefer more or less spending on certain policies. So although the

[56] Sampler diagnostics are reported in subsubsection A.2.4.

[57] As before, predicted probabilities for "too much" and "about right" are omitted for ease of interpretation, but reported in this appendix.

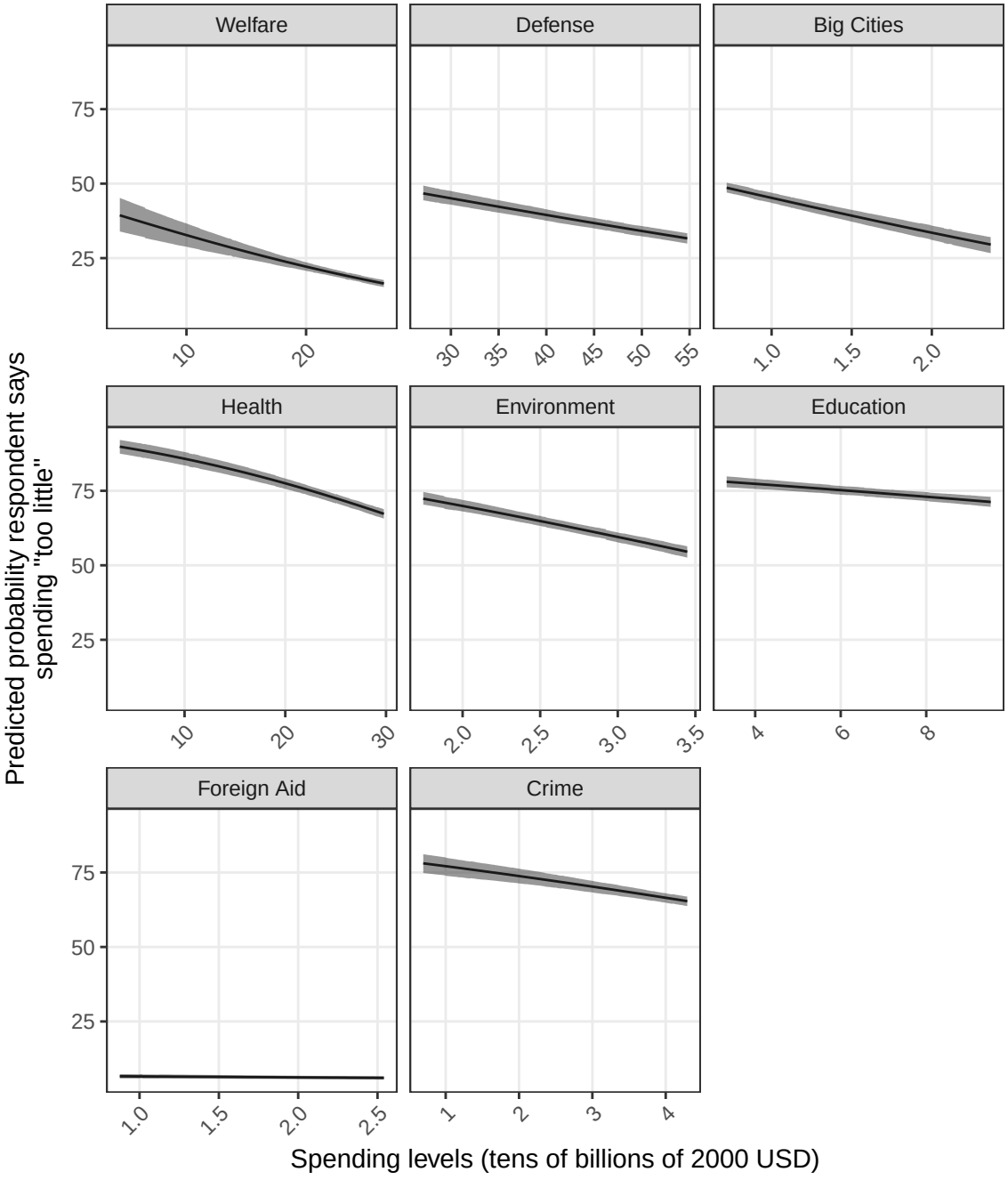


Figure 20: Policy feedback at the individual level. As the spending level on a policy increases, the predicted probability of preferring more spending decreases. Each panel presents predicted probabilities from Equation 5.

predicted probabilities in Figure 20 for saying "too little" is being spent on welfare are always quite low, they would be much higher if instead we presented the predicted probability of saying "too little" is being spent on "assistance to the poor," the alternative wording for that question.

In every issue area, the trend of the predicted probabilities for saying "too little" is negative. This indicates that the predicted probability on every issue for saying "too little" decreases as spending increases, which is what the thermostatic model predicts.

That said, patterns clearly differ depending on the issue. For some issues, the trend of the predicted probabilities is much steeper than others. Foreign aid, for example, shows almost no thermostatic feedback. On the other hand, higher-profile issues like welfare and defense exhibit relatively large differences depending on the spending level. These differences are important, suggesting that people are more responsive to spending changes in some domains than others. In particular, people are basically unresponsive to spending changes in foreign aid, and only modestly responsive to spending changes in education, two low salience issues. There is relatively strong thermostatic feedback in the remaining domains: big cities, crime, defense, the environment, health, and welfare. The thermostatic model works well at the individual level across a wide range of issues. As spending goes up, the predicted probability of saying "too little" goes down and the predicted probability of saying "too much" goes up.

A.2.2 Parameter Estimates

Interpretation of regression output for ordered probit models is notoriously difficult. Predicted probabilities are reported in the main text. I report here the posterior means and standard deviations of the regression coefficients. Table 9 reports the results from estimating Equation 5 and Table 10 reports the results from estimating Equation 6.

Table 9: Regression output summary for models estimated from Equation 2

Parameter	Statistic	City	Crime	Defense	Education	Environment	Foreign Aid	Health	Welfare
Spending	Mean	-0.305	-0.106	-0.014	-0.034	-0.281	-0.026	-0.032	-0.032
	(SD)	(0.02)	(0.014)	(0.001)	(0.006)	(0.021)	(0.015)	(0.003)	(0.004)
Russia	Mean			0.046					
	SD			0.004					
Intercept	Mean	1.527	1.549	0.415	0.991	1.871	-0.614	1.268	0.171
	(SD)	(0.044)	(0.033)	(0.047)	(0.037)	(0.057)	(0.041)	(0.033)	(0.033)
Alt wording	Mean	-0.756	-0.225	-0.028	0.13	0.056	-0.143	-0.076	1.209
	(SD)	(0.013)	(0.013)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.013)
Counter	Mean	-0.007	0.003	0.017	0.015	0.003	0.009	0.023	0.021
	(SD)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
HS Educaiton	Mean	0.067	0.111	-0.1	0.258	0.254	-0.136	0.084	-0.202
	(SD)	(0.016)	(0.017)	(0.018)	(0.016)	(0.016)	(0.017)	(0.016)	(0.016)
Over HS Edu	Mean	0.175	-0.01	-0.365	0.362	0.372	0.128	0.008	-0.193
	(SD)	(0.018)	(0.018)	(0.02)	(0.018)	(0.018)	(0.019)	(0.018)	(0.018)
Female	Mean	0.139	0.18	0.005	0.136	0.078	0.058	0.176	0.076
	(SD)	(0.012)	(0.012)	(0.013)	(0.013)	(0.012)	(0.013)	(0.012)	(0.012)
Cutpoint	Mean	1.077	1.208	1.2	1.096	1.071	1.022	1.006	0.917

