
Three Models of Opinion Dynamics

A Book Proposal for Cambridge Elements: American Politics
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Overview

The study of substantive representation hinges on accurately measuring public preferences for government goods and services and assessing the relationship between those demands and government outputs. This Elements project makes advances in both areas. First, we develop a novel theory that outlines the important role of the two major political parties in facilitating public responsiveness. On issues where the parties regularly take opposing positions (that is, on most welfare state or size-of-government issues), the public can infer the direction of policy change in Washington simply by knowing which party is in control. *Public Policy Mood*, therefore, can cycle over time in response to changes in party control of government. This is central to the widely accepted thermostatic theory of public opinion, originally developed by Wlezien in a 1995 article and adapted by Stimson in his book, *Public Opinion in America: Moods, Cycles, and Swings*. Stimson noted a certain number of orthogonal cases that did not fit with the majority of the observations. Here, we catalogue a larger set of policy-specific opinion series as Stimson did almost 30 years ago, and develop three models of public opinion—expanding beyond the thermostat—to offer a more complete picture of public opinion. Building on the work of Wlezien (1995) and Stimson (1991), we develop the “thermostatic inference model,” which predicts opinion cycling in response to party control of government. This model

explains the plurality of observations now just as it did in Wlezien's original work. But, rather than treat the outliers as unexplained variance, we propose an understanding of each. Our model is entirely consistent with the original model, including a central place for party competition in determining the public opinion response. But our model lowers expectations for the amount of knowledge individuals must have about government action for opinion cycling to occur, and identifies cases where patterns other than cycling are expected.

Two additional models apply when the parties do not offer consistently opposing views. One is where social movements have challenged societal norms and promoted the expansion of rights for groups that have historically been marginalized. As individuals embrace these new inclusive values, demand for government policies that facilitate equality increases, generating *absolute* rather than *relative* opinion change. Certain issues, including civil rights for racial minorities, women, and members of the LGBTQ community, activate cleavages that transcend the partisan divide. While the parties may take leading or lagging positions on these shifts, both parties move in the liberal direction over time, as does the public. Backlash is possible, as with the current debates about transgender rights, but in the long-run, the system has moved toward acceptance. Public opinion on these issues trends over time in one direction rather than cycling in response to changes in party control. These trends are due, in large part, to generational replacement. Individuals from younger cohorts are socialized in a more inclusive environment, leading them to more fully embrace pro-rights values than did members of older cohorts. As public opinion moves in a liberal, pro-equality direction over time, so too, does public policy. With no dramatic differences in government policy following from which party controls government in these cases, but with social norms rapidly evolving over time, public opinion follows a steady trend. We document such powerful and long-term shifts in aggregate opinion in

the cases of women's rights, civil rights for African-Americans, and issues related to the rights of gays and lesbians.

A third class of public policies are those on which there is neither systematic partisan difference nor an overt cultural dimension. These are issues that may have more of a geographic basis of division in American politics (e.g., how to handle public lands, a topic of little concern east of the Mississippi, but politically powerful in the west), or on which the parties largely agree, such as on the value of space exploration, reforms of the criminal code, or the value of drug treatment programs. With no systematic and consistent party cue, the public cannot infer from a shift in control that policy on these issues will likely move in any particular direction. Therefore, we expect no particular pattern of opinion change in response to changes in government. Stability ensues.

The theoretical framework we develop uses the well-known thermostatic model as a starting point. We build on it by outlining the key role of consistent party cues in shaping citizen inferences. We suggest that opinion cycling only occurs when consistent party cues are present. In fact, because most policy issues are consistently politicized, and because we show that very low levels of public knowledge about government are needed for cycling to occur, our thermostatic inference model is the most widely applicable. But there are topics on which the parties do not regularly take opposing views, or where both parties evolve over time in response to shifting cultural mores. In sum, we outline three patterns of public opinion (cycling, trending, and stable) that correspond to different cues, and to different patterns of policy output. We view the original thermostatic model as the largest and most important branch in a theoretical structure that also includes two smaller branches.

To test our theory, we develop and classify 66 new measures of policy-specific mood, the largest effort so far undertaken. Data collection was funded with support from the National Science Foundation and the resulting data set is the first of its kind. Each of these time series measures captures macro-level demand for government liberalism in policy domains ranging from taxes, to health care reform, to air pollution, to women's rights. For the first time, we are able to study the dynamics of public opinion on a broad array of specific policy topics over the course of decades. For each topic, we assess the degree to which the issue has been consistently politicized and test whether public opinion cycles, trends, or remains flat over time. We then take a close look at the types of policies that fit each model of opinion dynamics and further explore the relationships between policy outputs and public preferences that define them.

Our book is organized into five sections, as follows.

1. Introduction

This section outlines the literature on macro-level public opinion and develops the theory tested in subsequent sections. We postulate that the public has a general understanding of the main lines of disagreement between the parties, but is not familiar and indeed need not be concerned with the latest policy positions taken by party elites. The public simply knows that the Democrats want government to do more and spend more, and that Republicans take roughly the opposite position. And, the electorate also knows which party controls the White House at any given time.¹

Consistent party cues allow an inattentive public to have a rough idea of where the parties stand on the issues that regularly divide them, and to know in what direction the government is

¹ In order to make our hypothesized cognitive demands on the public as low as possible, we use control of the White House as the key variable of interest. In supplemental materials, we assess whether the model fits better if we use more complicated operationalizations, such as distinguishing between unified and split control. These complications add little value.

probably trending. The public uses this knowledge to make inferences about public policy. If, for example, a Democrat is in the White House, regardless of the specifics of legislation proposed or acted upon, it infers that welfare state policy is changing in a liberal, government-expanding direction. The party cue provides a critical shortcut that reaches essentially similar conclusions about what government is doing (and spending) to what would emerge from detailed and careful knowledge, but obviates the need for attention to detail.

Using and responding to these cues leads to the thermostatic inference response. Over time, citizens with relatively fixed preferences for more or less government encounter the changing stimulus of alternating party control in Washington. When, in the aggregate, they believe government outputs are becoming more liberal (that is, when Democrats are in control), the public calls, on average, for more conservative policies, and vice versa. Public demand for more or less government, therefore, cycles over time with party control of government. This cycling can occur even if no citizen ever changes her level of liberalism or conservatism in an absolute sense. It is the public's response to changing party cues—not changes in underlying policy preferences—that drives the thermostatic response. This is *relative* opinion change.

In domains that have been subject to large-scale social and cultural shifts, members of the public have changed their policy preferences over time, becoming more liberal over the long-haul. This *absolute* opinion change does not happen in response to a party cue, but comes in response to a social, economic, or other stimulus (a war, economic depression, social movement, etc.). When this type of change occurs, it is profound—it involves the rejection of a previously accepted world view—and is typically permanent. Moreover, when many people respond to a given event in the same way, this can be the start of a trend in public opinion that spans generations. Take, for instance, support for policies that facilitate equality for African

Americans. During the 1960's, public opinion on civil rights was shaped by a pro-equality social movement. The movement was successful in spurring changes in public opinion and public policy, which both moved in the liberal direction over the course of the decade. But rather than receding or leveling off, support for policies that facilitate equality has only continued to grow over subsequent decades.