Table 9: *(continued)*

Parameter	Statistic	City	Crime	Defense	Education	Environment	Foreign Aid	Health	Welfare
	(SD)	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.007)
post911	Mean			0.139					
	SD			0.016					
Black	Mean	0.509	0.15	-0.295	0.437	0.219	0.198	0.428	0.749
	(SD)	(0.018)	(0.019)	(0.02)	(0.021)	(0.019)	(0.019)	(0.02)	(0.018)
Hispanic	Mean	0.204	-0.055	-0.361	0.037	0.119	0.4	-0.021	0.271
	(SD)	(0.029)	(0.029)	(0.029)	(0.031)	(0.03)	(0.029)	(0.029)	(0.028)
Middle Atlantic	Mean	-0.045	0.045	0.028	0.012	-0.064	-0.095	0.039	-0.12
	(SD)	(0.03)	(0.031)	(0.034)	(0.032)	(0.033)	(0.034)	(0.033)	(0.032)
E. Nor. Central	Mean	-0.154	0.08	0.102	-0.037	-0.18	-0.142	-0.12	-0.141
	(SD)	(0.03)	(0.031)	(0.032)	(0.031)	(0.032)	(0.033)	(0.032)	(0.03)
W. Nor. Central	Mean	-0.22	0.017	0.087	-0.031	-0.207	-0.117	-0.169	-0.15
	(SD)	(0.035)	(0.035)	(0.037)	(0.035)	(0.035)	(0.038)	(0.036)	(0.035)
South Atlantic	Mean	-0.314	0.131	0.28	0.048	-0.199	-0.078	-0.101	-0.184
	(SD)	(0.03)	(0.03)	(0.033)	(0.032)	(0.032)	(0.033)	(0.031)	(0.031)
E. Sou. Central	Mean	-0.417	0.179	0.321	0.08	-0.306	-0.143	-0.126	-0.198
	(SD)	(0.036)	(0.037)	(0.039)	(0.037)	(0.036)	(0.039)	(0.037)	(0.036)

Table 9: *(continued)*

Parameter	Statistic	City	Crime	Defense	Education	Environment	Foreign Aid	Health	Welfare
W. Sou. Central	Mean	-0.318	0.132	0.307	-0.008	-0.267	-0.112	-0.187	-0.195
	(SD)	(0.032)	(0.033)	(0.036)	(0.035)	(0.035)	(0.036)	(0.034)	(0.033)
Mountain	Mean	-0.265	-0.064	0.118	0.039	-0.28	-0.112	-0.17	-0.104
	(SD)	(0.035)	(0.036)	(0.038)	(0.038)	(0.037)	(0.038)	(0.037)	(0.035)
Pacific	Mean	-0.119	0.034	-0.013	0.041	-0.199	-0.036	-0.078	-0.114
	(SD)	(0.031)	(0.032)	(0.034)	(0.032)	(0.034)	(0.034)	(0.033)	(0.031)

Table 10: Regression output summary for interactive models

Parameter	Statistic	City	Crime	Defense	Education	Environment	Foreign Aid	Health	Welfare
Spending	Mean	-0.339	-0.108	-0.019	-0.029	-0.466	-0.050	-0.043	-0.051
	(SD)	(0.026)	(0.015)	(0.001)	(0.007)	(0.027)	(0.021)	(0.003)	(0.004)
In partisan	Mean	-0.108	-0.024	-0.252	0.025	-0.911	-0.018	-0.249	-0.481
	(SD)	(0.034)	(0.026)	(0.061)	(0.040)	(0.089)	(0.052)	(0.023)	(0.029)
Interaction	Mean	0.066	0.002	0.008	-0.012	0.363	0.048	0.018	0.028
	(SD)	(0.031)	(0.010)	(0.002)	(0.008)	(0.035)	(0.029)	(0.002)	(0.002)
Russia	Mean			0.046					
	SD			0.004					
Intercept	Mean	1.579	1.556	0.548	0.978	2.322	-0.598	1.373	0.392
	(SD)	(0.048)	(0.034)	(0.057)	(0.042)	(0.070)	(0.049)	(0.035)	(0.035)
Alt wording	Mean	-0.756	-0.226	-0.026	0.130	0.058	-0.143	-0.077	1.214
	(SD)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.013)
Counter	Mean	-0.007	0.003	0.017	0.015	0.003	0.008	0.025	0.023
	(SD)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
HS Educaiton	Mean	0.068	0.112	-0.100	0.258	0.261	-0.138	0.093	-0.189
	(SD)	(0.016)	(0.016)	(0.018)	(0.016)	(0.016)	(0.017)	(0.016)	(0.016)
Over HS Edu	Mean	0.176	-0.009	-0.367	0.362	0.381	0.125	0.017	-0.180

Table 10: *(continued)*

Parameter	Statistic	City	Crime	Defense	Education	Environment	Foreign Aid	Health	Welfare
	(SD)	(0.018)	(0.018)	(0.020)	(0.019)	(0.018)	(0.019)	(0.018)	(0.018)
Female	Mean	0.139	0.181	0.005	0.135	0.075	0.057	0.175	0.074
	(SD)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)
Cutpoint	Mean	1.078	1.208	1.202	1.096	1.072	1.023	1.010	0.922
	(SD)	(0.008)	(0.009)	(0.009)	(0.009)	(0.008)	(0.010)	(0.009)	(0.007)
post911	Mean			0.149					
	SD			0.016					
Black	Mean	0.508	0.148	-0.293	0.436	0.206	0.201	0.410	0.724
	(SD)	(0.018)	(0.018)	(0.019)	(0.020)	(0.018)	(0.019)	(0.020)	(0.018)
Hispanic	Mean	0.201	-0.056	-0.358	0.034	0.114	0.402	-0.030	0.263
	(SD)	(0.030)	(0.029)	(0.030)	(0.032)	(0.031)	(0.030)	(0.030)	(0.029)
Middle Atlantic	Mean	-0.044	0.047	0.029	0.013	-0.060	-0.093	0.046	-0.115
	(SD)	(0.031)	(0.031)	(0.034)	(0.033)	(0.032)	(0.033)	(0.033)	(0.031)
E. Nor. Central	Mean	-0.154	0.081	0.101	-0.036	-0.177	-0.141	-0.112	-0.135
	(SD)	(0.030)	(0.031)	(0.033)	(0.031)	(0.031)	(0.032)	(0.032)	(0.030)
W. Nor. Central	Mean	-0.220	0.017	0.087	-0.029	-0.203	-0.115	-0.159	-0.143
	(SD)	(0.034)	(0.035)	(0.037)	(0.036)	(0.035)	(0.037)	(0.036)	(0.033)

Table 10: *(continued)*

Parameter	Statistic	City	Crime	Defense	Education	Environment	Foreign Aid	Health	Welfare
South Atlantic	Mean	-0.315	0.133	0.282	0.048	-0.195	-0.076	-0.091	-0.176
	(SD)	(0.030)	(0.031)	(0.033)	(0.031)	(0.032)	(0.031)	(0.031)	(0.029)
E. Sou. Central	Mean	-0.417	0.179	0.320	0.081	-0.306	-0.142	-0.122	-0.194
	(SD)	(0.036)	(0.037)	(0.040)	(0.038)	(0.036)	(0.037)	(0.037)	(0.035)
W. Sou. Central	Mean	-0.317	0.133	0.308	-0.009	-0.266	-0.110	-0.182	-0.193
	(SD)	(0.033)	(0.034)	(0.036)	(0.035)	(0.035)	(0.035)	(0.034)	(0.033)
Mountain	Mean	-0.265	-0.063	0.118	0.041	-0.277	-0.113	-0.161	-0.097
	SD	0.036	0.035	0.039	0.038	0.037	0.038	0.037	0.035
Pacific	Mean	-0.119	0.036	-0.015	0.041	-0.200	-0.036	-0.074	-0.111
	SD	0.032	0.032	0.034	0.033	0.033	0.032	0.032	0.031

A.2.3 Figure of All Predicted Probabilities

In the interest of space and for ease of comparison, Figure 13 in the main text presents the predicted probabilities of saying "too little." The model, however, also makes predictions for saying "too much" and "about right," which I report here. Figure 21 reports the same predicted probabilities as Figure 20 including all three response options, and Figure 22 does the same for Figure 13.