Generational replacement explains much of this trend. While many individuals who lived through the Civil Rights Movement were affected by it directly—and many updated their beliefs about equality in response to it—individuals who came of age subsequently were socialized in a more inclusive environment. For members of this younger cohort, higher levels of tolerance and inclusivity seemed natural and were more easily adopted. That means that once a belief in equality begins to evolve, it is swept along by the tidal force of demography. The young become the middle-aged and create a still more tolerant context for the next generation. And equally, the older generations who do not accept the changed views leave the electorate, resulting in a steady, linear process of increased liberalism. Absolute opinion change is, therefore, self-reinforcing as generational replacement results in trending (rather than cycling or static) public opinion. Crucially, partisan cues differ in these cases from the more typical scope-of-government questions. While the parties may have been leaders or laggards on the issue, both have shifted dramatically over time when considered over the generations. A partisan divide may be present at any given time, but it is swamped in magnitude by the long-term generational shift of both.

Finally, some public issues simply exist outside of the domain of either consistent partisan conflict or cultural considerations. The federal government makes policies in a number of areas that never become party-defining issues. This includes decisions about which NASA missions to prioritize, levels of funding for scientific research, fighting cancer, how to regulate

public lands, and what rules should govern national parks. In these and many other issue areas, the conflicts about what to do have not broken along party lines. As a consequence, the distinctive party cues that the thermostatic model requires do not exist. Here, Democratic and Republican governments pursue similar courses of action, and as a result, policy outputs are consistent over time, or change in ways that are uncorrelated with party control. We demonstrate that, for these issues, neither government outputs nor public opinion vary systematically with the party in power. Instead, both are stable over time.

To test the theory developed here, we create 66 new measures of policy-specific mood as mentioned above. To create this database, we began with Stimson's (1991) Policy Mood database: a rich collection of repeated survey questions asked to the public over the past 60 years. Stimson's original purpose was to develop a global level measure of domestic policy mood: a single time-serial estimate of the public's changing views. To do so, Stimson collected all available survey questions that tapped into public policy preferences, ranging from matters of education, to the environment, to business regulation, to minority aid—and everything else in the domestic policy domain. Using the dyad ratios algorithm, Stimson estimated a single longitudinal measure that encapsulated the public's desire for more or less government.

Scholars across subfields embraced the measurement of global policy mood. For the first time, there existed a comprehensive, robust, and longitudinal reading of the public's disposition. Scholars studying public attitudes toward particular policy topics, such as aid to minorities, welfare, abortion, and so on have long been interested in creating similar measures for their specific areas of interest.² In most instances, the data were not “thick” enough to permit this type

² And in a few instances such series were created. See, for instance Kellstedt (2003 on racial attitudes); Baumgartner, DeBoef and Boydston (2008 on the death penalty); or Enns (2016 on punitiveness and incarceration).

of disaggregation. More than two decades later, however, the dataset now consists of 364 survey questions administered 7,693 times, the largest collection of public opinion data of its kind. Such massive numbers create a new opportunity, one unprecedented in the field of political science, to estimate multiple policy moods. We now have the ability to disaggregate Public Policy Mood and estimate longitudinal public opinion in more than 60 policy domains. And we have done exactly this: from military spending to health care to gun control to abortion, we now have a clear read on the evolution of public attitudes.³ We conclude the introductory section by detailing the steps taken to create the new dataset before briefly outlining the plan for the book.

2. Thermostatic Public Opinion Response to Changes in Partisan Control of Government

Here, we revisit the assumptions of the original thermostatic model (Wlezien 1995) and consider the conditions under which they hold. We hypothesize that very low levels of public knowledge are required for the model to work. In contrast to the original model (which posits members of the public need to know something about what the government is *actually* doing or spending to work), we hypothesize that public only needs to know: 1) That Democrats tend to support liberal, government expanding policies, and Republicans tend to support conservative, government contracting policies; and 2) Which party controls the White House. Of course, it could be that the public knows more, or should know more, but these are the minimal conditions for the model to work. If a policy topic has been consistently politicized over time, the public can use this information to decide whether policy is moving in the liberal or conservative direction, simply by knowing who is in control (whether or not policy is *actually* moving in these directions). This

³ Supplemental materials assess the technical details of how strong our estimates are for each issue, how many observations provide the estimates, and so on. All of the time-series pass our own strict tests for reliability; many other possible series had too few survey observations to be included. In sum, we have confidence in all the series but of course some are based on more observations than others.

results in opinion cycling in response to party cues, which we refer to as “the thermostatic inference model.” But where party cues are absent, we should not observe opinion cycling.