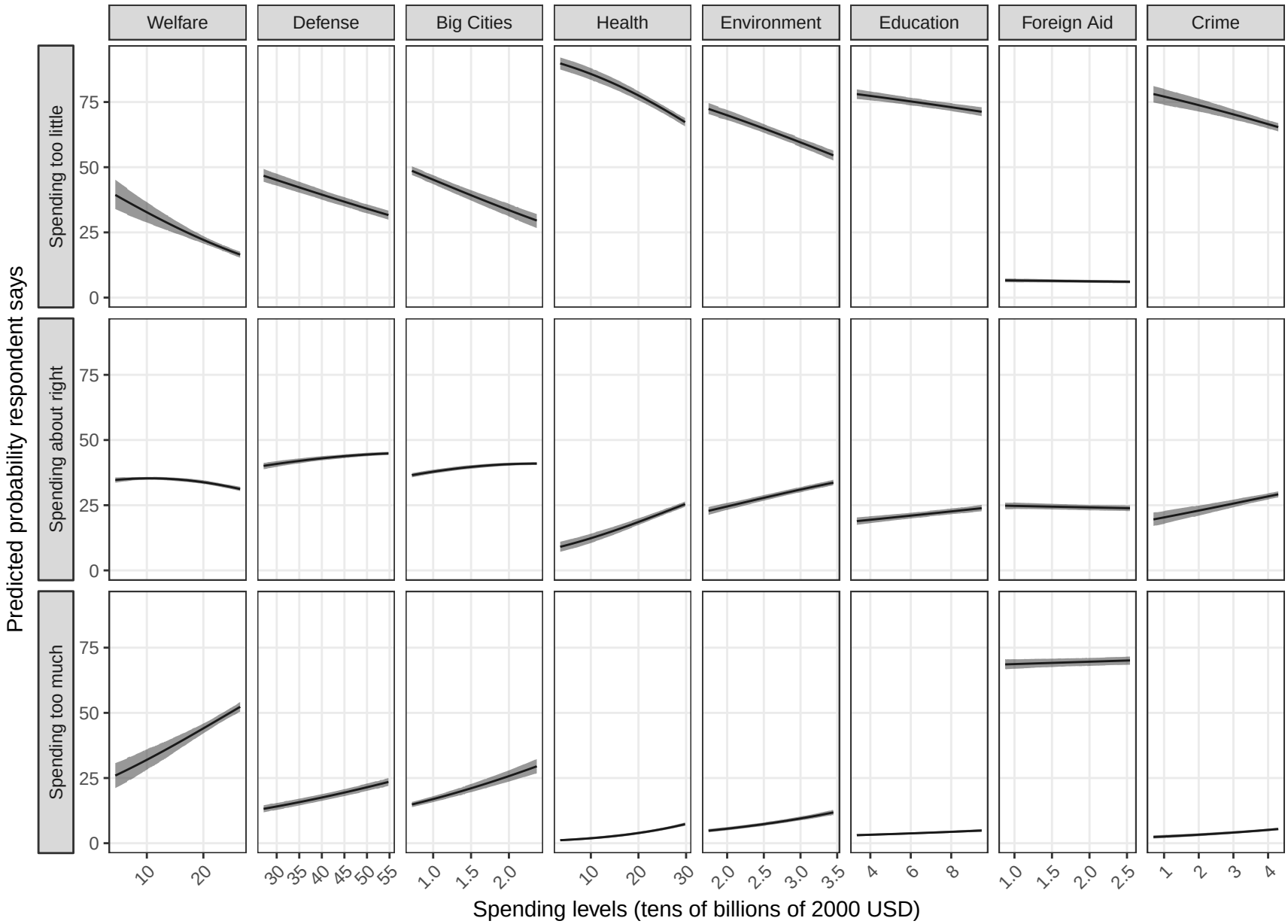


Figure 21: Predicted probabilities for all three answer options

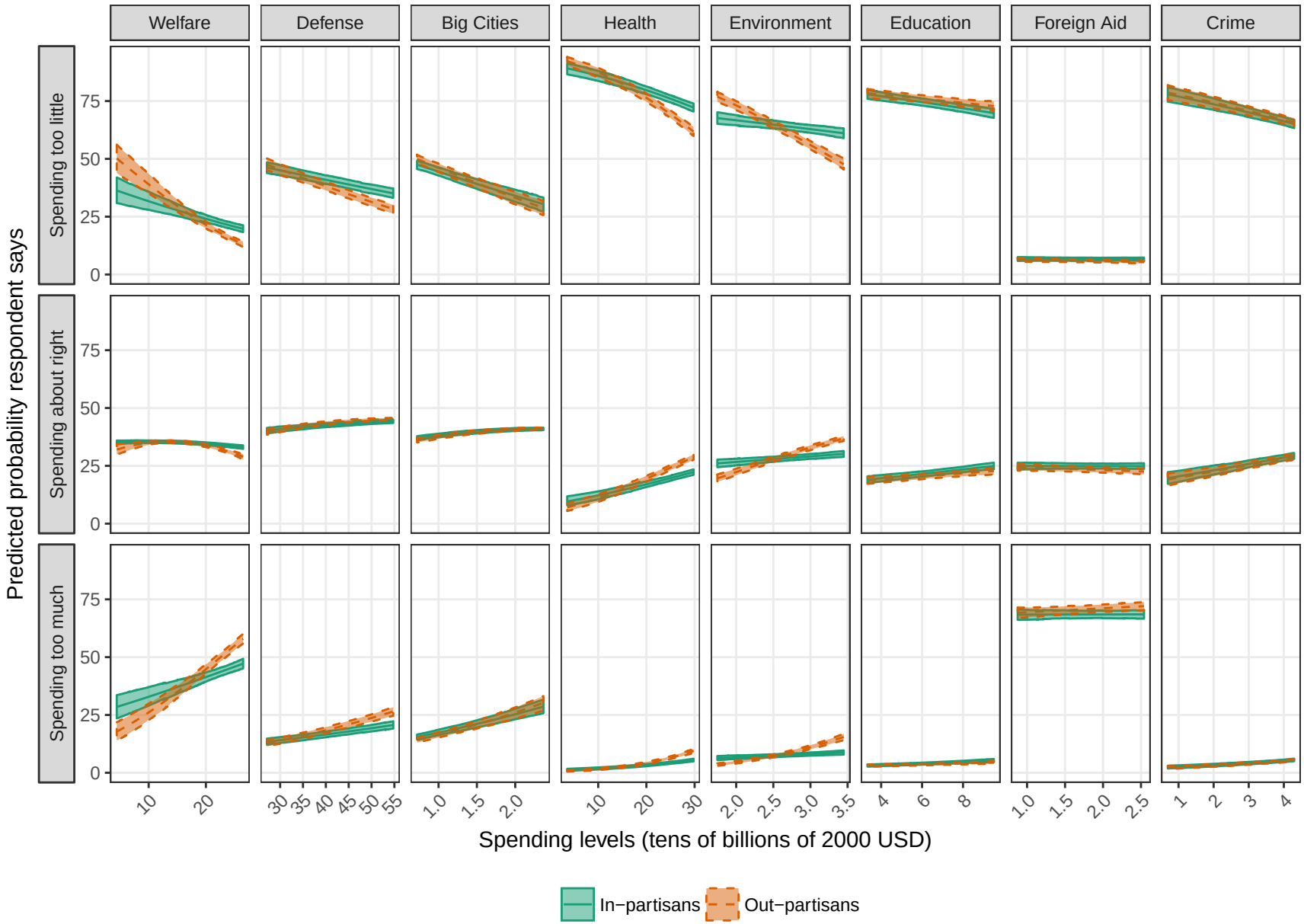


Figure 22: Predicted probabilities for all three answer options

A.2.4 Convergence and Autocorrelation Checks

Inspections of output indicate that the samplers converged fairly quickly. I visually inspected some of the plots to see if there were any obvious indications of nonconvergence; there were none. I also ran geweke diagnostics on the output of the posterior simulation; for the noninteractive models estimated from Equation 5, only 9.88 percent of the parameters exhibited a z score of greater than 1.96 or less than -1.96. For the interactive models from Equation 6, 7.87 percent exhibited extreme z values; in expectation, five percent should.

I also visually inspected some of the autocorrelation function plots, which indicated some autocorrelation, which is to be expected. To allay fears of especially high autocorrelation, I used the `effectiveSize` function from the `coda` R package to calculate effective sample size. The mean effective sample size for the noninteractive models from Equation 5 is 1,941.93 and the minimum value is 536.77 . For the interactive models estimated from Equation 6, the mean effective sample size is 1,916.37 and the minimum is 559.14 .

A.2.5 Partisan News Consumption

In the section "Explanation 1: Changes in Policy," I suggest that a logical extension of the work showing that in-partisans trust government more than out-partisans is that in-partisans are less likely to monitor government closely. This section examines the plausibility of that statement.

In a 2014 study titled, "Local News in a Digital Age," the Pew Research Center surveyed approximately 1,000 residents each of Denver, Colorado; Macon, Georgia; and Sioux City, Iowa on their news consumption. To see whether in-partisans consume less news than out-partisans, I rely on two questions from this study. The first asks respondents, "How closely do you follow national news?" and the second asks, "How closely do you follow news about the [Denver/Macon/Sioux City] area?" Response options are on a four point scale ranging from "very closely" to "not at all closely."

It is beneficial to have not only the national news questions but also the local news questions because it permits testing the plausibility of this mechanism at both the national and state level. I code partisans as being "national in-partisans" if they are Democrats (President Obama held office in 2014) and partisans are coded as "state in-partisans" according to whether they matched the party of the governor of their state (Democratic in Colorado, and Republican in Georgia and Iowa). I then ran an OLS regression model predicting news interest at the national level with whether or not individuals were "national in-partisans" and news interest at the local level with whether or not individuals were "state in-partisans."[58] The expectation is that the coefficient associated with in-partisans is negative.[59]

Results are reported in Table 11. Each column represents a separate regression, two for the national level (one with fixed effects for the city), and two for the local level (one with city fixed effects). In-partisans report following the news less closely than out-partisans at both the national and state level. This suggests that partisans do in fact monitor the government more closely when they are out-partisans than when they are in-partisans.

[58]I also ran simple differences in means as well as ordered probit models with no difference in the substantive results reported here.

[59]I recoded the variable so that higher values indicate following the news more closely.

Table 11: In partisans follow news less closely than out partisans

	Dependent variable:			
	national_news		local_news	
	(1)	(2)	(3)	(4)
In partisan, national	-0.075^{***}	-0.082^{***}		
	(0.025)	(0.025)		
Macon		0.011		0.063^{**}
		(0.031)		(0.031)
Sioux		-0.054^{*}		0.070^{**}
		(0.032)		(0.032)
In partisan, state			-0.059^{**}	-0.053^{**}
			(0.025)	(0.025)
Constant	-1.650^{***}	-1.633^{***}	-1.560^{***}	-1.610^{***}
	(0.018)	(0.027)	(0.018)	(0.028)
Observations	3,122	3,122	3,177	3,177
R^2	0.003	0.004	0.002	0.004
Adjusted R^2	0.002	0.004	0.001	0.003
Note:				*p<0.1; **p<0.05; ***p<0.01

A.3 Appendix for Partisan Policymaking

A.3.1 Robustness Checks

Results which do not pool the issues together are fairly brittle; there are only 25 observations and the regressions are likely too underpowered to reliably detect interaction effects. With only 18 degrees of freedom we might also fret about the asymptotic assumptions underlying the model. Nevertheless, results are presented in Table 12.

We also might be interested in whether the interaction terms are worth adding to the model. Perhaps politicians respond to all people, regardless of political view? Results above already suggest this is unlikely, and Table 13 provides further evidence of this. Clearly, results in the main text (Table 7) fit the data better than results without the interaction term.

A.3.2 Considering Independents

The main analysis of section 4 is an attempt to determine whether the preferences of one partisan group prevail over the preferences of another partisan group. For that reason and others (discussed near the end of subsection 4.3), independents and non-major-party partisans are excluded from the main analysis. In this section, we consider a related, though different question. Perhaps instead of representing one partisan group or the other, politicians must decide whether to represent their own partisans or independents.

In this section, we attempt to include independents in the analysis. We do so in two ways. First, we include independents and out-partisans together. This has the advantage that the two groups whose preferences we are pitting against each other remain more-or-less the same size as each other. To do this, taking Equation 8, we can conceptualize D as "in-partisan opinion" and R as "everyone else" (or vice versa). This tests a slightly different, though related, theory, that in-partisan opinion affects policy more than everyone else's opinion (in other words, not just more than the other party, but more than the other party and also

Table 12: Estimation by issue area

	spending			
	Defense	Education	Welfare	Health
	(1)	(2)	(3)	(4)
Democrat Net Support	−0.051*	0.019	0.055	−0.021
	(0.025)	(0.054)	(0.048)	(0.072)
Democrat President	1.037	0.784	1.421	1.351
	(0.787)	(4.746)	(2.902)	(5.605)
Republican Net Support	0.054***	−0.004	−0.012	0.026
	(0.016)	(0.040)	(0.052)	(0.060)
Proportion Republican Congress	−3.783	1.669	2.007	2.500
	(2.659)	(3.697)	(3.337)	(3.467)
Dem * Dem Prez	0.061**	−0.033	−0.018	0.002
	(0.026)	(0.121)	(0.055)	(0.109)
Rep * Dem Prez	−0.076***	0.040	0.012	−0.017
	(0.021)	(0.121)	(0.068)	(0.069)
Constant	0.743	−2.092	−1.520	−1.346
	(1.139)	(4.052)	(2.857)	(3.446)
Observations	25	25	25	25
R^2	0.643	0.076	0.270	0.092
Adjusted R^2	0.524	−0.231	0.026	−0.211
Residual Std. Error (df = 18)	0.649	1.119	1.014	1.075
F Statistic (df = 6; 18)	5.400***	0.248	1.107	0.302
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 13: Results without interactions

Democrats	0.016
	(0.011)
Republicans	−0.013
	(0.010)
Democratic President	0.034
	(0.206)
Proportion Republican Congress	0.631
	(1.524)
Observations	100
R^2	0.028
Adjusted R^2	−0.046
F Statistic	0.655 (df = 4; 92)
Note:	*p<0.1; **p<0.05; ***p<0.01
	Model includes fixed effects by issue area.

independents and minor party partisans). See Table 14 in for these results. The results do not change much, though the confidence intervals do overlap a bit more since these

However, pitting in-partisans' opinions against everyone else's opinions may not be a satisfactory test. If politicians are weighing whether to respond to their copartisans' opinions or independents (who presumably contain the median voter), perhaps we should let independent opinion compete directly against in-partisan opinion in the model. So instead of combining out-partisan opinion and independent opinion, we can simply let in-partisan opinion compete directly with independents' opinions.

Table 15 presents results where we model the effect of in-partisan opinion and independent opinion. Table 15 should be interpreted similar to Table 7. Figure 23 presents estimated quantities of interest and confidence intervals, akin to Figure 16. Results suggest that in-partisan opinion is more important than independents' opinions. Under a Republican

Table 14: Results for in-partisan and out-partisans

Not In-partisans	−0.001
	(0.013)
Democrat President	−0.251
	(0.227)
In partisans	0.014
	(0.013)
Proportion Republican Congress	0.673
	(1.447)
Not in-partisans * Dem Prez	−0.016
	(0.025)
In-partisans * Dem Prez	0.016
	(0.023)
Observations	100
R^2	0.145
Adjusted R^2	0.059
Note:	*p<0.1; **p<0.05; ***p<0.01
	Model includes fixed effects by issue area.

Table 15: Results for in-partisans and independents

In-partisan	0.026^{**}
	(0.011)
Democrat President	-0.147
	(0.229)
Independent	-0.007
	(0.011)
Proportion Republican Congress	0.679
	(1.469)
In partisan, Dem Prez	-0.015
	(0.028)
Ind, Dem Prez	0.018
	(0.029)
Observations	100
R^2	0.120
Adjusted R^2	0.032
Note:	*p<0.1; **p<0.05; ***p<0.01
	Model includes fixed effects by issue area.

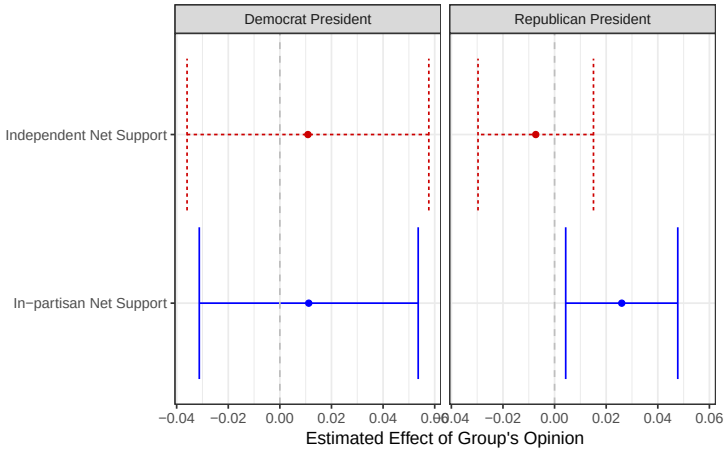


Figure 23: Estimated effects of In-partisan and Independent opinions under a Democratic and Republican Presidents.

president, in-partisan opinion is estimated to be quite a bit more important than independent opinion, though the confidence intervals do overlap some.

Under a Democratic president, it is more difficult to be sure; the point estimates for the effect of in-partisan net support and independent net support on policy change are very similar. This may be due to the fact that we have fewer observations under a Democratic president and also that Democrats' opinions are more correlated with independents' opinions than Republicans' opinions are (see Table 5).