To test these hypotheses, we first classify each of the 66 issues in our dataset as one that has or has not been consistently politicized. We do this by constructing time-series measures of national news coverage for each issue. Policy issues at the center of partisan debates receive demonstrably more news coverage than do issues around which there is partisan consensus (Atkinson 2017). This method, therefore, allows us to identify the most hotly contested issues and to observe changes in levels of partisan conflict over time. We then test whether opinion on each issue has cycled with party control in Washington, remained flat, or trended over time. We develop a simple test of the idea that opinion movement cycles in response to changes in presidential party control, the key to our theory of what drives the thermostat. We define movement as a year to year first difference, $\Delta y = y_t - y_{t-1}$ for all t . Because positive values on our opinion measure, *Mood*, reflect movements toward liberalism, we assign a value of +1 to years with a Democrat in the White House, and -1 for Republican Presidents. Looking at public opinion over time in a model also including this partisan control variable, our party-reflected first differences should be negative on average if the thermostatic response is operating.

Thus, we need to observe the mean of the party-reflected first differences score to test our hypothesis. If the mean is zero, then there is no evidence of thermostatic response. If negative, then there is evidence of the thermostatic response. And if positive, we have a strange animal that is definitely not thermostatic but rather a potentially self-reinforcing (and unstable) amplification effect. So a simple test against a mean of zero provides the test of the thermostatic inference response. “Party-reflected mean first differences” is a mouthful, so we refer to the coefficient simply as the “thermostatic inference test.”

We find precisely what we expect. For 20 of 21 highly and consistently politicized issues, the test produces negative coefficients, indicating public opinion movement away from the position of the party in power.⁴ (Of these, half are significantly negative and the other half correctly signed, but nonsignificant. The probability of observing 20 out of 21 negative is, of course, trivially small.)

Next, we perform our test on three issues that have been the subject of major social movements: civil rights for African Americans, women, and LGBT individuals. These are issues where the main stimulus for opinion change has come from sources other than the parties, and where we expect *absolute* opinion change. We find that opinion on these three issues trends in the liberal direction over time, as expected. As Americans become ever more supportive of equal rights for blacks, women, and gays, they are not responding to the party of government.⁵ Instead, each in its own way responds gradually to changing social norms, successful social movements, and important historical events. These stimuli set into motion absolute opinion change on the individual level and at the generational level. We examine this dynamic more thoroughly in Section 3.

Finally, we perform the same test on a set of 10 issue domains that historically are characterized by absence of party cues or cues that are only episodically partisan and not overtly cultural. Because these issues are seen either as universally popular (e.g., Social Security and crime prevention) or technical (e.g., NASA, science, public lands), parties typically offer the same policies. When they do offer distinct positions, it is usually only for brief periods of time.

⁴ We limit these tests to series with at least 30 years of observations.

⁵ In the case of civil rights for African-Americans we can detect some thermostatic response (Kellstedt 2003), but it is largely overwhelmed by an underlying linear trend toward great acceptance of equality.

Thus, there is no dominant alternating stimulus that could produce the cycling with party control that we see in party cue issues.⁶ We find that only four of the 10 issue domains have negative reactions to current policy and none significantly. Instead we see clear evidence that changing party control does not matter. These cases are the focus of Section 4.

3. Absolute Opinion Change

Absolute changes cannot be explained by changes in government policy or party control. Some other stimulus is required. Whatever that stimulus may be (e.g., successful social movements or a powerful social event that reframes an issue), it induces both absolute opinion change among individuals and sets the ball rolling for generational change. We are deliberately general in our language here—we make room for a variety of stimuli to set this type of opinion change in motion.