5 References

Abramowitz, Alan and Kyle Saunders (2008). "Is Polarization a Myth?" *Journal of Politics* 70.2, pp. 542–555.

Ai, Chunrong and Edward Norton (2003). "Interaction Terms in Logit and Probit Models." *Economics Letters* 80.1, pp. 123–129.

Ansolabehere, Stephen, Marc Meredith, and Erik Snowberg (2012). "Asking About Numbers: Why and How." *Political Analysis* 21.1, pp. 48–69.

Ansolabehere, Stephen, Jonathan Rodden, and James Snyder (2008). "The Strength of Issues: Using Multiple Measures To Gauge Preference Stability, Ideological Constraint, and Issue Voting." *American Political Science Review* 102.02, pp. 215–232.

Ansolabehere, Stephen, James Snyder, and Charles Stewart III (2001). "The Effects of Party and Preferences on Congressional Roll-Call Voting." *Legislative Studies Quarterly* 26.4, p. 533.

Bafumi, Joseph and Michael Herron (2010). "Leapfrog Representation and Extremism: A Study of American Voters and Their Members in Congress." *American Political Science Review* 104.03, pp. 519–542.

Baldassarri, Delia and Andrew Gelman (2008). "Partisans Without Constraint: Political Polarization and Trends in American Public Opinion." *American Journal of Sociology* 114.2, pp. 408–446.

Bartels, Larry (2002). "Beyond the Running Tally: Partisan Bias in Political Perceptions." *Political Behavior* 24.2, pp. 117–150.

— (2005). "Homer Gets a Tax Cut: Inequality and Public Policy in the American Mind." *Perspectives on Politics* 3.01, pp. 15–31.

Baumgartner, Frank and Bryan Jones (1993). *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.

Bolsen, Toby, James Druckman, and Fay Lomax Cook (2013). "The Influence of Partisan Motivated Reasoning on Public Opinion." *Political Behavior* 36.2, pp. 235–262.

Bonica, Adam (2013a). *Database on Ideology, Money in Politics, and Elections*. Computer File. Public version 1.0.

— (2013b). "Mapping the Ideological Marketplace." *American Journal of Political Science* 58.2, pp. 367–386.

— (2015). "Measuring Public Spending Preferences Using an Interactive Budgeting Questionnaire." *Research & Politics* 2.2.

Brader, Ted and Joshua Tucker (2012). "Following the Party's Lead: Party Cues, Policy Opinion, and the Power of Partisanship in Three Multiparty Systems." *Comparative Politics* 44.4, pp. 403–15.

Brambor, Thomas, William Roberts Clark, and Matt Golder (2006). "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14.1, pp. 63–82.

Brandolini, Andrea and Timothy Smeeding (2006). "Patterns of Economic Inequality in Western Democracies: Some Facts on Levels and Trends." *PS: Political Science & Politics* 39.01, pp. 21–26.

Branham, J. Alexander (2018). "Partisan Feedback: Heterogeneity in Opinion Responsiveness." *Public Opinion Quarterly* 82.4, pp. 625–640.

Branham, J. Alexander and Stephen Jessee (2017). "Modeling Spending Preferences & Public Policy." *Electoral Studies* 49, pp. 155–172.

Branham, J. Alexander, Stuart Soroka, and Christopher Wlezien (2017). "When Do the Rich Win?" *Political Science Quarterly* 132.1, pp. 43–62.

Broockman, David (2013). "Distorted Communication, Unequal Representation: Constituents Communicate Less To Representatives Not of Their Race." *American Journal of Political Science* 58.2, pp. 307–321.

Bullock, John (2009). "Partisan Bias and the Bayesian Ideal in the Study of Public Opinion." *Journal of Politics* 71.3, pp. 1109–1124.

Bullock, John, Alan Gerber, Seth Hill, and Gregory Huber (2015). "Partisan Bias in Factual Beliefs About Politics." *Quarterly Journal of Political Science* 10.4, pp. 519–578.

Burstein, Paul (2003). "The Impact of Public Opinion on Public Policy: A Review and an Agenda." *Political Research Quarterly* 56.1, pp. 29–40.

Butler, Daniel and David Broockman (2011). "Do Politicians Racially Discriminate Against Constituents? A Field Experiment on State Legislators." *American Journal of Political Science* 55.3, pp. 463–477.

Butler, Daniel and David Nickerson (2011). "Can Learning Constituency Opinion Affect How Legislators Vote? Results From a Field Experiment." *Quarterly Journal of Political Science* 6.1, pp. 55–83.

Campbell, Andrea (2012). "Policy Makes Mass Politics." *Annual Review of Political Science* 15.1, pp. 333–351.

Campbell, Angus, Philip Converse, Warren Miller, and Donald Stokes (1960). *The American Voter*. University of Chicago Press.

Carpini, Michael Delli and Scott Keeter (1997). *What Americans Know about Politics and Why it Matters*. Yale University Press.

Citrin, Jack (1979). "Do People Want Something for Nothing: Public Opinion on Taxes and Government Spending." *National Tax Journal* 32.2, pp. 113–129.

Claassen, Ryan and Michael Ensley (2016). "Motivated Reasoning and Yard-Sign-Stealing Partisans: Mine Is a Likable Rogue, Yours Is a Degenerate Criminal." *Political Behavior* 38.2, pp. 317–335.

Clinton, Joshua, Simon Jackman, and Douglas Rivers (2004). "The Statistical Analysis of Roll Call Data." *American Political Science Review* 98.02, pp. 355–370.

Cohen, Geoffrey (2003). "Party Over Policy: The Dominating Impact of Group Influence on Political Beliefs." *Journal of Personality and Social Psychology* 85.5, pp. 808–822.

Colombo, Céline and Hanspeter Kriesi (2016). "Party, Policy - Or Both? Partisan-Biased Processing of Policy Arguments in Direct Democracy." *Journal of Elections, Public Opinion and Parties* 27.3, pp. 235–253.

Conover, Pamela Johnston, Stanley Feldman, and Kathleen Knight (1986). "Judging Inflation and Unemployment: the Origins of Retrospective Evaluations." *Journal of Politics* 48.3, pp. 565–588.

Converse, Philip (1964). "The Nature of Belief Systems in Mass Publics." *Ideology and Discontent*. Ed. by D. E. Apter. New York: The Free Press, pp. 601–661.

Downs, Anthony (1960). "Why The Government Budget Is Too Small in a Democracy." *World Politics* 12.04, pp. 541–563.

Druckman, James and Thomas Leeper (2012). "Is Public Opinion Stable? Resolving the Micro/macro Disconnect in Studies of Public Opinion." *Daedalus* 141.4, pp. 50–68.

Ellis, Christopher and Christopher Faricy (2011). "Social Policy and Public Opinion: How the Ideological Direction of Spending Influences Public Mood." *Journal of Politics* 73.04, pp. 1095–1110.