We conceive of absolute change as true opinion change, either by individuals or by generations or by both. If true change is occurring, then it will not be subjected to cancellation or reversal by changed government policy. Absolute change is not a response to a cycling stimulus and therefore there is no reason to expect it to cycle. The force of actual opinion change and generational replacement are the active agents (as opposed to party control in cycling opinion).

Support for civil rights for historically marginalized groups offers prime examples of absolute opinion change. First for African Americans, then for women, and then for gays and lesbians, American beliefs have evolved toward a new belief in equality. The status quo, in all

⁶ Social Security is a potential party cue issue, a Democratic program that Republicans itch to oppose, and have sometimes done so (such as with the 2005 efforts by Pres. George W. Bush to privatize parts of the program). But because of its overwhelming popularity, these efforts are rare, politically dangerous, and ineffective, and neither party proposes cuts to the program in its platform. They express themselves as in favor of “entitlement reform,” unwilling either to name the program they wish to “reform” or to use the more direct word “cut” for the reform they have in mind.

cases, was a traditional society which held that discrimination was the natural order of things. Not to be too timid about the matter, most Americans believed that blacks and women were biologically inferior, and gays morally inferior, all of which justified a society in which discrimination was both expected and normal—and assertions of equality were considered radical and deviant. Needless to say, such attitudes are no longer accepted by most Americans, or considered acceptable generally. But it is important to recognize that they were once widespread, and that on these important policies, the dynamics of opinion change over time are not similar to those reviewed in Section 2.

In this Section, we make our way through three issues, taking on each one separately so as to dissect the component parts of the mood series and gain a better understanding of the driving forces behind opinion change. We also explore the relationship between public opinion and government action. Unlike the dynamics of the thermostatic inference cases, public policy and opinion on rights issues typically move together in the same (liberal) direction over time. Occasional cycling—which we might think of as temporary backlashes against changing social norms—is subsumed into the larger pro-equality trend over the course of decades. But this is not to say that the volume of policy change is correlated with the share of the public in favor of such change. In fact, we find evidence that the amount of policy activity on rights issues diminishes over time, even as the share of the public demanding such change increases. We explore this dynamic and argue that it reflects public consensus around ending *de jure* discrimination and disagreement over policies designed to end *de facto* discrimination.

Finally, we examine the dual effects of within- and between-cohort effects on trends in equality mood. Our expectation is that both will have strong effects on the trends we observe. We believe, for example, that a previously anti-gay rights individual may learn that a coworker

that he or she respects deeply is gay, and thus, changes his or her views on equality for gays and lesbians because of that experience. Likewise, many who lived through the emotional Civil Rights marches of the early 1960s, observing violent attacks on peaceful protesters, were moved to support civil and voting rights for African Americans. These types of changes represent absolute opinion change among individuals over time. They are not rare occurrences. Indeed, these individual level shifts in opinion play a significant role in explaining absolute opinion change. These are within-cohort effects.

There is another force at work as well, that of generational change. Here, attitude change is a function of generational or cohort differences among groups of people born at different times. In other words, because of changing social conditions that alter the socialization experience of each successive cohort, younger generations become more equality-accepting than their older counterparts. We expect both of these factors have worked together to create the pro-equality trends we observe.

Our statistical model for estimating these types of change is an analysis of covariance, which simultaneously estimates the fixed effects of belonging to a particular cohort and the linear trends in attitude change within cohorts. What we learn from this analysis is that both sources of change are powerful. For instance, in the analysis of attitudes toward equality for African Americans, the share of individuals in support of full equality is almost 40 points greater for the youngest cohort as compared with the oldest. In all three cases, the cohort progression is monotonic. No older group is ever more liberal than is a younger group.

Each cohort, itself, also becomes more supportive of equality over time. Looking again at support for racial equality, each cohort becomes more liberal (at 1.31% each year) over time, resulting in about a 37 point change, on average, for the 28 year span examined. This result could

only occur if large numbers of respondents of all ages were undergoing individual changes, moving from anti-equality to pro-equality. These findings are heartening from a normative perspective, and offer a lens through which we can examine the recent spike in anti-equality attitudes. We conclude the Section by discussing the implications of our findings for contemporary politics.

4. Static Opinion

The last category of opinion dynamics we explore is that of static opinion. Despite high levels of polarization in Washington, some policy topics seldom provide fodder for partisan disagreement. On issues like drug treatment, public land management, Social Security, NASA spending, scientific research, and aid to cities, the parties usually agree. As a result, policymaking in these areas is unaffected by changes in party control—meaning the stimulus needed to spur a thermostatic inference response is absent. Moreover, these topics are not closely linked with the types of social values and inequalities that generate social movements. Therefore, rather than trending or cycling, public opinion on these topics is flat over time.

In this Section, we examine policymaking over time on five topics: NASA, drug treatment, public land management, aid to cities, and spending on science and technology. To assess the degree to which differences in party control affect government outputs in these issue areas, we catalogue major policy changes and government spending on these topics over a period of three decades. We assess the direction of policy change under Democratic and Republican governments, and examine the degree of partisan disagreement surrounding major legislation. We show that while these topics occasionally experience brief periods of politicization, the two parties typically take a similar approach to lawmaking in these areas. When major policy change occurs in these domains, it tends to be achieved through bipartisan action. As a result, new laws

in these areas sometimes fly under the radar of public affairs reporters because they are enacted without the usual partisan battles that attract media scrutiny. Without party cues or media attention, the public has little information on which to build and update its preferences on these topics. As a result, opinion on these topics is largely static—even when policy change occurs.

5. Conclusion

This short conclusion will reiterate our main findings and briefly discuss their importance for scholars addressing a range of research questions.

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Status and Timeline

The book proposal is based largely on previously completed working papers, “Beyond the Thermostat,” and “Developing Policy-Specific Conceptions of Mood” from 2011. Together, the papers lay the theoretical groundwork on which the book is built and contain most of the analyses that will be presented in the final monograph. However, the book builds on our working papers in four important ways: 1) The theory developed in the book makes a stronger and more explicit connection between policy outputs and the three types of opinion change; 2) The book will include a broader and more detailed literature review; 3) The analyses presented in the book will be updated through 2018 with newly released opinion data; and 4) The book will include an examination of policymaking on topics that have not been politicized (something the working

papers do not do). We will update these drafts as outlined above, and will rework much of the prose to make the narrative seamless and engaging for academics and students alike.

This table provides estimates of the length of each chapter

Chapter	Words	Tables	Figures
1	9,000	0	0
2	6,000	5	1
3	8,000	4	6
4	5,000	2	2
5	1,000	0	0
References	1,000	0	0
Total	30,000	11	9

Our expected timeline is as follows:

Summer 2019—Collect new opinion data and update all the mood series. Complete updated research for section 4. Revise tables and figures with updated data through 2018.

- Fall 2019—Draft the final manuscript.
- December 15, 2019—Deliver full manuscript to editor.

Target Audience

We expect a wide range of scholars of American politics will be interested in this manuscript and its findings, from those who study macro-level behavior to those who focus on public policymaking. In addition, the manuscript is written in an approachable style, which opens the door for educators to use our text in undergraduate and graduate courses on public opinion, policymaking, and civil rights. As a short manuscript, it can also be widely used as a supplemental course text.

Similar Works

Stimson is author of several works on similar topics (1999, 2004, with MacKuen and Erikson 1995, 2002) and Soroka and Wlezien (2010) have written on the thermostatic model. This book is less comprehensive than any of these previous works. This work adopts a narrow focus and

seeks to present a simple but comprehensive model of opinion change based on the thermostatic-inference model.

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