Ellis, Christopher and James Stimson (2012). *Ideology in America*. Cambridge University Press.

Enns, Peter (2015). "Relative Policy Support and Coincidental Representation." *Perspectives on Politics* 13.04, pp. 1053–1064.

Enns, Peter and Paul Kellstedt (2008). "Policy Mood and Political Sophistication: Why Everybody Moves Mood." *British Journal of Political Science* 38.3, pp. 433–454.

Enns, Peter and Christopher Wlezien (2011). *Who Gets Represented?* Russell Sage Foundation.

Erikson, Robert, Michael MacKuen, and James Stimson (2002). *The Macro Polity*. New York: Cambridge University Press.

Ezrow, Lawrence, Margit Tavits, and Jonathan Homola (2014). "Voter Polarization, Strength of Partisanship, and Support for Extremist Parties." *Comparative Political Studies* 47.11, pp. 1558–1583.

Fiorina, Morris and Samuel Abrams (2008). "Political Polarization in the American Public." *Annual Review of Political Science* 11, pp. 563–588.

Fiorina, Morris, Samuel Abrams, and Jeremy Pope (2008). "Polarization in the American Public: Misconceptions and Misreadings." *Journal of Politics* 70.2, pp. 556–560.

Flavin, Patrick (2012). "Income Inequality and Policy Representation in the American States." *American Politics Research* 40.1, pp. 29–59.

Franklin, Mark and Christopher Wlezien (1997). "The Responsive Public Issue Salience, Policy Change, and Preferences for European Unification." *Journal of Theoretical Politics* 9.3, pp. 347–363.

Galston, William (2001). "Political Knowledge, Political Engagement, and Civic Education." *Annual Review of Political Science* 4.1, pp. 217–234.

Gelman, Andrew and Donald Rubin (1992). "Inference From Iterative Simulation Using Multiple Sequences." *Statistical science*, pp. 457–472.

Gerber, Alan and Gregory Huber (2010). "Partisanship, Political Control, and Economic Assessments." *American Journal of Political Science* 54.1, pp. 153–173.

Gerber, Alan, Gregory Huber, and Ebonya Washington (2010). "Party Affiliation, Partisanship, and Political Beliefs: A Field Experiment." *American Political Science Review* 104.04, pp. 720–744.

Gershtenson, Joseph, Jeffrey Ladewig, and Dennis Plane (2006). "Parties, Institutional Control, and Trust in Government." *Social Science Quarterly* 87.4, pp. 882–902.

Geweke, John (1991). *Evaluating the Accuracy of Sampling-Based Approaches to the Calculation of Posterior Moments*. Vol. 196. Federal Reserve Bank of Minneapolis, Research Department Minneapolis, MN, USA.

Gilens, Martin (June 2001). "Political Ignorance and Collective Policy Preferences." *American Political Science Review* 95 (02), pp. 379–396.

— (2012). *Affluence and Influence: Economic Inequality and Political Power in America*. Princeton University Press.

Gilens, Martin and Benjamin Page (2014). "Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens." *Perspectives on Politics* 12.03, pp. 564–581.

Gill, Jeff (2008). "Is Partial-Dimension Convergence a Problem for Inferences From Mcmc Algorithms?" *Political Analysis* 16.2, pp. 153–178.

Gonthier, Frederic (2016). "Parallel Publics? Support for Income Redistribution in Times of Economic Crisis." *European Journal of Political Research* 56.1, pp. 92–114.

Goren, Paul, Christopher Federico, and Miki Caul Kittilson (2009). "Source Cues, Partisan Identities, and Political Value Expression." *American Journal of Political Science* 53.4, pp. 805–820.

Griffin, John and Brian Newman (2005). "Are Voters Better Represented?" *Journal of Politics* 67.04, pp. 1206–1227.

Hansen, John Mark (1998). "Individuals, Institutions, and Public Preferences Over Public Finance." *American Political Science Review* 92.3, pp. 513–531.

Heckman, James and James Snyder (1996). *Linear Probability Models of the Demand for Attributes with an Empirical Application to Estimating the Preferences of Legislators*. Tech. rep. National Bureau of Economic Research.

Heidelberger, Philip and Peter Welch (1983). "Simulation Run Length Control in the Presence of an Initial Transient." *Operations Research* 31.6, pp. 1109–1144.

Holbrook, Thomas (1996). *Do Campaigns Matter?* Sage.

Jacoby, William (1994). "Public Attitudes Toward Government Spending." *American Journal of Political Science* 38.2, pp. 336–361.

— (2000). "Issue Framing and Public Opinion on Government Spending." *American Journal of Political Science* 44.4, pp. 750–767.

— (2008). "Comment: The Dimensionality of Public Attitudes Toward Government Spending." *Political Research Quarterly* 61.1, pp. 158–161.

Jessee, Stephen (2009). "Spatial Voting in the 2004 Presidential Election." *American Political Science Review* 103.01, pp. 59–81.

— (2016). "(How) Can We Estimate the Ideology of Citizens and Political Elites on the Same Scale?" *American Journal of Political Science* 60, pp. 1108–1124.

Johnson, Tyler and Paul Kellstedt (2013). "Media Consumption and the Dynamics of Policy Mood." *Political Behavior* 36.2, pp. 377–399.

Kayser, Mark Andreas and Christopher Wlezien (2011). "Performance Pressure: Patterns of Partisanship and the Economic Vote." *European Journal of Political Research* 50.3, pp. 365–394.

Keele, Luke (2005). "The Authorities Really Do Matter: Party Control and Trust in Government." *Journal of Politics* 67.3, pp. 873–886.

Keith, Bruce, David Magleby, Candice Nelson, Elizabeth Orr, and Mark Westlye (1992). *The Myth of the Independent Voter*. University of California Press.

Krimmel, Katherine and Kelly Rader (2017). "The Federal Spending Paradox: Economic Self-Interest and Symbolic Racism in Contemporary Fiscal Politics." *American Politics Research* 45.5, pp. 727–754.

Lauderdale, Benjamin (2010). "Unpredictable Voters in Ideal Point Estimation." *Political Analysis* 18.2, pp. 151–171.

Lax, Jeffrey and Justin Phillips (2012). "The Democratic Deficit in the States." *American Journal of Political Science* 56.1, pp. 148–166.

Lelkes, Yphtach (2016). "Mass Polarization: Manifestations and Measurements." *Public Opinion Quarterly* 80.S1, pp. 392–410.

Lenz, Gabriel (2009). "Learning and Opinion Change, Not Priming: Reconsidering the Priming Hypothesis." *American Journal of Political Science* 53.4, pp. 821–837.

Leon, Andrew C and Moonseong Heo (2009). "Sample Sizes Required To Detect Interactions Between Two Binary Fixed-Effects in a Mixed-Effects Linear Regression Model." *Computational Statistics & Data Analysis* 53.3, pp. 603–608.

Lerman, Amy and Katherine McCabe (2017). "Personal Experience and Public Opinion: A Theory and Test of Conditional Policy Feedback." *Journal of Politics* 79.2, pp. 624–641.

Levendusky, Matthew (2009). *The Partisan Sort: How Liberals Became Democrats and Conservatives Became Republicans*. University of Chicago Press.

MacKuen, Michael, Robert Erikson, and James Stimson (1992). "Peasants Or Bankers? The American Electorate and the U.S. Economy." *American Political Science Review* 86.03, pp. 597–611.

McCarty, Nolan, Keith Poole, and Howard Rosenthal (2006). *Polarized America: The Dance of Ideology and Unequal Riches*. MIT Press.

McCright, Aaron and Riley Dunlap (2011). "The Politicization of Climate Change and Polarization in the American Public's Views Of Global Warming, 2001-2010." *Sociological Quarterly* 52.2, pp. 155–194.

Mullinix, Kevin (2016). "Partisanship and Preference Formation: Competing Motivations, Elite Polarization, and Issue Importance." *Political Behavior* 38.2, pp. 383–411.

Olson, Mancur (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press.

Orriols, Lluís (2010). "Social Spending, Partisan Bias and Vote Choice. Evidence From the U.S." *Electoral Studies* 29.1, pp. 54–65.

Pacheco, Julianna (2013a). "Attitudinal Policy Feedback and Public Opinion: The Impact of Smoking Bans on Attitudes Towards Smokers, Secondhand Smoke, and Antismoking Policies." *Public Opinion Quarterly*, pp. 714–734.

— (2013b). "The Thermostatic Model of Responsiveness in the American States." *State Politics & Policy Quarterly* 13.3, pp. 306–332.

Page, Benjamin and Robert Shapiro (1992). *The Rational Public: Fifty Years of Trends in Americans' Policy Preferences*. University of Chicago Press.

Pierce, Lamar, Todd Rogers, and Jason Snyder (2016). "Losing Hurts: The Happiness Impact of Partisan Electoral Loss." *Journal of Experimental Political Science* 3.01, pp. 44–59.

Pitkin, Hanna (1967). *The Concept of Representation*. University of California Press.

Plummer, Martyn (2003). "JAGS: A Program for Analysis of Bayesian Graphical Models using Gibbs Sampling." *Proceedings of the 3rd International Workshop on Distributed Statistical Computing*. Vol. 124. Vienna, p. 125.

Plummer, Martyn (2015). *rjags: Bayesian Graphical Models using MCMC*.

Poole, Keith and Howard Rosenthal (1991). "Patterns of Congressional Voting." *American Journal of Political Science* 35.1, p. 228.

— (2000). *Congress: A Political-Economic History of Roll Call Voting*. Oxford University Press.

— (2011). *Ideology and congress*. Transaction Publishers.

Rasinski, Kenneth (1989). "The Effect of Question Wording on Public Support for Government Spending." *Public Opinion Quarterly* 53.3, pp. 388–394.

Ray, Leonard (2003). "When Parties Matter: The Conditional Influence of Party Positions on Voter Opinions About European Integration." *Journal of Politics* 65.4, pp. 978–994.

Richman, Jesse (2011). "Parties, Pivots, and Policy: The Status Quo Test." *American Political Science Review* 105.01, pp. 151–165.

Rocha, Rene and Rodolfo Espino (2009). "Racial Threat, Residential Segregation, and the Policy Attitudes of Anglos." *Political Research Quarterly* 62.2, pp. 415–426.

Schneider, Saundra and William Jacoby (2005). "Elite Discourse and American Public Opinion: The Case of Welfare Spending." *Political Research Quarterly* 58.3, p. 367.

Schuman, Howard and Stanley Presser (1981). *Questions and Answers in Attitude Surveys: Experiments on Question Form, Wording, and Context*. Sage.

Shor, Boris and Nolan McCarty (Aug. 2011). "The Ideological Mapping of American Legislatures." *American Political Science Review* 105.03, pp. 530–551.

Soroka, Stuart and Christopher Wlezien (2008). "On the Limits To Inequality in Representation." *PS: Political Science & Politics* 41.02, pp. 319–327.

— (2010). *Degrees of Democracy*. Cambridge University Press.

Soss, Joe and Sanford Schram (2007). "A Public Transformed? Welfare Reform As Policy Feedback." *American Political Science Review* 101.01, pp. 111–127.

Stimson, James (1991). *Public Opinion in America: Moods, Cycles, and Swings*. Vol. 14. Westview Press.

Theriault, Sean (2006). "Party Polarization in the Us Congress: Member Replacement and Member Adaptation." *Party Politics* 12.4, pp. 483–503.

— (2013). *The Gingrich Senators*. Oxford University Press.

Ura, Joseph Daniel and Christopher Ellis (2008). "Income, Preferences, and the Dynamics of Policy Responsiveness." *PS: Political Science & Politics* 41.04, pp. 785–794.

— (2012). "Partisan Moods: Polarization and the Dynamics of Mass Party Preferences." *Journal of Politics* 74.01, pp. 277–291.

Webster, Steven and Alan Abramowitz (2017). "The Ideological Foundations of Affective Polarization in the U.S. Electorate." *American Politics Research* 45.4, pp. 621–647.

Weissberg, Robert (1978). "Collective Vs. Dyadic Representation in Congress." *American Political Science Review* 72.2, pp. 535–547.

Welch, Susan (1985). "The "More for Less" Paradox: Public Attitudes on Taxing and Spending." *Public Opinion Quarterly* 49.3, pp. 310–316.

Williams, Laron (2015). "Estimating the Defense Spending Vote." *Electoral Studies* 39, pp. 243–255.

Wlezien, Christopher (1995). "The Public As Thermostat: Dynamics of Preferences for Spending." *American Journal of Political Science* 39, pp. 981–1000.

— (2005). "On the Salience of Political Issues: The Problem With 'Most Important Problem'." *Electoral Studies* 24.4, pp. 555–579.

— (2016). "Public Opinion and Policy Representation: On Conceptualization, Measurement, and Interpretation." *Policy Studies Journal* 45.4, pp. 561–582.

— (2017). "Policy (Mis) Representation and the Cost of Ruling: U.S. Presidential Elections in Comparative Perspective." *Comparative Political Studies* 50.6, pp. 711–738.

Wlezien, Christopher and Stuart Soroka (2003). "Measures and Models of Budgetary Policy." *Policy Studies Journal* 31.2, pp. 273–286.

— (2012). "Political Institutions and the Opinion-Policy Link." *West European Politics* 35.6, pp. 1407–1432.